



Title: A framework for e-government success from the user's perspective

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**A FRAMEWORK FOR E-GOVERNMENT SUCCESS
FROM THE USER'S PERSPECTIVE**

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**A Framework for e-Government Success from the
User's Perspective**

by

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A Framework For e-Government Success from the User's Perspective

Obaid Almalki

Abstract

This thesis aims to contribute to a better understanding of e-government portal success by developing a e-government success framework from a user's perspective. The proposed framework is underpinned by relevant theories, such as DeLone and McLean's IS success model, the Technology Acceptance Model (TAM), self-efficacy theory and trust. The culture aspect has also been taken into consideration by adopting personal values theory introduced by Schwartz (1992).

Three data collection methods were used. First, an exploratory study was carried to explore the main aspects and factors for understanding e-government systems success. Second, a Delphi study was conducted to investigate which of the ten value types are particularly relevant to success or have a significant impact. Third, a survey-based study was carried out to validate empirically the proposed theoretical framework.

Results of the exploratory study helped to identify the potential success factors of e-government systems. The results of the Delphi study suggest that four of the ten values, namely self-direction, stimulation, security, and tradition, most likely affect e-government portal success. Structural equation modelling techniques were applied to test the research model using a large-scale survey.

The findings of hypothesis testing suggested that e-government portal success (i.e. net benefit) was directly affected by actual use and user satisfaction and indirectly affect by a number of factors concerning system quality, service quality, information quality, perceived risk, and computer self-efficacy. By combining IS success model and TAM, this study found system quality, information quality and service quality affected the perceived ease of use, but service quality had no effect on perceived usefulness. However, perceived risk seemed to have no effect on attitudes towards using, but very small negative effect on perceived usefulness. Users' computer skills was found to have no effect on perceived ease of use and very small effect on perceived usefulness. These indicate that risk and IT skills are playing less significant role in the context of e-government. The research findings confirmed that adoption was not equivalent to success, but it was the necessary precondition to success.

In the personal values-attitude-behaviour model, the empirical evidence suggested that Conservation affects attitude towards use which, in turn, affects behavioural intention to re-use. Openness to change had no effect on attitude toward using. The findings provide important implications for e-government research and practice.

I wish to dedicate this work to my parents and my family

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List of Abbreviations

AGFI	Adjusted Goodness-of-Fit Index
ADF	Asymptotically Distribution Free
CFI	Comparative Fit Index
DV	Dependent Variable
DOI	Diffusion of Innovation
GLS	General Least Squares
GFI	Goodness-of-Fit Index
G2B	Government to Business
G2C	Government to Citizen
G2E	government to Employee
G2G	Government to Government
IFI	Increment Fit Index
IV	Independent Variable
ICT	Information and Communication Technology
IS	Information Systems
IT	Information Technology
ML	Maximum Likelihood
NNFI	Non-Normed Fit Index
NFI	Normed Fit Index
OECD	Organisation for Economic Co-operation and Development
PLS	Partial Least Square
PVQ	Portrait Value Questionnaire
RMSEA	Root Mean Square Error of Approximation
SVS	Schwartz Value Survey
SEM	Structural Equation Modelling
TAM	Technology Acceptance Model
THV	Theory of Human Values
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Actions
UN	United Nations
ULS	Unweighted Least Squares

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Declaration

I declare that this thesis is my own unaided work. It is being submitted for the degree of Doctor of Philosophy at the University of Bedfordshire.

It has not been submitted before for any degree or examination in any other University.

Name of candidate: Obaid Almalki

Signature:

Date: 16/09/2014

1 Introduction

This introductory chapter provides an overview of this research and the thesis structure. First, it describes the background and rationale of the research. Second, it discusses the research gaps. Third, it presents the aim and objectives. Fourth, it discusses the research scope. Fifth, it summarizes the research methods and process. Finally, the structure of the thesis is outlined.

1.1 Research Background and Rationale

The rationale for conducting this research comes from the great benefits that e-government can provide to its stakeholders. Therefore, to ensure the delivery of these benefits, it is crucial to know the factors that might lead to a successful e-government portal. This section begins by introducing the great benefits individuals might enjoy when using e-government, then investigates the importance of evaluating e-government service. The last section discusses the importance of culture and personal values to e-government portals.

1.1.1 Benefits of e-Government Systems

Local and state governments are spending large amounts of money to establish information and communication technologies (ICTs) in both internal operations and external interaction with the public through the provision of public services (Sandoval-Almazan and Gil-Garcia, 2012). The benefits of e-government exceed delivering government information and services to citizens to “provide ever-present access to Government information and service with a total clarity and transparency of government activities” (Irani et al., 2008).

The importance of e-government systems comes from the great benefits that they provide to individuals. The following benefits of e-government systems have been discussed in the literature:

- Reduced costs due to the lowered administrative and operational transaction cost for governments (Dada, 2006; Irani et al., 2005; Magoutas and Mentzas, 2010).
- e-Government promotes participatory democracy as one of the services it encompasses (Irani et al., 2005; Sandoval-Almazan and Gil-Garcia, 2012).
- Enhanced services offered by governments to citizens, community and businesses (Irani et al., 2005). This enhancement is accomplished by enabling and improving the efficiency with which government services are delivered to businesses, agencies, employees and citizens (Carter and Bélanger, 2005).

- More timely services (Bhatnagar, 2000; Gilbert et al., 2004).
- e-Government will lead to deeper transparency (Sandoval-Almazan and Gil-Garcia, 2012).
- Convenience for citizens as they are not compelled to travel and there are no constraints in terms of place and time for receiving e-government services (Magoutas and Mentzas, 2010; Sandoval-Almazan and Gil-Garcia, 2012).
- More customized services to citizens (Chalhoub, 2010).
- Strategic advantages in the form of: improving decision making through streamlining of information, enhancing organizational learning and knowledge sharing, improving interactions with citizens, businesses and other government organizations (Tung and Rieck, 2005; Zhang et al., 2005).
- Providing access to up-to-date government information and services with total transparency and clarity of government activities (Irani et al., 2008).

Previous research on e-government highlighted the potential benefits that e-government can offer to businesses, citizens, government organizations and the general community at large. In fact, the provision of governmental electronic services promises efficiency in paper work reduction and elimination of corruption (Ndou, 2004). This promise has inspired many researchers to investigate the success of e-government portals developed by public sector agencies.

For example, Wood et al. (2003) present a multidimensional approach for evaluating web-based e-government to ensure that the full benefits of investing in e-government are realized. Wood et al. (2003) stated that relying on any single strategy or technique to evaluate is likely to suffer from incompleteness and eventually will lead to misleading results. This is in line with this research where a multidimensional framework has been proposed to ensure the maximum benefits of e-government systems can be obtained through a comprehensive understanding of key influential factors.

1.1.2 The Importance of Understanding e-Government Success

This research seeks to add to the body of knowledge of information systems (IS) and e-government by developing a framework to understand e-government portals' success and associated factors.

In this study, the practical reason for developing a framework for e-government portals' success is to enhance and to increase the effectiveness of e-government portals. This is consistent with Magoutas and Mentzas (2010): "the measurement of portal's and e-

service's quality, forms the basis of an improvement process". Effective measurement will eventually result in higher quality products delivered to customers (Walrad and Moss, 1993). Furthermore, measures empower individuals at all levels by giving the data required to make fact-based decisions (Walrad and Moss, 1993).

Yuan et al. (2012) consider e-government as a joint product of new principles of public administration and information technology (IT). In the 21st century, e-government has been a key element in the reconstruction of public services in many countries (Yuan et al., 2012). As a result, e-government portals have become one of the most important means for delivering public services and for interaction between citizens and government (Yuan et al., 2012). Thus, understanding the success of e-government systems is an important issue for both researchers and practitioners. However, scarce information is known about the effectiveness and success of e-government portals (Torres et al., 2005).

In general, research on ICT evaluation has been on various agendas for only three decades (Kaisara and Pather, 2011) and research on e-government in particular has a relatively short history (Dwivedi, 2009). Governments all over the world have started launching their e-government initiatives only since the late 1990s (Torres et al., 2005; Meijer et al., 2009; Ke and Wei, 2004), aiming at delivering their information and services in electronic form to their citizens, residents, and businesses (Torres et al., 2005).

e-Government, like any other new IT application (Khalil, 2011), has been researched since its emergence. However, its short research history means that some crucial issues such as e-government success have not been fully investigated yet from different perspectives, despite a significant number of papers being published in this area. Smithson and Hirschheim (1998) stated that IS evaluation is a "necessary evil" and it becomes much more complex and demanding when it comes to the context in which IS are developed and used.

Likewise, in the context of e-government success, Alshawi and Alalwany (2009) comment that, "the evaluation of e-government in both theory and practices has proven to be important and complex". They reasoned the complexity of measuring the success to: "the multiple perspectives involved, the difficulties of quantifying benefits, and the social and technical context of use". Ke and Wei (2004) stated that, "e-government is not a simple matter". However, continuous evaluation is needed because it will lead to enhancing the e-government system (Irani et al., 2012).

E-government is one of the applications of IS that has a special context with reasons for development and purposes of use. Governments exploit the advantages of ICT to develop e-government. Fu et al. (2006) commented on the importance of understanding

the acceptance of e-government services by mentioning one of the advantages of investing in technology: "The importance of understanding and influencing citizens' acceptance of e-government services is critical, given the investment in technology and the potential for cost saving". Acceptance of technology by users is defined by Swanson (1988) as "[a] potential user's predisposition toward personally using a specific system". Furthermore, the issue of understanding the 'under-utilization' has plagued governments and still remains (Fu et al., 2006). Understanding the acceptance or rejection of an IS has proven to be a challenging task (Fu et al., 2006).

Magoutas and Mentzas (2010) stated that, in the e-government domain, the public authorities usually do not face any competition since it is the responsibility of government to deliver e-services to citizens. In this situation, one may think that it is not a necessity to improve the quality of the public e-services, because the citizens have no other choices; the government is the only service provider (Magoutas and Mentzas, 2010).

However, since the 1990s, when the internet became commercialized and transformed the use of ICTs, citizens have grown accustomed to the customer-centric type of service delivery which they experience from the private sector (Kaisara and Pather, 2011). Consequently, citizens expect to receive the same quality of services that they experience with the private sector from the public sector. This accumulated reliance on the use of ICT has led to many challenges. One of the challenges that managers face in both the public and private sectors is to evaluate the success or effectiveness of the investment in ICT.

In reality, knowing the quality of e-government services and user satisfaction is crucial in the e-government domain for two main reasons (Magoutas and Mentzas, 2010): First, citizens require significant improvement in e-government service quality that is provided via Internet channels in comparison to traditional channels. Second, governments may benefit from moving the demand side of e-government online services from offline channels, the traditional (e.g. call centres, face-to-face counters, and postal), to online-channels. In fact, the evaluation of e-government services is the way to improve their quality and enhance them. This argument is supported by Yuan et al. (2012): "a systematic approach to performance evaluation and management of these portals is essential to enhance the managerial performance and overall level of e-government implementation".

One of the challenges associated with the success of online services delivered via a website is the sophistication level at which these online services are offered (Panopoulou et al., 2008). The reason is the huge difference between offering online information only and offering the whole transaction of the service online (Panopoulou et al., 2008).

Gupta and Jana (2003) stated that in order to ensure successful e-government, it is vital to assess its performance and to take the required actions to resolve the issues and make necessary improvement. Also, to be a successful organization, it is essential to “develop a culture of measurement, educating employees on performance measures and uses as they manage their organizations through the processes which e-government delivers” (Gupta and Jana, 2003).

Another aspect which makes the research on e-government success necessary, is the investment of significant financial resources (Fitsilis et al., 2009). According to the recent e-government survey report produced by the Department of Economics and Social Affairs at the United Nations, key European countries spend more than double on ICT than other EU countries (Department of Economic and Social Affairs, 2012). Alshawi and Alalwany (2009) stated that, “the importance of e-government evaluation is due to the enormous investment put in by governments for delivering e-government services and to the considerable pace of growth in the e-government field”. A similar argument was given by Irani et al. (2008): “it is the public purse that funds such investments, there is increasingly attention being paid to the evaluation of these investments, such that value for money and organisation learning can be realised”.

All over the world, government organizations have been involved in web-related activities. Therefore, it comes as no surprise that most government authorities in advanced and developing countries have their own presence on the Internet. Although huge investments have been made to develop these e-government portals, there is still a lack of comprehensive frameworks to establish the complex mechanisms on how to measure the e-government success and how system features, risk factors, and user's characteristics may affect the portal success.

Furthermore, systematic measurement of e-government software products and digital public services for the purpose of improving citizen satisfaction leads to the establishment of trust between citizens and politicians in government and strengthens social participation (Fitsilis et al., 2009). To answer the question of how to deliver higher quality services with lower cost, a number of approaches have been put forward by researchers for e-government evaluation (Kaisara and Pather, 2011). This study is amongst the body of e-government success research that intends to investigate how to identify the key factors affecting the success of e-government portals.

e-Government has recently emerged in Saudi Arabia and other developing countries. Therefore, many issues such as being knowledgeable about the success factors of e-government portals remain unclear (Torres et al., 2005). In order to overcome this

challenge, it is crucial to better understand how to measure the e-government success and what are the key factors affecting the success.

1.1.3 The Impact of Culture and Personal Values on e-Government Systems

It is important to note that culture is a crucial factor that plays a role in many aspects of our lives. As the e-government system is one of the new IT applications, its adoption is believed to be influenced by different factors such as culture (Khalil, 2011). Therefore, culture might be one of the factors that leads to the failure of the whole program of e-government. Kumar and Best (2006) argue that, "e-government programs may fail to be politically and institutionally sustainable due to people, management, cultural, and structural factors".

Personal values represent one of the culture levels. Hofstede et al. (2010), stated that the core of culture is formed by values. They are "broad tendencies to prefer certain states of affairs over others" (Hofstede et al., 2010). Rokeach (1973) stresses the paramount importance of the value concept as follows: "The value concept, more than any other, should occupy a central position ... able to unify the apparently diverse interests of all the sciences concerned with human behaviour". Since the values are the stable element in culture, comparative research on culture starts from the measurement of values (Hofstede et al., 2010). Therefore, including values in studies will help future research to identify cultural differences between groups of people or categories of respondents.

Cultural characteristics of e-government users are likely to affect the extent to which services of e-government are accepted and diffused (Khalil, 2011). Thus, for the reason that this research is concerned with the individuals' (i.e. e-government users) perspective, the effect of personal values on e-government portals' success has been examined. This has been decided based on what is informed by the literature about the role of personal values –as one of the essential parts of culture– in various contexts. Section 3.3 provides a discussion about what constitutes culture. Section 3.5.2 explains where personal values fall in the culture concept.

Vinson et al. (1977) support the above argument, stating: "The role of personal values as standard or criterion for influencing evaluations or choices regarding persons, objects, and ideas suggest the relationship of values to behaviour". The values play a fundamental role in the selection and maintenance of the goals that human beings strive for and, also, regulate the manner and methods where this striving takes place (Vinson et al., 1977). According to Schwartz (1992), theorists from different disciplines (e.g.

physiology, sociology and anthropology) view values as the criteria people rely on to select and justify actions and to assess people (including the self).

In the context of e-government, culture in general has been explored in a wide variety of studies (e.g. (Irani et al., 2005; Carter and Weerakkody, 2008)) and at national level specifically (e.g. (Khalil, 2011; Al-Hujran et al., 2011)). However, the impact of personal values, i.e. individual level values, on e-government portals' success is still insufficiently examined.

Personal values have been found to be associated with different behaviours. Many studies are listed in (Roccas and Sagiv, 2010) that examine the influence of personal values on different behaviours. Although the impact of national culture on IS in general and on e-government in particular has been identified in the literature, future research needs to focus on exploring and examining the relevance of the ten basic values of Schwartz (1992) and their respective impact on e-government portals' success.

1.2 Research Gaps in e-Government Success

In fact, understanding e-government success is still in its development stage and it is not yet a mature process. This argument is supported by Irani et al. (2008); the authors conclude that, "e-government evaluation is an under developed area". Wang and Liao (2008) assert the importance of better understanding of the factors that measure the success of e-government systems: "For Web-based applications to be effective in the eGovernment environment, there is a need to develop and better understand the factors which best measure the success of eGovernment systems".

By reviewing the literature of e-government, it appears that there is no comprehensive model for e-government success because most of previous work has focused on one or two particular aspects of e-government success. Therefore, this important gap was addressed in this study by proposing a theoretical framework (see Chapter 6) underpinned by IS success theories and models, personal values theory, perceived risk theory, and self-efficacy theory. The rationale for the inclusion of these theories and models is explained further in Chapter 6.

Moreover, as this study adopts the updated IS success model of DeLone and McLean (2003) as the backbone of its proposed framework, it responds to the call made by Petter et al. (2008). The authors call for more empirical research on the updated IS success model (2003) across different contextual boundaries to establish the strength of interrelationships. Also, they mentioned different boundary conditions which deserve attention such as: the type of information system under investigation, the timing of

evaluating success (i.e. the overlap between the time of implementation and the time of evaluation) and the voluntariness of the system. This study contributes to filling this gap.

According to Wang and Liao (2008), “the extent to which traditional IS success models can be extended to investigating e-government systems success remains unclear”; this research contributes to filling this gap by using well known IS success theories and models, integrating them with other theories from different disciplines, and suggesting new measures. These measures were introduced in the exploratory study which was conducted as part of this research (see Chapter 5).

Moreover, this study extends the multidimensional concept of IS success to respond to the call made by DeLone and McLean (2003): “The challenge for the researcher is to define clearly and carefully the stakeholders and context in which net benefit are to be measured”. Accepting this call, this research considers ‘individuals’ or ‘e-government users’ to be the subjects. Also, in the exploratory research (See Chapter 5), new measures of net benefits particularly have been suggested. In the later stage of this research, these measures along with others have been examined and validated (see Chapter 8 for more information).

Regarding culture and personal values, this is the first study that considers the personal values theory of Schwartz (1992) in order to pursue a deeper understanding of its impact on e-government portals’ success. Schwartz (2006) stated that, the ten basic values are varied in their salience and relative importance within contexts and situations and there were no studies that discuss the relevance of ten basic values to the success of e-government portals. This study contributes to filling the gap by conducting a Delphi study (see Chapter 7 for more details about the Delphi study). To the best of the researcher’s knowledge, this is the first study that attempts to integrate personal values theory in a framework for understanding e-government portals’ success.

Many studies have been conducted in developed countries (e.g. (Teo et al., 2008; Zhang et al., 2005)), including Singapore and the United States, which regarded as leaders in e-government development. These studies are characterized by advanced topics in e-government, such as citizens’ trust in e-government and discussing the barriers of e-government. These are two examples of recent leading issues in e-government research (Worrall, 2011). However, there has been scarce research on evaluating the effectiveness of e-government in the context of developing countries (Schuppan, 2009).

1.3 Aim and Objectives

The study aims to develop a theoretical framework to understand e-government portals' success from a user's perspectives. To meet the aim of this research, the following specific objectives are developed:

1. To understand the current research and debate on IS success, e-government portals success, and other research fields that are relevant to this study, thus, to identify the research gaps.
2. To explore the perceptions, ideas and thoughts of e-government users in Saudi Arabia to determine what factors/measures affect the success of e-government portals.
3. To develop a theoretical framework and hypothesis that is established upon reviewing the literature and the exploratory study.
4. To understand the impact of personal values on e-government success.
5. To examine and validate the conceptual framework from the individual user's perspective using large scale survey in the context of Saudi Arabia's e-government.
6. To provide implications and directions for future research and practice.

1.4 Research Scope

Based on the interactions between governments and their stakeholders through the Internet, different models were suggested in the literature to categorize e-government: government to employees (G2E), government to businesses (G2B), government to other institutional government organizations (G2G), and government to internal clients and citizens (G2C) – each of which exploits internet technologies to deliver government services online (Carter and Belanger, 2004; Tan et al., 2007).

The United States Government's Office of Management Budget (OMB) and General Accounting Office (GAO) use the same categorizations of the aforementioned e-government models: G2G, G2B, G2E and G2C (Carter and Bélanger, 2005). In the literature, there are other studies that vary on the definition of these models. For example, Wang and Liao (2008) and Lee et al. (2005) limit e-government systems and services to only three models: G2G, G2B and G2C.

Carter and Belanger (2004) provide explanation of the aforementioned e-government models; G2E: government harnesses internet technology by allowing government organizations to communicate and interact with their employees online; G2B: government enables businesses to retrieve complete transactions with government organizations and

retrieve timely government information; G2G: government facilitates communication and interaction online among government organizations; and G2C: government enables citizens to obtain information and complete transactions such as renewing license online. This study investigates the development of the framework for evaluating e-government portals success from an individual perspective in the context of Saudi Arabia's e-government portals. Therefore, the study focuses on the government-to-citizen (G2C) domain. The other domains: G2E, G2G and G2B are out of the scope of this study.

In the context of e-government systems evaluation, Griffin and Halpin (2005) report that e-government focuses on the following:

1. Evaluating stages of e-government growth.
2. Evaluating the provision of e-government through the Internet.
3. Evaluating the involvement of e-government stakeholders.
4. Evaluating the costs of implementing e-government systems and the potential benefits.

This research focuses on the second stream of evaluating e-government stated by Griffin and Halpin (2005) from the individuals' perspective. Wang and Liao (2008) call for further research to focus on the scope of developing and understanding the factors which best measures the e-government portals success. The other streams stated by Griffin and Halpin (2005) are out of the scope of this research.

This research's geographic scope is Saudi Arabia. The sample for the exploratory study (see Chapter 5) and the survey-based study (see Chapter 8) were drawn from the Saudi Arabian population.

1.5 Summary of Research Methods and Process

Data collection occurred in three main phases throughout this research. First, after the initial review of literature, an exploratory study was carried out as the first stage towards accomplishing this research. The objective was to explore the main aspects and factors for understanding e-government systems success. This exploratory study was conducted in the context of the Saudi government. Second, a Delphi study was conducted to investigate the correlation between e-government portal success and the ten distinct value types identified by Schwartz (1992). The objective of this Delphi study was to investigate which of the ten value types are particularly relevant to success or have a significant impact in the context of e-government portals. Third, a survey-based study was carried out to examine empirically the proposed theoretical framework.

Results of the exploratory study helped to identify the potential success factors of e-government systems. Actually, findings of the exploratory study as well as the literature review provide a basis to establish a preliminary framework for e-government portal success. The results of the Delphi study suggest that four of the ten values, namely self-direction, stimulation, security, and tradition, most likely affect e-government portal success. Then, the framework has been modified with regard to the relevant personal values to e-government portal success.

Finally, structural equation modelling techniques were applied to data collected using a large-scale survey in Saudi Arabia. Except for five links between variables, the hypothesized relationships between variables are significantly or marginally supported by the collected data. The findings provide important implications for e-government portal success and practice. Figure 1.1 below demonstrates how the three phases of data collection are linked with each other and how they led to the outcome of this research.

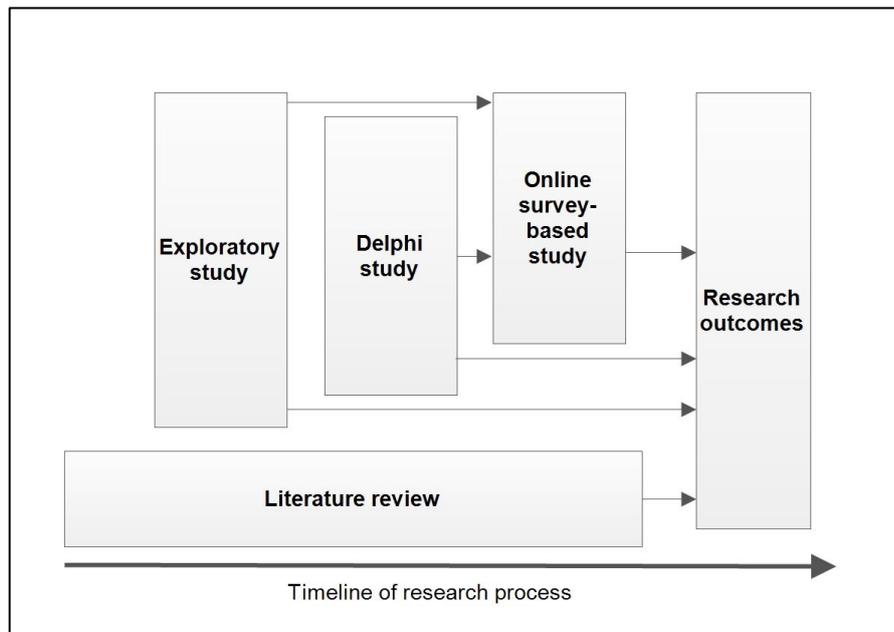


Figure 1.1: Timeline of research process

1.6 Thesis Outline

The study presents a detailed investigation of the research topic background, research methodology, data analysis, results, discussion and conclusion of the development of a theoretical framework for evaluating e-government portals' success; and the contribution to the body of knowledge and practice that helps to enhance e-government portals. The flow of this study is demonstrated in Figure 1.2.

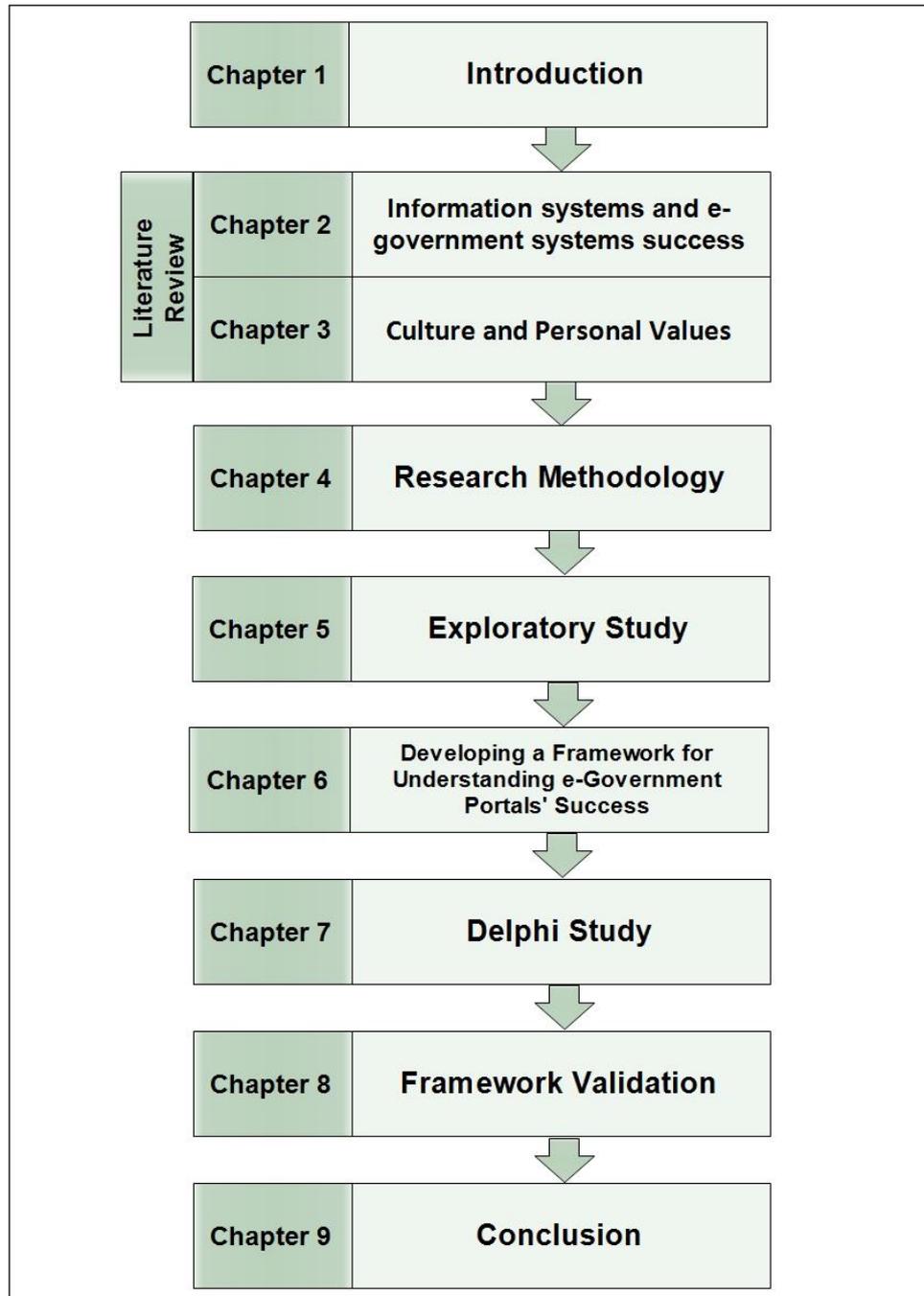


Figure 1.2: Thesis structure outline

This thesis is set-out over nine chapters. After introducing the whole research briefly in the present chapter, the related literature is reviewed in Chapters 2 and 3. In Chapter 2, the concepts of IS success in general, and e-government success in particular are outlined. Also, the literature relevant to the researched topic is reviewed. Then, Chapter 3 introduces the main concepts of culture, personal values, and discusses relevant studies. Moreover, it briefly provides some information about Saudi Arabia.

Chapter 4 is primarily aimed at discussing the concepts of research methodology, the methodology followed in this research, and research design adapted by this PhD study including strategies, instruments, data collection, analysis methods while discussing the main stages and processes involved in the research and ethical considerations.

The following four chapters –5, 6, 7 and 8– are interdependent; it was found useful to separate them. Chapter 5 is dedicated to the exploratory study, Chapter 6 is dedicated to developing a conceptual framework to evaluate e-government portals' success, Chapter 7 is dedicated to exploring the relevance of personal values to e-government success, and Chapter 8 is dedicated to the validation of the proposed framework to assess e-government portals' success from individuals' perspectives. Indeed, Chapters 5, 7 and 8 present different stages of this PhD study which have their own methodology, collected data and findings.

Chapter 9 concludes this PhD study by summarizing the original contribution and the research outcomes. It also discusses the implications of research findings on future research and practice, addresses the limitations of the study and states some suggestions for future research. Table 1.1 summarizes the structure of the thesis.

Table 1.1: Thesis outline

Chapter #	Chapter Title	Content
Chapter 1	Introduction	Explanation of research
Chapters 2 and 3	Information Systems and e-government systems success	Literature review (2 chapters)
	Culture and Personal Values	
Chapter 4	Research Methodology	Summary of the concepts of research methodology and the methodology followed in this PhD research
Chapter 5	An Exploratory Study on e-Government Systems Success in Saudi Arabia	All four stages of this PhD research. Chapters 5, 7 and 8 represent the three stages that involve data collection and analysis
Chapter 6	Developing a Conceptual Framework to Evaluate e-Government Portal Success	
Chapter 7	Identifying the Relevance of Personal Values to e-Government Portal Success: Insights from a Delphi Study	
Chapter 8	Assessing e-Government Portal Success: Developing and Validating a Framework for evaluating e-government portal success	
Chapter 9	Conclusion	Summary of research and conclusion

Finally, the appendices contain supplementary materials and more details related to the research methodology, Delphi study and survey-based study. They also include a copy of research papers published as part of this study.

1.7 Summary

This chapter presents the research background and explained the research problem, aim, objectives, overview of methodology and the main research questions to be answered. Also, the chapter reveals the importance of the research topic and the way it contributes to knowledge. The subsequent chapters describe the practical implementation of what has been previously detailed in the thesis outline. The next chapter is the first part of the literature review on the topics relevant to the research.

2 Information Systems and e-Government Systems Success

This chapter aims to review the literature to establish the main issues that surround e-government systems and to provide a clear view of e-government success. The chapter aims to illustrate e-government concepts, definitions, information systems (IS) adoption and success with the focus on e-government systems. This enabled the researcher to attain a good understanding of the current research on e-government systems to address the key issues of e-government success.

This chapter starts with a general overview about the concept of e-government. It will then move to discuss IS and e-government success. The chapter proceeds to discuss e-government portals evaluations. Then, it discusses e-government acceptance and it provides information about IS adoption models and e-government adoption studies. The chapter ends with a discussion about e-government in the context of Saudi Arabia. Finally, a summary is provided.

2.1 An Overview of e-Government

2.1.1 What is 'Government'?

The Internet technology revolution as well as recent advances in information and communication technologies (ICTs) enables governments to move towards the e-government era. The letter 'e' in 'e-government' indicates all form of interactions with government transformed to an electronic form. However, to understand what 'e-government' means precisely, it is essential to understand what the term 'government' implies.

According to Grönlund and Horan (2005), government "is made up of a large number of organizations and many different kinds of processes". It is constituted by organizations that differ considerably in the services they provide. These services range from social welfare to road constructions to railroads to education to military defence (Grönlund and Horan, 2005). Pardo (2000) defined government as the means that society pursues to obtain their essential requirements. Examples of government agencies are those who construct roads, maintain the environment, collect and manage taxes, and fight crimes.

Kolachalam (2012) defines a government as: "an institution that meet some of society's most critical needs and any/every member of the society sometime or other has to interact with the government". Therefore, applying electronic approaches to government

will lead to electronic types of interaction between government as an institution and individuals (i.e. citizens and residents) to meet their requisites.

2.1.2 The Emergence of e-Government

Information Technology (IT) has become one of the essential elements of managerial reform (Moon, 2002). It has created many possibilities for enhancing the quality of public services provided to citizens and internal managerial efficiency (Moon, 2002). The rapid developments in IT creates a new means of providing services with e-government throughout the Internet (Baker, 2009). Indeed, when the Internet was invented by the US Department of Defence in the 1960s, no one could predict how this invention would change our life three decades later (Ho, 2002).

The term e-government emerged in the United States from the Clinton Administration (Moon, 2002). They attempted to advance e-government by overcoming the barrier of distance and time to deliver public services (Gore Al., 1993). The Vice President, Al Gore, placed a strong recommendations on the role and effects of e-government in federal services in the US (Grönlund and Horan, 2005; Gore Al., 1993). According to Torres et al. (2005), at the time when Gore's report emerged, "e-government was little more than a general recognition of a confluence of information technology (IT) developments and the application and use of these technologies by government entities".

Elsewhere, in the United Kingdom, the idea of e-government was associated with similar New Public Management reforms by the Blair government which prototyped e-government as a means to increase political participation by the public (Tolbert et al., 2008). In developing countries, the Saudi Arabian government is an example of countries which adopted the idea of e-government in the mid-2000s (Yesser Program, 2014).

However, the history of using information technologies within the business of government organizations can be traced back to the beginnings of the history of using computers. A literature on the utilization of ITs in governments goes back to the 1970s (Danziger and Andersen, 2002). The focus of this literature concerns the use of ITs within governments in internal and managerial work, while the recent e-government literature focuses on external use of ITs, such as the provision of services to citizens (Ho, 2002). Nowadays, research in e-government is concerned with issues such as service processes and decision-making, while in the past, the research on e-government focused on earlier computing issues such as office automation (Grönlund and Horan, 2005).

In the public sector, government agencies have also embarked on ICT investments in Internet technologies. They attempt to take advantage of the benefits of Internet

technologies in extending the means by which public services are delivered to their citizenries (Kaisara and Pather, 2011). According to Kaisara and Pather (2011), “citizens who have grown accustomed to customer-centric service delivery from the private sector, expect the same immediacy of service from government”. Therefore, citizens expect their government to respond to their manifold demands throughout the Internet (Gupta and Jana, 2003).

e-Government is similar to e-commerce in that it was born out of and emerged from the internet boom (Grönlund and Horan, 2005). In recent years, the rapid growth of ICT has had a substantial effect on the way that governments at different levels function (Gupta et al., 2008). The use of ICT by government led to the evolving of the term e-government (Gupta et al., 2008). When mentioning ICT in the literature, it refers to a spectrum of technologies such as Intranet, Internet, Extranet, Enterprise Resource Planning (ERP) and other advanced technologies that range from infrastructure implementation to service and operation improvements within an organization (Gupta et al., 2008). Governments exploited the ICT technologies to leverage their services to citizens (Sung et al., 2009; Panopoulou et al., 2008).

There are many types of website that have been developed for different purposes (Parasuraman et al., 2005). Portals, online newspapers, shopping sites such as Amazon.com and eBay.com, download sites, sites that provide collections of links for other websites, and job-seeking sites such as Monster.com are examples of the websites available with different purposes. An e-government portal is a form of website that has been developed by a government for the sake of citizens.

It is clear when reviewing the literature that different terms are used to cover e-government sites: Garcia et al. (2005) uses the term 'e-government sites' Wang and Liao (2008) 'e-government systems', Yuan et al. (2012) 'government portal websites', Sandoval-Almazan and Gil-Garcia (2012) 'government internet portals', and Al-Khalifa (2010) 'eGovernment websites'. All of these terms indicate the same phenomenon of websites that have a presence on the Internet and belong to government authorities.

2.1.3 What is e-Government?

Digital government or e-government are occasionally used interchangeably (Gupta et al., 2008). e-Services is broadly defined as the “interactive software-based information systems received via the Internet” (Featherman and Pavlou, 2003). Many definitions of e-government have been provided by organizations and academia.

Similar to other concepts of contemporary, there are different definitions of e-government among specialists, researchers and institutions, but most of them agree to conceptualize e-government as the use of ICT to deliver services in a better way for individuals and businesses. Chee-Wee and Benbasat (2009) characterized e-government in three ways based on its definitions, the role of citizens and the implication for development: Virtual socialization process, virtual value chains and IT artefacts. Table 2.1 (Chee-Wee and Benbasat, 2009) lists definitions of e-government based on this characterization.

Table 2.1: Definitions of e-government based on certain characteristics (Chee-Wee and Benbasat, 2009)

Definition (e-government is defined as)	Citizens' Role	Implication for development
Virtual Socialization Process between citizens and public sector organizations to establish what is called responsive government	Participants in the democratic process	deliver citizens' voices to government via easily accessible virtual means of communications
Virtual Value Chains between public sector organizations and their stakeholders to streamline governmental administrative procedures and processes	Business partners of public sector organizations	additional value is created by exploiting the collective power of stakeholders via digital alliances
IT Artefacts adapted by public sector organizations to accomplish cost-efficient and effective business transactions	customers of governmental organizations' transactions	continuously deliver enhanced products and services via electronic means

The United Nations (UN) is one of the international organizations paying great attention to e-government as an emerging technology and has conducted many studies and surveys in this field at the international level. The UN define e-government in their website as, "E-government refers to the use of information and communication technologies (ICT) – such as Wide Area Networks, the Internet, and mobile computing – by government agencies" (United Nation Public Administration Programme, 2011).

The Organisation for Economic Co-operation and Development (OECD) is another organization that shows interest in e-government. OECD's definition of e-government refers to the use of ICTs in general and internet technology in particular which is reflected in government becoming better government. The World Bank defines e-government thus: 'e-Government' refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. It can be observed that these definitions all describe e-government from a technological perspective. Table 2.2 categorizes the definitions of e-government available in the literature to three categories: technological, political, and potential benefits by e-government.

It is worth mentioning that there is a difference between governance, e-governance and e-government. The terms appear to be similar but they have different meanings. Basu (2004) explains these three terms as follows. Starting with the term governance, Basu (2004) describes good governance as an exercise of political, economic and administrative authority to enhance the management affairs at all level in a country. The electronic means in e-governance indicates support and stimulation of good governance (Basu, 2004). The author differentiates between e-governance and e-government by stating that e-governance is more than a government website published on the Internet, which indicates one form of e-government systems. In addition, e-governance is defined by Grönlund and Horan (2005) as the "the whole system involved in managing a society". These systems include all activities performed by not only government authorities but also voluntary organizations, companies and citizens.

Table 2.2: e-Government from different perspectives

Category of definition	Definition	Source
Political perspective	"a belief in the ability of technology to achieve high levels of improvement in various areas of government, thus transforming the nature of politics and the relations between governments and citizens"	(Dada, 2006)
	"The use by the Government of web-based Internet technologies, combined with processes that implement these technologies, to a) enhance the access and delivery of Government information and services to the public, other agencies, and other government entities or b) bring about improvements in Government operations that may include effectiveness, efficiency, service quality, or transformation;"	(Grönlund and Horan, 2005)
	"e-government is not only about changes in the area of public administration but also about changes in the area of public decision-making"	(Mahrer and Krimmer, 2005)
Technological perspective	"a government's use of ICT, particularly Web-based Internet applications, to enhance the access to and delivery of government information and service to citizens, business partners, employees, and other agencies and entities."	(Wang and Liao, 2008)
Benefits perspective	"[E]-government is the use of information technology to enable and improve the efficiency with which government services are provided to citizen, employees, businesses, and agencies"	(Carter and Bélanger, 2005)

Nowadays, the phenomenon of e-government has received more attention from practitioners and researchers alike. Bélanger and Carter (2012) note the following examples of special issues and dedicated, new journals. In the literature of IS, several journals have published special issues on the topic of e-government: the *European Journal of Information Systems*, the *Journal of Strategic Information Systems*, the *Journal*

of Cases on Information Systems, the *Information Systems Journal*, the *DATABASE for Advances in Information Systems*, and the *Journal of Organizational and End User Computing*. There are three new journals that are dedicated to e-government: *Electronic Journal of E-government*, *E-government, An International Journal*, and *International Journal of Electronic Government Research* (Bélanger and Carter, 2012).

2.2 IS and e-Government Success

2.2.1 What is Success?

Going back to the origin of the term 'success', it is defined in Oxford Dictionary in two main parts. The first part relates the term success to the aim or purpose: "the accomplishment of an aim or purpose". The second aspect of success has been linked to the outcomes or results of something: "the good or bad outcome of an undertaking". The meaning of the term 'success' in the American Heritage Dictionary is similar. Success can be seen in many ways (Cottrell, 2010). Some people may perceive success in terms of objective material criteria (e.g. how much money you earn, how big a house you own, and how high a position you have in your company) (Cottrell, 2010). However, the reality is, the success is a very subjective matter that depends on what we perceive as meaningful (Cottrell, 2010).

Success has been seen from many different angles and sometimes it has been identified in a very broad sense. For instance, in the context of e-service quality, Parasuraman et al. (2005) stated that, "low price and Web presence were initially thought to be the drivers of success". Parasuraman et al. (2005) listed several examples of what may lead to failure of electronic services: when the transactions could not be completed, when products were not delivered on time or at all, when the information could not be accessed and when the emails of consumers were ignored and not answered.

IT-related success is categorized into three groups with regard to benefits: economic technological, and strategic (Grover et al., 1996). According to Grover et al. (1996) commenting on the meaning of success in the area of outsourcing of information systems, "The success of outsourcing can be assessed in terms of attainment of benefits". This argument is crucial and could be applied to other IS applications.

For instance, Garrison et al. (2012) discuss the three categories of benefits identified by Grover et al. (1996) in order to explain what success means in the context of cloud computing: Economic benefits refer to the ability of organizations to use the cloud vendor's expertise and their technological resources to minimize the expenses of in-house IT; technological benefits refer to accessing state-of-the-art technology and experienced personnel; and strategic benefits refer to making the organizations more

focused on their core business activities when the whole or parts of its IT functions are hosted and managed by an outside vendor.

The abovementioned categories of benefits that explain the term success can also be applied to e-government as one of the forms of using IT to deliver products or services to individuals. The first category of benefits is economic which relates to the ability of the government organization to use all the available and recent technological resources to cut the cost for delivering services to citizens and residents. Fu et al. (2006) stated that the use of 2D barcode tax-filing methods and the Internet reduce the cost of collecting tax.

Second, technological benefits relate to the ability of government organizations to exploit the tremendous advantages associated with using the Internet. In the broad definition of e-government given by Wang and Liao (2008) (see Table 2.2), the Internet is one of the essential technologies that can deliver e-government services to citizens, employees, business partners and other organizations and entities.

Third, are the strategic benefits, which lead to success in e-government projects. Zhao (2013) stated that strategic management is an essential part for any e-government project to success: "[t]aking a strategic management approach in e-government development as it fosters long-term orientation as well as forward and systemic thinking. Success in e-government projects requires well-thought and well-planned e-government strategy which is clearly aligned with long-term and current and future development of a nation".

Using the word success and linking it to the phenomenon under investigation, such as information systems, websites, or electronic government portals, implies both aspects of the definition of the term 'success'. These two aspects in the definition of the term success should be considered when explaining the success of something (i.e. projects, stories, tasks, services...etc.). To investigate the meaning of the term success in the context of e-government portals, it is practical to apply both aspects of the definition in this context. When any government initiative decides to implement an e-government portal, it has predefined objectives or purposes for developing e-government systems.

2.2.2 What is Success in the Context of Information Systems (IS)

The problem of explaining IS success is still under investigation and researchers who are interested in different area of IS success is still debating this concept. According to (Petter et al., 2008), "measurement of information systems (IS) success is both complex and illusive". Kanellis et al. (1998) see the attempting to explain what success means in

the context of information systems is a complex task. Seddon et al. (1999a) argue that the concept of IS success is still unclear and a fuzzy concept that is associated with different types of IT and various stakeholders. Rai et al. (2002) stated that theorists are still debating the issue of which constructs best measure the success of IS. Garrity and Sanders (1998) stated: "[a]ttempting to explain information systems success and failure is a complex task".

Agourram (2009) identify two factors of why IS success and measure is still problematic. Firstly, the nature of IS; its mixture of social (Kanellis et al., 1998; Garrity and Sanders, 1998) and technical aspects (Kanellis et al., 1998). Secondly, Alter (2000) argues that work practices and information technology perspectives are so intertwined which make it difficult to identify what contribute to success for each perspective.

According to Rai et al.(2002), "[a] core aspect of the DeLone and McLean model is that Use is considered as an IS success variable, consequently is included in their IS success model". These two constructs were stated by the original model of DeLone and McLean (1992) as the key elements which can predict user satisfaction (Schaupp et al., 2009). Schaupp et al. (2009) highlight that, information quality is a prominent success factor when examining overall IS success and has been found as the major predictor of user satisfaction. DeLone and McLean (1992) confirm this by stating, "system quality and information quality singularly and jointly affect both use and user satisfaction

Schaupp et al. (2009) in their findings mentioned that success is context dependent and researchers should consider carefully in their investigations the complex nature of website success. They gave e-commerce as an example of the applications of IS that use websites as a means for interacting with users.

Also, Schaupp et al. (2009) highlight the importance with which researchers should clearly indicate the limitations of the generalizability of findings made by researchers when they study e-commerce websites. This confirms that the factors which may contribute to successful e-commerce websites may not be the same as the e-government websites. In addition, this finding of Schaupp et al. (2009) confirms that success is contextual and varies in terms of contributing factors from one IS application to the other.

2.2.3 Chronology of IS Success Research

To explain the reasons why some ISs are successful, researchers have developed a number of models. The Technology Acceptance Model (TAM) was proposed by (Davis Jr, 1986). TAM explains simply why some ISs are more likely to be accepted by users than others (Petter et al., 2008). The main purpose for developing this model was to better

explain, predict and increase user acceptance of technology (Davis et al., 1989). TAM is one of the early attempts to define information systems success through technology acceptance. Those early attempts were ill-defined due to the interdependent, complex and multi-dimensional nature of IS success (Petter et al., 2008).

TAM was built upon the Theory of Reasoned Actions (TRA) (Datta, 2011). TRA was originated by (Fishbein and Ajzen, 1975). This theory is related to intention-based concept that considers the existence of external variables which influence a person's attitude indirectly toward a behaviour by affecting his/her salient beliefs about the results of conducting the behaviour (Fu et al., 2006). Adapted from this, TAM is well-established in the IT arena. Technology acceptance is an important issue (Fu et al., 2006). Fu et al. (2006) define technology acceptance as "an individual's psychological state with regard to his or her voluntary, intended use of technology".

There are many studies in IS that might be considered as the references for the concept of IS success. DeLone and McLean (1992) is the first study that associates the term 'success' with their proposed model for evaluating IS. This model has been cited by numerous studies, and is known as the 'IS success model'. The main motivation for DeLone and McLean (1992) to conduct this study was to identify factors which contribute to IS success.

Numerous studies have been conducted in the past that attempted to identify what factors affect IS success, but in these studies IS success has been an elusive aspect to define (DeLone and McLean, 1992). The reason is, those studies proposed different aspects of success making comparisons between them difficult, and building a tradition for IS research is similarly elusive (DeLone and McLean, 1992). Therefore, the aim for developing DeLone and McLean IS success model (1992) was to organize the diverse previous research as well as to present an integrated view of the concept of IS success in a comprehensive taxonomy form (DeLone and McLean, 1992; Petter et al., 2008).

DeLone and McLean (1992) created a taxonomy of IS success based upon performing a review of the studies published between 1981-1987 (DeLone and McLean, 1992; Petter et al., 2008). They address the problem of defining information systems success by introducing six components or variables of IS success: system quality, information quality, use, user satisfaction, individual impact, and organizational impact (DeLone and McLean, 1992; Petter et al., 2008; Wu and Wang, 2006). These variables of the original IS success model are interdependent variables, so they are not independent success measures (Petter et al., 2008). Table 2.3 lists important studies that were conducted in the context of IS success.

Table 2.3: Overview of the important IS success studies

Overview of study	Study Source
Technology Acceptance Model (TAM) was proposed to explain why users accept some IS more than others. TAM used the theory of reasoned actions (Fishbein and Ajzen, 1975) and theory of planned behaviour. Acceptance of IS does not imply success. However, acceptance might be a step to success.	(Davis Jr, 1986)
This is the first study that performed a review of studies published in the period 1981-1987 to create a taxonomy of IS success dimensions. The rationale of this study was the ill-defined nature of IS success in the early attempts.	(DeLone and McLean, 1992)
After the original IS success model was proposed by DeLone and McLean (1992), researchers suggested to add service quality as one of the dimensions. The authors adopted SERVQUAL and recommended to add it to the IS success model (i.e. an instrument to measure service quality initiated from the marketing literature).	(Pitt et al., 1995)
The authors tested a portion of the original IS success model (i.e., information quality, system quality, use, and user satisfaction). They replaced the construct use with usefulness because they argue that researchers have been trying to tap Usefulness and not Use.	(Seddon and Kiew, 1996)
This study presents and discuss a slightly extended and respecified version of DeLone and McLean's (1992) model.	(Seddon, 1997)
This study aims to revisit and reformulate the D&M IS success model by reviewing recently published papers in the area of IS success.	(DeLone and McLean, 2002)
The purpose of this study was to theoretically and empirically assess DeLone and McLean's (1992) and Seddon and Kiew's (1996) models in a quasi-voluntary IS context. Structural equation modelling approaches were applied to data of 274 users of student information system at one of the universities. Both models show reasonable fit with the collected data.	(Rai et al., 2002)
This study is one of the most crucial studies in the history of IS success research. The authors reviewed many of the important contributions to IS success research since they proposed the original IS success model in 1992. Also, they proposed enhancements and updated their model (i.e. adding service quality and unifying individual and organizational effectiveness into Net benefits).	(DeLone and McLean, 2003)
The authors review 90 empirical studies that use the six dimensions of DeLone and McLean' (2003) – system quality, information quality, service quality, use, user satisfaction and net benefits. These studies were examined based on certain criteria and the results summarized.	(Petter et al., 2008)

2.2.4 The Concept of IS Success in Different Contexts

Reviewing literature reveals that researchers have put huge efforts into studying what causes success in all the applications of IS under investigation. Recent studies have been conducted to investigate success in different applications of IS. In this context, researchers tackle this problem and propose new models and extend existing ones for

success focusing on the needs for consistent and better success metrics (DeLone and McLean, 1992; Ballantine et al., 1996; Seddon, 1997).

In the context of e-learning, Li et al. (2012) argued in their study that the behavioural intention to reuse can be an appropriate measure to understand success in the context of e-learning. Chang et al. (2011) adapted the updated IS success model of DeLone and McLean (2003) and confirms that the model is sufficient for the use of e-learning systems by nurses in terms of user satisfaction, intention to use, and net benefits.

In online banking, Lee (2009) stated that prior research has focused on the factors that influence the adoption of Internet, but there are limited studies that investigate positive (success) factors and negative (resistance) factors that help bank customers to adopt online banking. Lee (2009) proposed a model to provide a more comprehensive coverage of success and resistance factors of online banking.

In the context of e-commerce, Schaupp et al. (2009) proposed an investigation of an adapted version of IS success in e-commerce websites, addressing the call for more research of existing IS models in volitional IS contexts. Wang (2008) respecify and validated a multidimensional model to evaluate e-commerce systems success based on the IS and marketing literature. The proposed model consists of six constructs: system quality, information quality, service quality, perceived value, user satisfaction and intention to re-use. Table 2.4 lists examples of IS studies that look at success from different angles.

Table 2.4: Examples of IS studies that look at success from different angles

Aspect of success	Application of IS	Source
The greater the cost-saving gained from the use of e-commerce, the higher the internal driver	e-commerce	(Quaddus and Achjari, 2005)
Reducing the cost of providing services via the Internet and offering at the same time more services to more customers	customer service on the Internet	(Levenburg and Klein, 2006)
Reducing the cost of training and to provide employees with better access to instructions	web-based training	(Hashim, 2008)
Managers may positively influence the success of information systems through increasing the quality of the information produced by their systems.	information system function in a Kuwaiti private organization	(Almutairi and Subramanian, 2005)
Use, user satisfaction and net benefits	e-government	(Wang and Liao, 2008)

2.2.5 Success in the Context of e-Government

According to Teo et al. (2008), "information systems (IS) literature is mostly silent on what really contributes to the success of e-government Web sites". Defining success in e-government inherits the issues of complexity and ambiguity from defining success in IS. Many researchers have argued about the difficulties in defining success in IS and they stressed the complexity of this task in many studies (e.g. (DeLone and McLean, 1992; Kanellis et al., 1998; Seddon et al., 1999a; Rai et al., 2002; Petter et al., 2008)). The situation is no different in the context of e-government: defining the success concept is not an easy task since the nature of its measurement is multidimensional (Wang and Liao, 2008). This is consistent with what had been debated with regard to IS success.

The term 'successful e-government' has been widely used in many studies in e-government literature. Almarabeh and AbuAli (2010) nominated availability and accessibility as the two important factors for successful e-government. e-Government services have to be available to users 24/7 which will create a convenience atmosphere for partners, citizens and employees to process transactions anytime outside the standard government office working hours. Also, if the e-government website is not accessible to the e-government users, then it will be not a successful website (Almarabeh and AbuAli, 2010).

Reviewing the literature reveals that there is no consensus in the definition of the term success in the field of e-government. A recent study has been conducted as a cross-cultural comparison between a developing and a developed nation: Kuwaiti and British individuals on how they view the quality of interface of e-government websites (Aladwani, 2012). The authors stressed the culture factor as one of the crucial factors that cannot be neglected when developing e-government portals: "Nonetheless, as can be evidenced from the findings of the current article, it is not possible to develop a successful e-government website while ignoring one of its main contributing factors, national culture". They added: "Moreover, aesthetic quality is important for e-government success because it is difficult to create favourable visitor attitudes toward a website that uses inappropriate fonts, unattractive colour schemes or inconsistent styles".

Another perspective of success is seen by Carter and Bélanger (2005) as the willingness of citizens to adopt e-government services, such as license renewal and online voting. As the authors stated, the acceptance of such services provided by the government will eventually lead to the success of e-government initiatives. To some extent, this is consistent with the argument made by Petter et al. (2008) regarding acceptance that will lead to success: "[A]cceptance, however, is not equivalent to success, although acceptance of an information system is a necessary precondition to success". The aspect that Petter et al. (2008) stress in their argument is, success is not the acceptance by users of the technology. However, acceptance and adoption of the technology by users may lead to success.

Hu et al. (2005) look at the success of e-government from the project or initiative perspective. The authors of this study summarize the aspects of having successful e-government projects into four main factors: first, the users' perceptions and the impact of e-government on government, enterprises and government; second, the application of service and the management of e-government; third, the environment and the foundation of the development of e-government; and fourth, the electronic system of e-government. Hu et al. (2005) criticize the existing e-government appraisal frameworks as they often fail to include all of the four aforementioned aspects, such as the Beijing University framework which only appraises the websites of the prefectural cities.

Gil-García and Pardo (2005) discussed one success of e-government from the initiative point of view. Gil-García and Pardo (2005) stressed that e-government managers must be aware of the diverse challenges that they may face and overcome these challenges by using appropriate strategies. They categorize challenges to e-government and provide key success strategies for each challenge. For example, they mentioned information technology as one of the challenges that may face any e-government. They stated ease

of use, usefulness, demonstrations and prototypes as the key success strategies to overcome the information technology challenge aspect. Another example is information and data as a challenge (Gil-García and Pardo, 2005).

According to Teo et al. (2008), "citizens continued use of e-government Web sites will account for e-government's eventual success". Also, Bhattacharjee (2001) stated that continued use is a necessity for an IS to be able to generate net benefits.

2.3 E-government Portals Evaluations

Web evaluation issues is one of the areas that has been given scant attention by e-government researchers (Aladwani, 2012). When examining the quality of any website, a researcher may focus on user perspectives of the interface design elements (Aladwani and Palvia, 2002), or user-oriented activities of the websites (Kaylor et al., 2001).

According to Grönlund and Horan (2005), "different studies use different measures of e-government activity because they focus on different aspects". This can be clearly seen when reviewing literature that evaluates e-government. The themes of evaluating e-government can be categorized into the following themes: evaluating e-government readiness, studies which test and validate an IS model in the context of e-government, studies that evaluate a specific e-government website (e.g. tax collection website), studies that evaluate e-government from one angle or perspective (e.g. trust, security, privacy ... etc.).

In fact, an e-government portal is a specific case of Internet websites (Yuan et al., 2012). It is defined by Sandoval-Almazan and Gil-Garcia (2012), "not only as channels for providing government information and services, but also as powerful tools to exchange information and knowledge between different social actors and government entities and to enable participation in collective decision making efforts about important public affairs".

Wang and Liao (2008) emphasise the need to examine whether traditional IS success models can be reshaped to assess e-government systems success. They adapted the updated IS success model of DeLone and McLean (2003) to validate a multidimensional e-government systems success. Use, user satisfaction and net benefits were used as general perceptual measures of G2C success.

2.4 e-Government Acceptance

The literature on assessing e-government can be divided into two major streams: studies that discuss issues related to e-government initiatives/projects success, and studies that

discuss the adoption and success of e-government systems (e.g. e-government portals and mobile government, 'm-government'). Many studies have been conducted to investigate the success of e-government initiatives. These studies focus on what factors contribute to the success of e-government initiatives in different countries.

Although the first e-government stream mentioned above is out of the scope of this research, it is worth giving a brief idea about it. In the context of e-government initiatives, many researchers have discussed the different issues that affect e-government initiatives. Seng et al. (2010) conducted their study in the context of Malaysia to understand how cultural factors are important and how they can influence Malaysia's e-government initiative. This study has raised the importance of cultural barriers/enablers in e-government initiative implementation.

Weerakkody et al. (2012) aimed in their study to provide a comparative investigation of the strategies for e-government implementation between Slovakia and the UK. Al Nagi and Hamdan (2009) conducted their study in the context of Jordanian e-government to investigate its readiness. In the literature, there are various models proposed as appraisals of e-government project success. Examples of these frameworks are: Accenture (Rorissa et al., 2011), the United Nations (Rorissa et al., 2011) and Brown University (Fu et al., 2006).

The second stream of e-government success research focuses on understanding the adoption and success of the e-government websites. These studies use different terms for describing the websites of governments; the terms are used interchangeably in the e-government literature. Sandoval-Almazan and Gil-Garcia (2012) use the term 'portals', and Karkin and Janssen (2014) use the term 'websites'. Both of these terms are used interchangeably in e-government literature but both indicate the same meaning. Also, these studies can be divided to two major streams: studies that focus on the adoption and studies that attempt to understand e-government portal success.

2.4.1 Overview of IS Adoption Models

Many studies available in the literature investigate the acceptance of IT in various contexts. There is an evidence from the IS literature that indicates there are two main approaches for IT adoption research (Taylor and Todd, 1995; Harrison et al., 1997; Hernandez and Mazzon, 2007). The first approach suggests using intention-based models that are originally drawn from social psychology (Harrison et al., 1997; Taylor and Todd, 1995). These theories and models can be deemed as a foundation for IT usage by users and IT adoption by firms (Harrison et al., 1997). Examples are the Theory of Planned Behaviour (TPB) and the Technology Acceptance Model (TAM) (Harrison et al.,

1997). The second line of research has examined the usage and adoption of IT from a Diffusion of Innovations (DOI) perspective (Taylor and Todd, 1995).

2.4.1.1 Diffusion of Innovations (DOI)

According to Rogers (2010), diffusion is a type of social change, defined as “the process by which an innovation is communicated through certain channels over time among the members of social systems”. Diffusion is a special type of communication in which the messages communicated are about new ideas (Rogers, 2010). An innovation is “an idea, practice, or object perceived as new by individual or other unit of adoption” (Rogers, 2010). Communication of new ideas is “a process in which participants create and share information with one another in order to reach a mutual understanding” (Rogers, 2010).

The new idea in the content of messages gives diffusion special characteristics (Rogers, 2010). The newness indicates that some extent of uncertainty is contained in diffusion. Rogers (2010) defined uncertainty as “the degree to which a number of alternatives are perceived with respect to occurrence of an event and the relative probability of these alternatives”. It implies a lack of information, structure, and predictability (Rogers, 2010). The four main elements of diffusion that are identifiable in every diffusion study are: the innovation, communication channels, time, and social system (Rogers, 2010). The five most important characteristics of innovation are: relative advantage, compatibility, complexity, trialability, and observability. Table 2.5 shows the definitions of these five attributes of innovation taken from (Rogers, 2010).

Table 2.5: Definitions of the five attributes of innovation (derived from (Rogers, 2010))

Innovation attribute	Definition
relative advantage	The degree to which an innovation is perceived to be better than the idea it supersedes
compatibility	The degree to which an innovation is being consistent with existing values, past experiences and needs of potential adopters
complexity	The degree to which an innovation is perceived as difficult to understand and use
trialability	The degree to which an innovation may be experimented with on a limited basis
observability	The degree to which the results of an innovation are visible to others

In the context of e-government, Tung and Rieck (2005) argued that focusing only on relative advantages will help in narrowing the scope of e-government research, while considering only the most important factors. The authors stated that the issues of compatibility and trialability in e-government services are not salient. This is because

government organizations will have Internet access as a result of high Internet adoption (Tung and Rieck, 2005). Moreover, the cost incurred using e-government services is low and therefore no additional hardware or software are needed if the Internet is accessible (Tung and Rieck, 2005).

2.4.1.2 Technology Acceptance Model (TAM)

TAM was introduced by (Davis Jr, 1986) as an adaptation of the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980) to predict and explain individuals' acceptance of IT. TRA is a well-researched intention-based model that has shown success in explaining and predicting individuals' behaviours across a wide range of contexts (Davis et al., 1989). This theory is very general, being designed to explain virtually any human behaviour (Ajzen and Fishbein, 1980) and "should therefore be appropriate for studying the determinants of computer usage behaviour as a special case" (Davis et al., 1989). This theory focuses on the analysis of the influence of external variables on two key beliefs, attitudes, and behaviour intention of individuals (Davis et al., 1989).

TAM is theoretically based on TRA to specify the causal linkages between two major dimensions of beliefs: perceived ease of use and perceived usefulness, and attitudes, intentions and computer-adoption behaviour (Davis et al., 1989). TAM is considerably more specific than TRA (Davis et al., 1989) and a special case of TRA (Taylor and Todd, 1995), designed to examine computer-usage behaviour (Davis et al., 1989).

TAM has received empirical support in IS research (Taylor and Todd, 1995). This makes TAM a favourite adoption model in the IS research when compared to TRA because it is a specific version developed for IT. TAM has been studied across various areas of technologies: tourism, shopping, marketing, psychology and online consumer behaviour (Jan and Contreras, 2011).

2.4.2 e-Government Adoption Studies

2.4.2.1 e-Government Adoption Studies Using DOI Theory

Carter and Bélanger (2005) integrate constructs from the DOI theory, TAM and web trust models to form a comprehensive model of factors that affect citizen adoption of e-government services. The findings revealed that perceived ease of use, trustworthiness and compatibility are determinants of citizens' intentions to utilize e-government services.

Tung and Rieck (2005) examined factors affecting the adoption of e-government services by business organizations in Singapore. The authors adapted DOI theory and other constructs drawn from the literature – barriers to adoption, network externalities and

social influence – to develop a theoretical framework of six interrelated constructs. This proposed framework was tested by surveying 128 business organizations in Singapore. The findings revealed a positive relationship between social influence, external pressure and perceived benefits and the organization's decision to adopt e-government services.

In another study that adapts DOI theory, Raus et al. (2009) examine the diffusion of an e-customs solution as an e-government innovation. The aim of this study was to identify barriers and facilitators that can affect the adoption of e-customs solutions. This study was based on the DOI theory of Rogers considering organizational, technological, and environmental contexts. It contributed towards the e-government adoption using DOI theory research and in particular of e-customs solutions as well as the societal and political impact of e-customs policies.

Finally, Liang and Lu (2013) conduct their study in Taiwan to investigate the factors that affect the willingness of individuals to adopt online tax-filing services. The data was collected using an online survey method from which 400 valid responses were recovered. The results demonstrate that complexity, compatibility, perceived attributes of relative advantages and social norms significantly affect the adoption of current users.

2.4.2.2 e-Government Adoption Studies Using TPB

Since the early applications of TPB to IS research, this theory has been adapted and applied in many studies. In the field of e-government, Yang and Wang (2008) employed TPB as a proposed framework to evaluate the influence of three key beliefs: attitude, subjective norm, and behavioural control on e-government acceptance. The authors applied Structural Equation Modelling (SEM) to analyse empirical data. The findings revealed that attitude and behavioural control have strong influence on behavioural intention. These findings are consistent with previous research on IS in general and e-commerce in particular.

Kanat and Özkan (2009) explore users' perceptions of government to citizens services. The adapted model was based on TPB. The purpose of this study was to identify the salient factors that lead to lower adoption of G2C services by citizens. This study adopts a quantitative case perspective and develops a theoretical research model. The model was empirically tested for reliability and validity. This study was original in that it provides an innovative approach to the field of e-government adoption using TPB.

Seyal and Turner (2013) adopt TPB as a reference framework to understand users intentions of using biometrics within e-government. Biometrics has become one of the important alternative tools in user authentication to a system. This study was conducted

in the context of the Brunei Government. The data was collected from one hundred and fifty-five executives from ten ministries to explore their behavioural intention towards using biometrics. The data was analysed using structural equation model software (i.e. Smart-PLS). Findings suggest that executives' attitudes toward using biometrics is a predictor of behavioural intention.

2.4.2.3 e-Government adoption studies using constructs from TAM, DOI and TPB and others

There are many studies available in the literature that investigate e-government adoption using constructs from TAM, DOI, and TPB. Of the surveyed studies, some studies use a complete model of TAM, DOI, and TPB and others use part of them or attempt to extend them. For specific implementations of novelties or applications of IT, such as e-government, these models are generally adapted as a base and extended using different constructs that are considered relevant to the subject (Ozkan and Kanat, 2011).

Fu et al. (2006) integrated two important models, TAM and TPB. The authors discussed the factors that influence the tax payers' intention to adopt a tax-filing method (i.e. manual, two-dimensional barcode, or Internet). The data was gathered from large-scale survey in Taiwan. Findings revealed that perceived usefulness for taxpayers positively affect their attitudes towards using electronic tax-filing. Interestingly, the influences of self-efficacy, perceived ease of use, and subjective norms on behavioural intention varied from electronic to manual tax-filers. This study contributed to better understanding about the factors affecting taxpayers' decision-making which results in better planning and development of e-government services.

Lean et al.'s (2009) study is an explanatory study on the e-government of Malaysia. The study investigates the factors that affect the intention to use e-government among citizens of Malaysia. It integrates constructs from different known IS adoption models of TAM, DOI moderated by a culture factor and the five dimensions of trust model. The data was collected by surveying a broad diversity of Malaysian citizens. The findings shows that perceived usefulness, perceived image, perceived relative advantage and trust have positive relationships towards intention to use e-government services.

Ozkan and Kanat (2011) proposed a model to explain e-government adoption in Turkey. This model combined constructs from TAM and TPB to fit the requirements of studying e-government adoption. The study was specifically conducted in the context of the adoption of the student loans service and accommodation association of Turkey to gather data for empirical validation of the proposed model. The survey questionnaire was administrated to over four hundred students. Partial least squares path modelling was employed to

analyse the collected data. The findings indicated that the proposed model was better than TAM in terms of predictive power.

Zhao and Khan (2013) conducted their study to identify the factors that influence United Arab Emirates (UAE) citizens' behavioural intention to adopt e-government services. The adopted model includes three established constructs from studies in TAM, computer self-efficacy, and trust. The findings suggest that behaviour intention is affected by individuals' cultural context. This study contributes to a better understanding of adoption factors and citizens' behavioural intentions in e-government particularly and cultural research as well.

2.4.2.4 Comparisons between IS Adoption Models

The IS literature is rich with studies that have investigated the IT adoption using TAM, TPB and DOI. The empirical IT acceptance studies revealed that TAM was one of the most influential IT adoption models (Hu et al., 1999). Numerous empirical studies have shown that TAM is a robust and parsimonious model of IT adoption behaviours in various IT contexts (Gefen et al., 2003). DeLone and McLean (1992) explains that for a model to be useful, "a model must be both complete and parsimonious". A useful model must synthesize and organize all of the previous research in the field (DeLone and McLean, 1992). Also, it should be at the same time simple and thus retain its explanatory value (DeLone and McLean, 1992).

Gefen et al. (2003) and Ozkan and Kanat (2011) describe TAM as the dominant model in the IT acceptance/adoption area. According to Cheng (2011), TAM "is one of the most widely accepted and applied models in a variety of domains that include related IS and IT acceptance/adoption studies". According to Hu et al. (1999), "[c]ompared with other frameworks/models, TAM has advantages in parsimony, IT specificity, strong theoretical basis, and ample empirical support". Ozkan and Kanat (2011) stated, "[o]ur review of the literature on e-government adoption revealed that TAM was the model that was utilized most often in the literature.

Comparing TPB to TAM, the former model has other constructs, such as control and social influence, that are not included in TAM. The literature reveals the importance of these variables in determining user behaviour (Ajzen, 1991). However, the importance of such variables relies on the context of the investigation and the need to incorporate these variables to the framework. As TPB is an update of TRA, it includes subjective norms (Mostafa and El-Masry, 2013). While TAM does not include subjective norms, this construct and attitude in TPB act as the sole determinants of behaviour intention (Fishbein and Ajzen, 1975).

According to the definition of innovation by Rogers (2003), it is “an idea, practice, or object that is perceived as new by an individual or other unit of adoption”. This indicates that DOI looks at innovations generally and is not limited only to technological innovation. Using DOI in the context of e-government services, Lean et al. (2009) argued that the explanatory power of the DOI model is better than the TAM model. The DOI theory looks at innovation in general rather than specifically from the perspective of IT (Harrison et al., 1997). This can be deemed as a shortcoming of DOI when comparing it to TAM.

On the other hand, Davis (1989) found the explanatory power of TAM in predicting software usage intention better than TRA. Also, Mathieson (1991) found that TAM is better than TPB in predicting usage of a spreadsheet package. Belanche et al. (2012) argued that TAM is “the most successful adoption model with regards to the number of studies on online behaviour relying on TAM and its high explanatory power”.

TAM might be a proper model to adopt if additional constructs of TPB are not necessary in the context under investigation. According to Taylor and Todd (1995), TAM “has emerged as a powerful and parsimonious way to represent the antecedents of system usage through beliefs”. TAM is more predictive relative to other adoption models which do not include behaviour intention (Fishbein and Ajzen, 1975).

Despite the large volume of research in the area of IT adoption, few studies have used TAM on e-government in the Middle East countries in general, and Saudi Arabia in particular. It is, indeed, necessary to develop and establish empirical support for integrating TAM in a framework to understand e-government portal success in the context of governments in this part of the world.

Therefore, the use of TAM constructs in the proposed framework is based on the discussion above. This model seems to be easier to apply than the other adoption model. It has only four constructs, so this would simplify the data collection process. Hu listed some reasons that justify the use of TAM. More information about TAM and its constructs can be found in chapter 6.

2.5 e-Government in the Context of Saudi Arabia

With the advancement in ICT and the expanding popularity of Internet websites in Saudi Arabia, e-government has been a priority in making information more accessible to citizens and residents and in rendering public sector services. e-Government is one of the major considerations in which developing countries use ICT to improve their people lives (Schlichter and Danylchenko, 2014). Like other governments worldwide, the Saudi government has attached significant importance to the transformation of the e-

government initiative and is keen to make it a success. In recent years, ICTs, particularly internet-based technologies have created a more challenging and complex IT environment for governments worldwide (Seng et al., 2010). This section will take a closer look at relevant aspects of e-government in Saudi Arabia.

2.5.1 Overview of Saudi e-Government Initiative

The government of Saudi Arabia has vigorously promoted an e-government initiative program since 2005. The Saudi government perceives the great importance of e-government systems due to the enormous benefits that e-government can contribute to the national economy. Subsequently, the e-government initiative program, namely 'Yesser', was established in 2005. Yesser was established with the cooperation of MCIT, the Communication and Information Technology Commission in partnership with the Ministry of Finance. The word Yesser "is the Arabic word for simplify" (Alsheha, 2007). It actually implies the ease of delivering government information and services to the public.

In fact, three royal decrees were crucial in the history of Yesser which preceded its establishment. These decrees represent the keen interest of the Saudi government on e-government: royal decree numbered 7/B/2427 in 2003 to instruct the Ministry of Finance to proceed with the establishment of e-government initiative, royal decree numbered 133 in 2003 to assign the management, planning and development of the ICT sector including e-government to the Ministry of Communication and Information Technology (MCIT), and royal decree numbered 7/B/33181 in 2003 referring to the responsibility of MCIT to establish a plan to provide e-government services to the public.

The Yasser program is controlled by a higher supervisory committee that combines the minister of MCIT, governor of CIT commission and minister of finance. A steering committee has emerged from the higher committee to manage the program. This steering committee is composed of specialists from the ministry of MCIT, CIT commission and ministry of finance as well as the director general of Yesser. The Yesser program has many initiatives and products that have been developed since its establishment. Government Secure Network (GSN), Yesser Data Centre (YDC), Single sign-on (SSO), and Saudi portal (www.saudi.gov.sa) are examples of Yesser initiatives and products since 2005 (see www.yesser.gov.sa for other initiatives and products in detail).

2.5.2 The Saudi e-Government Philosophy and Objectives

The main responsibility assigned to the Yesser program is enabling the implementation of e-government in Saudi Arabia. The philosophy of how it works is by reducing the centralization of e-government implementation as much as possible while ensuring a

certain level of coordination between the government agencies. Figure 2.1 taken from Yesser Program (2014) depicts the four principles that the Yesser program's work methodology is based on. The following are the main principles of the methodology adopted in Saudi Arabia:

The Yesser program was launched with the following objectives (Department of Economic and Social Affairs, 2012; Yesser Program, 2014):

- To raise the efficiency and productivity of government agencies.
- To provide easy-to-use and better services for business customers and individuals.
- To increase return on investment (ROI).
- To provide accurate and up-to-date information to recipients.

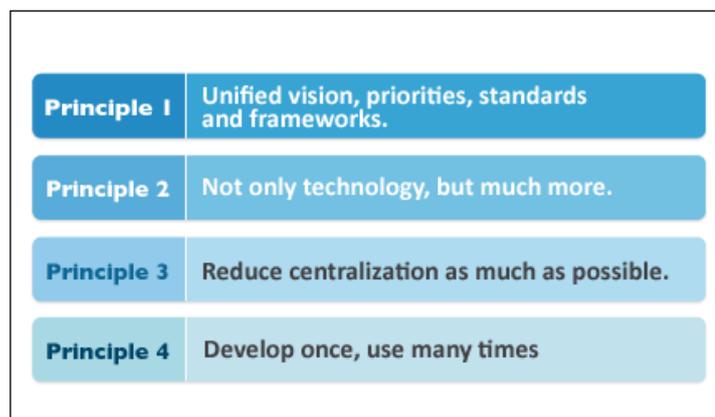


Figure 2.1: The four principles that the Yesser program's work methodology is based on (source: (www.yesser.gov.sa))

2.5.3 Why Consider Saudi Arabia e-Government Portals?

The study is conducted in Saudi Arabia, a developing country in the Middle East. The Saudi Arabian e-government portals are chosen as they are at an early stage of development. Saudi e-government initiative program was established in 2005. Further, there has been scarce research on understanding factors affecting their success. The researcher's prospects of easy access to collecting data from respondents influenced the selection of Saudi e-government portals.

Research on e-government systems in the context of advanced countries such as the United States, United Kingdom, Canada, and Germany, has improved the way they function, such as obtaining accurate and up-to-date information, booking appointments, paying taxes and downloading forms. Compared to these advanced countries, Saudi Arabian e-government success has not been researched adequately and is still ambiguous. Thus, it is crucial and worth investigating factors that influence e-government

portals success in Saudi Arabia. This is to help the Saudi government improve their current e-government systems, and design and implement better systems in the future.

The importance of this research is to help identify the key factors affecting the e-government portals success. The Saudi government has spent a huge budget on e-government; this research is expected to provide guidelines and valuable information to be used by the decision makers, regarding the e-government portals success in Saudi Arabia. Moreover, this research assists Saudis in creating more cost effective and efficient government operations. This implies that the Saudi government can potentially use this study's findings in other contextual settings to develop and promote further implementation of e-government systems (e.g. m-government). As e-government will help Saudi Arabia to build a knowledge-based economy, this investigation is needed at this time.

2.6 Summary

Research on e-government success has been reviewed in this chapter, as well as some other important and relevant concepts, such as IS success. The chapter started by explaining how the concepts of e-government can be related to government, governance, and e-governance.

Reviewing the literature has helped to develop a better understanding of what the theories and models are that have been used to evaluate IS and e-government success and what the potential factors are that contribute to success. The investigation of the studies for understanding e-government success from a comprehensive point of view reveals that there is no framework that considers all the important factors that lead to success and they evaluate e-government success from one angle.

The literature review clearly demonstrated the absence of inclusion of important factors and testing and validating them in a single framework from the individual perspective. Also, there was no study conducted in the context of Saudi Arabia which discusses the success factors of e-government portals.

3 Culture and Personal Values

It is important to review cultural literature and to provide theoretical background which is relevant to this study. In the present research, the culture factor represented by personal values is a major component in the proposed conceptual theoretical framework of this study. The inclusion of personal values would enable a better understanding of culture and its influences on the acceptance and eventually success of e-government portals in the context of Saudi Arabia. Hence, a better understanding of culture before studying the relationship between culture and technology is required. Schmiedel et al. (2014) consider culture as an important element to the success of IT-driven change. However, measuring culture is not an easy task (Schwartz, 2006).

Each of us makes decisions about events and people based on values refined and developed according to a variety of influences. Personal values have been studied by many researchers to characterize culture and predict individuals' behaviour. According to Schwartz (2006), "studying value directly is an especially efficient way to capture and characterize cultures". Also, Srite and Karahanna (2006) state that, "assessing each individual's espoused cultural values is both appropriate and meaningful for predicting individual level behaviour".

This chapter explores culture concepts and the major theoretical issues in cultural studies and personal values. The goal of starting with the concepts of culture is to make a brief background to establish easily a link between culture and personal values. The theory of personal values introduced by Schwartz (1992) is one of the focal parts of this research.

3.1 What is Culture?

3.1.1 Overview of Culture

Culture has numerous dimensions and definitions in literature. Therefore, it is not easy to define culture (Straub et al., 2002; Leidner and Kayworth, 2006). Culture has been defined in different disciplines, with different definitions found in business, biology, anthropology, sociology, business and information systems (Srite and Karahanna, 2006; Leidner and Kayworth, 2006). In fact, reviewing the literature of culture reveal contrariness in opinions and concepts of which norms, beliefs and values can distinguish the attributes of culture (Srite et al., 2003).

In a very broad and simple appreciation of the term culture, it might be understood by many of us as the way we generally live, the languages that we can talk, the food we prefer and eat, the stories we narrate, the clothes we dress in and how we celebrate different events (Pettigrew, 1979; Kalman, 2009).

Hofstede et al. (2010) give some examples of the things that may reveal the term culture: eating, greeting, exposing or disabling feelings, greeting others, keeping a certain physical distance to others, maintaining human body hygiene and making love. Another important aspect of culture is about race and our roots: what do our ancestors believe and what makes our life distinguished from the lives of other people? (Kalman, 2009).

Other definitions that describe the concept of culture have been given by Seng et al. (2010) as, "something that is collectively shared by members of an organization". The term culture originally emerged from the field of anthropology (Kroeber and Kluckhohn, 1952; Sackmann, 1992; Agourram, 2009) and has become a main research stream (e.g. organizational studies) (Agourram, 2009).

Leidner and Kayworth (2006) classify the levels of culture: national culture, organizational culture and group culture. National culture (cross-cultural) and organizational culture have emerged as largely different research themes which both focus on identifying values that differentiate groups of people from each other (Leidner and Kayworth, 2006).

Culture is a challenging issue to study since it has various divergent definitions and measurement items (Leidner and Kayworth, 2006). When conducting research that involves a culture element, the first challenge is to understand what culture is, how it is conceptualized and the possible dimensions that form the concept of culture (Straub et al., 2002). To make clear this picture of having various definitions of the term culture, it is notable to mention that culture has been conceptualized in 164 definitions (Kroeber and Kluckhohn, 1952). Those definitions have been formed in different ways and from many perspectives (Kroeber and Kluckhohn, 1952). This illustrates the diversity and complexity of the concept of culture. However, it is beyond the scope of this thesis to discuss these definitions.

The definitions of culture differ in their understanding and their use of a central concept (Sackmann, 1992). This creates some ambiguity and conceptual confusion since different authors use those concepts in different ways (Sackmann, 1992). Culture has been framed by central concepts in different distinct components including ideologies, sets of beliefs, basic assumptions, sets of shared values, important understandings, and "collective programming of the human mind" by Hofstede (Sackmann, 1992). Sackmann (1992) commented on these combinations of concepts: „at this stage of theory development, it is unclear which one or which combinations of these frequently used concepts represent culture best”.

As mentioned above, culture has been identified in different disciplines. In the context of psychology, Schwartz (2006) describes it as, "the rich complex of meanings, beliefs,

practices, symbols, norms, and values prevalent among people in a society". In the context of sociology, Schein (2010) defines culture as, "a pattern of shared basic assumptions learned by a group as it solve its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relations to those problems".

But there are also other names, which should be mentioned with regard to research on cultural definitions. In the context of anthropology and sociology, a cross disciplinary definition of the culture concept was given by Kroeber and Parsons (1958). According to the authors, culture is defined as a "transmitted and created content and patterns of values, ideas, and other symbolic-meaningful systems as factors in the shaping of human behaviour and the artefacts produced through behaviour". Further, in the context of business, Thompson et al. (1999) defined culture as, "the shared assumptions, beliefs, and values regarding the extent to which an organization supports and values the integration of employees' work and family lives".

3.1.2 The Importance of Studying Culture

The rationale behind studying culture has been reasoned by Hofstede et al. (2010) as: "One of the reasons why so many solutions do not work or cannot be implemented is that differences in thinking among the partners have been ignored". This reason might be given by Hofstede et al. (2010) based on how they define culture, "It is the collective programming of the mind that distinguishes the member of one group or category of people from others".

This definition is actually based on the similarity of the way that computers are programmed. Therefore, it treats patterns of thinking, feelings and acting as software of the mind or mental programs. Thus, these mental programs are partially responsible for determining a person's behaviour (Hofstede et al., 2010). As depicted in Figure 3.1, culture level relates to groups and categories, and it distinguishes mental programs of human nature from those of an individual's personality (Hofstede et al., 2010).

The relationship between 'mental programming' and the term culture can be clarified in the levels of uniqueness in mental programming. Three levels of uniqueness were identified by Hofstede et al. (2010): human nature, culture, and personality. Figure 3.1 taken from (Hofstede et al., 2010) shows where the level of individuals falls in the definition of culture in terms of mental programming. It classifies mental programs based on the levels they belong to and whether they are learned or inherited.

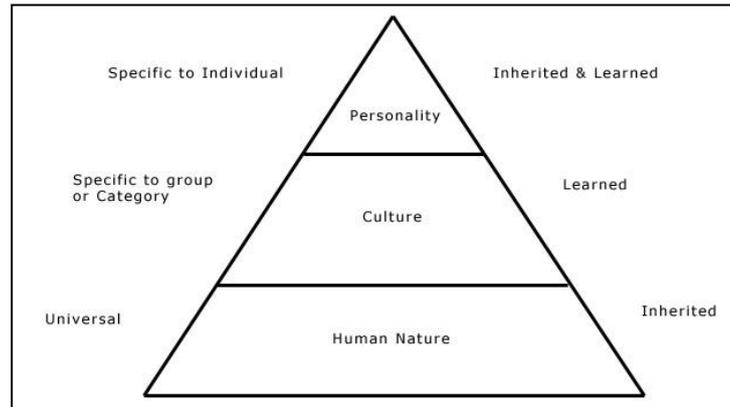


Figure 3.1: Three levels of uniqueness in mental programming (taken from Hofstede et al. (2010))

In this research, mental programming at the personality level has a strong link to what is being investigated. Hofstede et al. (2010) define the personality of an individual as: “his or her unique personal set of mental programs that needn't be shared with any other human being”. Human nature demonstrates a person's mental software at the universal level (Hofstede et al., 2010).

3.2 Cultural Models

Reviewing the literature of culture reveals that, there is no unified theory of culture studies but a large field encompassing a variety of different methods, approaches, dimensions and academic perspective. In fact, there are many culture models which focus on different levels of culture (i.e. national, organizational and subunit/individual) in terms of values (Leidner and Kayworth, 2006).

Leidner and Kayworth (2006) stated that, “taking a value perspective will enable us to look at the contradictions that might occur across national, organizational, and subunit levels as well as to uncover the similarities in the IT-culture research across these levels”. This actually coincides with the levels of culture which was described by Hofstede and depicted in Figure 3.1. It is beneficial to know these levels of cultures because each culture model belongs to one of these levels. The taxonomy of cultural values conducted by Leidner and Kayworth (2006) was based on cultural levels (i.e. national, organizational and subunits/individuals).

A number of popular culture models are reported in the literature. To date, Geert Hofstede's original taxonomy of culture at the national level (Hofstede, 1980) was one of the popular culture models (Leidner and Kayworth, 2006). In this taxonomy, culture was described along the dimensions of power distance, uncertainty avoidance, individualism versus collectivism, and masculinity versus femininity (Hofstede et al., 2010; Schein, 2010).

Another example of national culture models is theorized by Trompenaars (1996). The author describes culture at the national level based on four polar opposites as: internal versus external control, achievement versus ascription, specificity versus diffuseness, affective versus neutral relationships, and universalism versus particularism (Trompenaars, 1996).

Since the early 1980s, corporate or organizational culture has been a fashionable subject in management literature (Hofstede et al., 2010). Organizational culture as a standalone level of culture is different from national culture. According to Hofstede et al. (2010), “organizational cultures are a phenomenon by themselves, different in many respects from national cultures”. This is due to an organization being a “social system of a different nature from that of a nation” (Hofstede et al., 2010), because the members of an organization did not live and grow up in it (Hofstede et al., 2010). Wallach (1983) used the term ‘corporate culture’ instead of ‘organizational culture’, defining it as, “the shared understanding of an organization’s employee -how we do things around here”.

Hofstede theorizes six dimensions of organizational culture (Hofstede et al., 2010): process oriented versus results oriented, employee oriented versus job oriented, parochial versus professional, open system versus closed systems, loose versus tight control, and normative versus pragmatic. Wallach (1983) proposed different dimensions of organizational culture: bureaucratic, innovative and supportive.

Indeed, as with the taxonomies of values at the national cultural level, the aim of the taxonomies of values at the organizational level has been to enable the comparison and differentiation along the lines of dominant values which guide organizational behaviour (Leidner and Kayworth, 2006). It is worth mentioning here that, it is beyond the scope of this research to review an exhaustive list of organizational or national theories.

At the cultural individual level, Schwartz’s theory of basic human values is the popular theory in literature. The theory of basic human values introduced by Schwartz (1992) is defined as, “cognitive representations of desirable goals that transcend specific actions and situations” (Beierlein et al., 2012). In fact, there are many theories of culture that were theorized to be tested at the individual levels (see Table 1 in (Leidner and Kayworth, 2006).

Ten motivationally distinct types of values are identified by the theory of basic human values. These values are likely recognized across and within cultures: power, achievement, stimulation, self-direction, hedonism, universalism, benevolence, conformity, tradition and security (Schwartz, 1992; Schwartz et al., 2001; Schwartz and

Boehnke, 2004). It is crucial to mention here, that these values were introduced by (Schwartz, 1992) to be tested at the individual level.

Schwartz (1992) stated that the first study that tackled the issues of identifying the basic human values and their structure was conducted by Schwartz and Bilsky (1987). The major goal of identifying a universal structure of values would allow the derivation of basic dimensions of values that might be used for the purpose of comparison (Schwartz, 1992).

The work of Schwartz (1992) addresses important questions related to cultural values at the individual level: how the individuals' social experiences affect their value priorities and how the behaviour choices and orientations are affected by the value priorities held by individuals. Schwartz (1992) stated, "we limit our analysis to dimensions of values at the individual level". Straub et al. (2002) assert that it is inappropriate to use taxonomies of culture at national level to predict individual behaviour.

Milfont et al. (2010) argues that examining the relationships between values, attitudes and behaviours is among the most investigated subjects in social psychology discipline. Milfont et al. (2010) adopted a popular model that was proposed by Homer and Kahle (1988). This model is known as the value-attitude-behaviour hierarchy model.

Homer and Kahle's (1988) model posits a hierarchal influence of cognitions by integrating the interrelationships between values, attitude and human behaviour (Milfont et al., 2010). This model theorizes that, "the influence theoretically flows from more abstract cognitions (i.e. values) to mid-range cognitions (i.e. attitudes) to specific behaviours (Milfont et al., 2010). The value-attitude-behaviour model has been applied and tested in a variety of areas: natural food shopping (Homer and Kahle, 1988) environment (Vaske and Donnelly, 1999; Milfont et al., 2010), consumer behaviour (Allen et al., 2002), electronic shopping (e-shopping) (Jayawardhena, 2004). Reviewing the literature revealed there are no studies adopting this model in the context of e-government.

3.3 Culture Layers, Levels and the Value Concept

In literature, the term 'level' in the context of the concept of culture differs from the term 'layer'. Cultures in all layers share the focus of defining the values that differentiate a particular group from another (Leidner and Kayworth, 2006) and no group can overcome or escape culture (Hofstede et al., 2010).

Hofstede et al. (2010) state that: "[E]very group or category of people carries a set of common mental programs that constitute its culture. As almost everyone belongs to a number of different groups and categories at the same time, we unavoidably carry

several layers of mental programming within ourselves, corresponding to different levels of culture”.

Table 3.1 lists the suggested six layers of culture by Hofstede et al. (2010). In this research, personal values at the individual level might be referred to the mental programs at the gender layer (whether male or female). It is important to mention that the terms ‘layers’ and ‘levels’ have been used interchangeably. However, ‘layers’ is assumed in this research to refer to the concept of culture with reference to the size of the group of people. The term ‘levels’ refers to the different concepts of culture starting from its core concept, which is values, to the outer concept ‘national level’.

Table 3.1: Levels of culture (taken from (Hofstede et al., 2010))

Culture levels and their explanation taken from (Hofstede et al., 2010)
A national level according to one’s country (or countries, for people who migrate during their lifetime)
A regional level and/or ethnic and/or religious and/or linguistic affiliation level
A gender level, according to whether one was born as a girl or as a boy
A generation level, separating grandparents from parents from children
A social class level, associated with educational opportunities and with a person’s occupation or profession
For those who are employed, organizational, departmental, and/or corporate levels according to the way employees have been socialized by their work organization

In the context of this research, it is assumed that personal values belong to the culture at gender layer (i.e. the individual can be either male or female). Hence, other levels of culture are not included in the investigation and are out of the scope of this research. The focus is on the individual and this comes from the aim of this research: to understand the success of e-government portals from the individual’s perspective.

The differences between culture concepts can be manifested in four different levels (Hofstede et al., 2010). The importance of mentioning these levels is to show where the values concept is located in the culture. Values occupy the kernel position in the culture concept. Figure 3.2 shows the manifestations of culture by five concepts: symbols, heroes, rituals, practices and values.

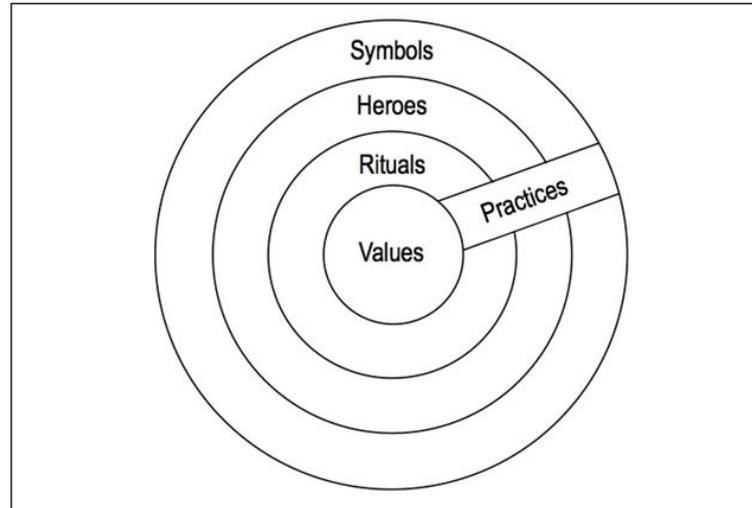


Figure 3.2: Manifestation of culture at different levels of depth (taken from (Hofstede et al., 2010))

The definitions and examples of these manifestations depicted in Figure 3.2 are taken from (Hofstede et al., 2010) and listed in Table 3.2 below.

Table 3.2: Definitions and examples for manifestations of culture at four levels (taken from (Hofstede et al., 2010))

Manifestations of Culture at different levels	Definitions and examples
Symbols	Words, gestures, pictures, or objects that carry a particular meaning that is recognized as such only by those who share the culture (e.g. language)
Heroes	Persons, alive or dead, real or imaginary, who possess characteristics that are highly prized in a culture and those serve as models for behaviour (e.g. parents)
Rituals	Collective activities that are technically superfluous to reach desired ends but that, within a culture, are considered socially essential.
Practices	Symbols, heroes, rituals are subsumed under the term practices.
Values	Broad tendencies to prefer certain states of affairs over others. Values are feelings with an added arrow indicating a plus and a minus side (e.g. evil versus good and dangerous versus safe).

3.4 The Importance of Culture in the IS Context

Generally, culture is one of the main reasons for failure when an organization has an unsuccessful experience (Leidner and Kayworth, 2006). Use of information systems by individuals within organizations could be a good example of those unsuccessful experiences. Actually, this reflects the importance of cultural aspects because they might be responsible for the success or failure of any information system.

According to Seng et al. (2010), “[t]echnology is now widely diffused to all organisational levels, fundamentally requiring not only a technological understanding, but also a greater understanding of the social, behavioural and cultural factors, which can impede or

facilitate change, as users interact with technology”. This argument asserts that diffusing IT at any level involves a complex understanding of the relationship between technological forces and social, behavioural and cultural forces.

Nowadays, it is considered that technology has been diffused at all levels within organizations, which not only requires an understanding of the technology itself, but also a good understanding of culture factors and social aspects to overcome obstacles and facilitate positive changes between users and technology (Seng et al., 2010). Leidner and Kayworth (2006) stated, “culture is a critical variable in explaining how social groups interact with IT”. It is also stressed by Straub et al. (2002) that culture clearly affects the efficiency and effectiveness of IT deployment.

Many examples strongly indicate the responsibility of culture. Leidner and Kayworth (2006) provide good examples which link the culture role with the failure of information systems. In the United States, patient deaths by medical errors are more than the number of deaths by HIV or motor vehicle accidents. In Australia, 11% of all deaths are caused by medical errors. A culture that highly regards conformity to rules was partly responsible for NASA's launch disasters of Columbia and Challenger.

It is crucial to approach every cultural model with great caution because inadequate understanding of culture dimensions will potentially lead to false conclusions. The use of personal values is appropriate in the context of the present study because the findings should be applied at the individual level. The next section provides details on personal values and how they are approached in the following steps in the present research.

3.5 Personal Values

In previous sections, culture concepts are introduced to give background about cultural studies and where the concept of personal values fits into culture. It is worth mentioning that personal values are suitable to be considered in studies where the individual perspective is under investigation.

3.5.1 Definitions of Personal Values

The study of finding the most useful method to conceptualize basic values started in and has gradually increased since the 1950s (Schwartz, 2009). Kluckhohn (1951) defined value as, “a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means and ends of actions”. Schwartz et al. (1997) defined values by synthesising the definitions of

Kluckhohn (1951) and Rokeach (1973) as, “desirable, trans-situational goals, varying in importance, that serve as guiding principles in people’s lives”.

According to Rokeach (1973), the importance of values comes from its occupancy of a central position which is able to unify the apparently various concerns of all the sciences interested in human behaviour. Cultural values are defined by Rokeach (1973) as, “an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence. A value system is an enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance”.

The research on values was defined by human basic values theory as: “desirable, trans-situational goals, varying in importance, that serve as guiding principles in people's lives” (Schwartz, 2009). These five features are all common to values and the type of motivational goal that each value expresses is the crucial content aspect which differentiates values from one another (Schwartz, 2009).

The term ‘value’ has been conceptualized by different interested disciplines (Vinson et al., 1977). They list three disciplines –Anthropology, Sociology and Psychology– which show interest in the value concept and give examples from the literature on the definition of the term value in each discipline.

In anthropology, which focuses on cultural patterns and lifestyles (Vinson et al., 1977), values have been defined as “... objective social elements which impose themselves upon the individual as a given and provoke a reaction.” In sociology, which mainly focuses on ideology and customs (Vinson et al., 1977), the value term has been defined as “a concept which groups together some mode of behaviours in our society” (Vinson et al., 1977). In psychology, values are examined from the personal motive and attitude perspectives (Vinson et al., 1977), Rokeach (1973) defines value as “a centrally held, enduring belief which guides actions and judgments across specific situations and beyond immediate goals to more ultimate end-states of existence”.

Hofstede et al. (2010) deem values to be the core of culture. They are broad tendencies to prefer certain affairs or states over others (Hofstede et al., 2010). Also, values can be described as feelings that could have a positive or negative indication which can deal with the following pairs (Hofstede et al., 2010):

- Evil versus good
- Dirty versus clean
- Dangerous versus safe

- Forbidden versus permitted
- Decent versus indecent
- Moral versus immoral
- Ugly versus beautiful
- Unnatural versus natural
- Abnormal versus normal
- Paradoxical versus logical
- Irrational versus rational.

Table 3.3 lists the main features summarized by (Schwartz, 2009). These features were implicit in the writing of many researchers and theorists which related to the concept of basic values. The features and the explanations were borrowed from (Schwartz, 2009).

Table 3.3: List of the main features of personal values (taken from (Schwartz, 2009))

Features of the conception of basic values	Explanation
Values are beliefs	They are beliefs tied inextricably to emotions, not objective, cold ideas.
Values are a motivational construct	They refer to desirable goals people strive to attain.
Values transcend specific actions and situations	They are abstract goals. The abstract nature of values distinguishes them from concepts like norms and attitudes, which usually refer to specific actions, objects, or situations.
Values guide the selection or evaluation	The selection or evaluation of actions, policies, people, and events. That is, values serve as standard or criteria.
Values are ordered by importance relative to one another	People's values form an ordered system of value priorities that characterize them as individuals. This hierarchical feature of values also distinguishes them from norms and attitudes.

3.5.2 The Link between Culture Research and Values

In cultural research, values have been always considered as the core concept of culture. Also, values have always been considered as one of the main components that form the concept of culture. In this section, various values related to different layers of culture are presented and discussed to give a general idea about values related to certain layers of culture.

According to Leidner and Kayworth (2006), values have been categorized based on certain defined levels of culture. As mentioned above, culture is classified into different levels: cross-cultural (or national culture) and organizational culture. Both of these

categories have emerged as separate, large research themes (Leidner and Kayworth, 2006). However, the two research themes experience little overlap; they concentrate on defining the values that differentiate groups from others. For instance, in the national culture research theme, there are certain values that have been identified and used to distinguish one nation from another. In literature, there are many examples of these taxonomies of values which distinguish groups from each other. Leidner and Kayworth (2006) presented different examples of these taxonomies of cultural values with regard to culture level that are popular in cultural studies.

One of the most popular examples of culture values at national level was introduced by (Hofstede, 1980). These dimensions are: power distance, uncertainty avoidance, individualism-collectivism and masculinity-femininity (Hofstede, 1983; Hofstede et al., 2010). Hofstede (1983) considered these dimensions to offer a framework to propose hypotheses in organizations within national culture (cross-cultural organizations) studies. These popular dimensions in academia were introduced to explain: “(1) different ways of structuring organizations, (2) different motivations of people within organizations, and (3) different issues people and organizations face within society” (Hofstede, 1983). Values were considered by Hofstede (1983) in terms of the desirable (i.e. reactions to ideological statements such as “competition among employees usually does more harm than good”) and desired (i.e. how various aspects of a job such as cooperation and earning are personally important).

Many examples were mentioned by Leidner and Kayworth (2006) of values taxonomy at the level of national culture, while Trompenaars (1996) presented another taxonomy of values at the level of national culture in a polar opposite form: universalism versus particularism, specificity versus diffuseness, affective versus neutral relationships, internal versus external control and achievement versus ascription. Other researchers conceptualize national culture in terms of values such as: Confucian dynamism, context, or polychronism versus monochronism (Leidner and Kayworth, 2006). At the national culture level, these taxonomies of culture in terms of values exist within nations/countries but will be different to a certain extent in their magnitude across various regions in the world (Leidner and Kayworth, 2006).

At the organizational culture level, there are different taxonomies of values suggested by researchers in the literature. These sets of values which guide the behaviour of organizations have been used in research to distinguish organizations from each other. The objective of mentioning these examples of national culture taxonomies is to give a background of different values suggested in the literature. However, this is beyond the scope of this research to identify values at different levels of culture. Leidner and

Kayworth (2006) emphasize that values have to be studied at any level of culture: “the predominant theoretical approach to culture has been to conceptualize it, at any level, in terms of values”. This actually creates a strong link between the two concepts: culture and values. Personal values globally persist in all individuals but vary in their magnitude from one person to another within the same or different culture.

3.5.3 Schwartz' Theory of Basic Human Values

According to Schwartz et al. (2001), the concept of values is usually considered to investigate issues related to the attitude and behaviour of individuals and different types of groups such as: societies, organizations, institutions (Rokeach, 1973; Hofstede, 1980). This concept of values was introduced as systematic theory in terms of content and organization only two decades ago, which is a relatively short history (Schwartz, 1992; Schwartz and Sagiv, 1995). However, agreement regarding the most useful method to conceptualize values started in the 1950s (Schwartz, 2009).

The inclusion of personal values in the proposed framework is because individuals' attitudes toward using an e-government portal and behaviour intention to re-use it are part of the theoretical framework under examination. As mentioned earlier, personal values usually draw the attention of researchers when they investigate attitude and behaviour. Schwartz (2009) supports this argument with regard to the relations of the pattern of value with other variables: “[M]ost research on the antecedents or consequences of values has examined empirical relations between a few target values and a particular attitude, behaviour, or background variable”.

Two implications of value relations occur within the circular structure of values (Schwartz, 2009). First, the adjacent values in the circular structure (e.g. power and achievement) should hold the same associations with other variables under examination. Second, the associations between values and other variables should decrease from the most positive to the most negative when going around the circle structure in both directions. Figure 3.3 depicts the ten value types in a circular structure in which the relationships between them can be identified.

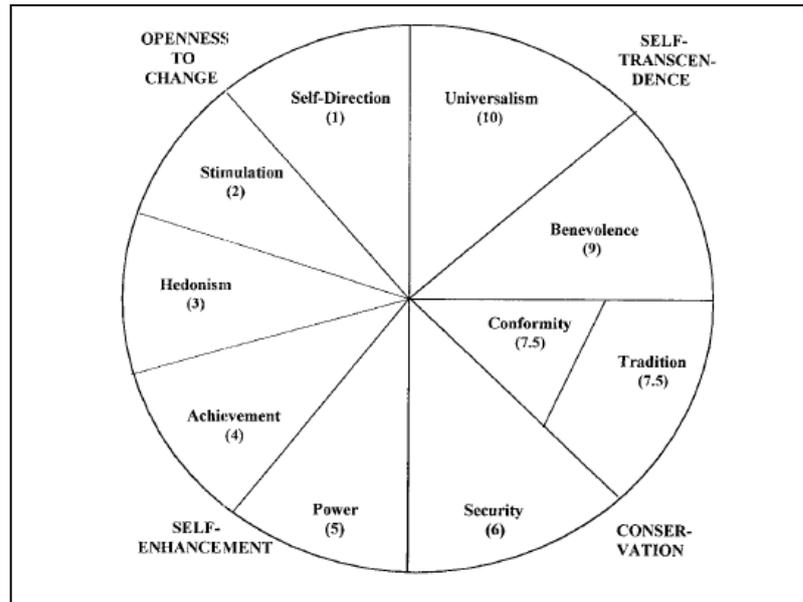


Figure 3.3: Theoretical model of circumplex structure of relations among 10 values of Schwartz (1992) (Source: (Schwartz et al., 2001))

According to (Schwartz, 2009), “When we think of our values, we think of what is important to us in our lives (e.g. security, independence, wisdom, success, kindness, pleasure). Each of us holds numerous values with varying degrees of importance to one person, but unimportant to another”. The theory of basic human values has a strength in identifying an alleged comprehensive group of ten different value types widely recognised across cultures (Schwartz et al., 2001). Also, the theory specifies the compatibilities and conflicts between these value types which increase the cohesive circular structure of relations between them (Schwartz, 1992; Schwartz et al., 2001).

Furthermore, adding to the strength of basic human values (Schwartz et al., 2001), the circular structure of the relations between the ten values and their distinctiveness have been extremely supported by analysing more than 200 samples from more than 60 nations around the world (Schwartz, 1992; Schwartz, 1994; Schwartz and Sagiv, 1995; Schwartz and Bardi, 2001). But it is worth mentioning that the deviation from the theorized patterns is only 5% of the samples, which is mostly due to the type of samples common in the rural regions of less developed nations and countries such as Malaysia, India, and sub-Saharan Africa (Schwartz et al., 2001). However, this small percentage of deviation in the theorized patterns may suggest that: “the theory may not hold universally” (Schwartz et al., 2001). In fact, the problem may not lie with the theory but perhaps with the instruments employed for measuring values not being appropriate for use with those populations (Schwartz et al., 2001).

The next section provides details about the available methods of measurement: Schwartz Value Survey (SVS) and Portrait Values Questionnaire (PVQ) and the objectives of each method.

3.5.4 The Schwartz Methods of Measuring Values

Shalom H. Schwartz proposed two methods for measuring values which have been used widely in many studies. The first method proposed was the Schwartz Value Survey (SVS). The second method is called the Portrait Value Survey (PVQ) which was proposed afterwards for certain objectives to overcome some drawbacks of SVS.

3.5.4.1 Schwartz Value Survey (SVS)

This method of measurement was used by many studies until 2001 and showed support for the values theory (Schwartz et al., 2001). SVS is the first instrument to measure value priorities based on the theory of basic human values (Schwartz, 1992). Two lists of value items are presented by the SVS (Schwartz, 2009): the first list includes 30 items which describe the potential “desirable end-states in noun form”; the second list includes 26 or 27 measurement items which describe “potential desirable ways of acting in adjective form”. A phrase inside parenthesis following each item in the list is to explain its meaning (e.g. “EQUALITY (equal opportunity for all)” is related to the Universalism item) (Schwartz, 2009).

Schwartz et al. (2001) state: “[T]his instrument demands a high level of abstract thought and presents value concepts outside of any specific context”. This statement made by Schwartz indicates a problematic issue related to the usage of this type of values measurement item. In fact, the problem is not relevant to the values theory or the SVS method but it has a connection to the type of sample that SVS uses to measure the priorities of values (Schwartz et al., 2001). In particular, those samples in which the values theory was unsuccessful in gaining support are almost all from populations that are not educated in Western ideas which encourage thinking abstractly and are context-free (Schwartz et al., 2001). This resulted in other instruments that were less abstract.

3.5.4.2 Portrait Value Questionnaire (PVQ)

Schwartz et al. (2001) criticized the SVS instrument to measure values of less developed populations, non-Western nations. They stated that the problem may not lie with the theory of basic human values itself but with the SVS instrument used with such populations. The samples in which the basic human values theory failed to obtain support were drawn exclusively from populations that have not received their education in Western schools that encourage abstract, context-free thinking (Schwartz et al., 2001).

Therefore, PVQ was designed as an easier instrument to understand that can be employed in measuring values to obtain support in samples from non-Western populations (Schwartz et al., 2001). As Saudi society is a non-Western nation and a developing population, PVQ is argued to be suitable to measure values of Saudi individuals. Originally, PVQ was introduced “to assess the generalizability of the values theory to populations that have yielded negative or equivocal evidence in the past” (Schwartz et al., 2001). The development of PVQ was guided by two objectives (Schwartz et al., 2001).

3.6 Personal Values in the Context of IS

In general, culture is considered to be a critical factor to consider when interpreting how social groups interact with information technology (Leidner and Kayworth, 2006). This could be in line with considering the effect of personal values; it is a critical construct that might explain how individuals differ in interacting with and using the information technology in general and e-government systems in particular.

Searching the literature for previous studies which link personal/human values to information systems reveals that very few studies have been conducted on this theme of research. Moreover, it is very rare to find a study which examines the role of the personal values of Schwartz in the field of information systems. In fact, most studies available in information systems and applications’ literature (e.g. e-commerce, e-banking, e-government etc.) have discussed the culture role/influence by considering Hofstede’s Cultural Dimensions. However, personal values have been investigated but in other research disciplines (e.g. (Kankanhalli et al., 2004)). Hennington et al. (2011) developed a model that linked nurses’ perception of information systems compatibility with their personal values to their work environment (i.e. work stress and burnout).

In the electronic shopping (e-shopping) context, Jayawardhena (2004) conducted his study to enhance the understanding of electronic consumers’ (e-consumers) purchase behaviour by taking into consideration the effects of personal values on consumer attitude and behaviour. Jayawardhena (2004) follows the hierarchical approach of value-attitude-behaviour which is treated in the literature as a model that is widely used to examine the role of personal values in various contexts. Jayawardhena (2004) found that: “Individual attitudes towards e-shopping were a direct predictor of e-shopping behaviour and mediated the relationship between personal values and behaviour. This hierarchical relationship among personal values, attitudes and behaviour may be exploited by e-tailers to position e-shops and provide a persuasive means for e-shoppers to satisfy their needs.”

One recent study conducted in the field of electronic learning (e-learning) investigates the influence of personal values (Haag et al., 2009). The study looked at personal values as one of the factors influencing Personal Knowledge Development (PKD) in the environments of e-learning. This study was conducted using the Delphi method to determine which of the ten individual value types of the Schwartz Value Survey (SVS) are the most relevant in the context of PKD in e-learning. The results of this study suggested that: "personal values in a given context differ due to the characteristics of that particular situation" (Haag et al., 2009). This suggestion could be considered as a call for future researchers to first examine which of the ten individual value types of the SVS are the most relevant to the context under examination.

Since e-government is one of the applications of information systems, reviewing the literature on information systems in general and e-government in particular informs that no studies have discussed the issue, and the results of (Haag et al., 2009) demonstrate the importance of this Delphi study.

3.7 The Importance of Personal Values in e-Government

The rationale for using personal values as independent variables has been inspired by the argument made by Schwartz and Bilsky (1987), "[T]he impacts of values as independent variables on both attitudes and behaviour can be predicted, identified, and interpreted more effectively and reliably by using indexes of the importance of value domains as opposed to single values".

Personal values have been considered in many different research areas. Researchers have included personal values as an important factor in their studies; including the environmental studies (e.g. (Papagiannakis and Lioukas, 2012; Lee, 2011)), mall shopping behaviour studies (e.g. (Shim and Eastlick, 1998; Cai and Shannon, 2012)), and food consumption studies (e.g. (Vermeir and Verbeke, 2008; Hauser et al., 2011)).

Adopting the personal values theory in the context of e-government portals will help to explain in the role/effect of personal values in e-government portals success. It is worth mentioning that Hofstede's culture dimensions are not appropriate for this research. The reason stems from the nature of this study which focuses on the study of individual users, not group or national level study. Hofstede's cultural dimensions can be used at the national level or in a comparisons study between different cultures (Al-Gahtani et al., 2007; Aladwani, 2012).

Furthermore, since the individual perspective of e-government portals is considered, it is appropriate for this research to consider the role of the personal values in the evaluation

framework. In addition, by considering personal values as one of the constructs of the proposed framework, the findings will help to reveal how the personal values impact on then e-government success.

In the context of this research, values are considered to affect the individuals' attitude and the latter will influence their behaviour. This is consistent with the value-attitude-behaviour (VAB) hierarchy which was developed and validated in many research streams. This study believes that VBA model will help e-government organizations to position their portals and provide convincing means for e-government portal users to meet their requirement.

3.8 Critique of Literature Review

As discussed in chapter two and in the present chapter, many studies have adopted different theories/models and identified potential factors that affect e-government adoption or success, but it is not clear in the e-government success contexts if e-government adoption factors and other factors from different theories/ models originating from IS and other disciplines are salient. Therefore, the research presented here seeks to understand and confirm the key factors in this specific domain.

While the majority of the studies that have been conducted to understand the factors for such a lack of success have been largely focused on advanced countries and some other developing countries, there has been limited research focused on understanding e-government success in the Middle East and the Arab world. Although some research has been conducted to examine e-government adoption and success, relatively little was done to examine adoption and success at the same time along with the other factors such as personal values, perceived risk, and self-efficacy in one framework.

Although many factors affecting IS success have been identified in the existing literature, there are no available studies that have attempted to explore any new factors in the context of e-government portals in general or in Saudi Arabia in particular. The limited available literature concerning e-government systems mostly examines the adoption and acceptance of e-government by user (e.g. (Wangpipatwong et al., 2008; Lin et al., 2011; Srivastava and Teo, 2009; Carter and Bélanger, 2005)). Moreover, no studies have attempted to examine the success of e-government portals from the combination of adoption and impact perspectives. With the limited reported studies on e-government websites success, most of them focus on certain specific issues, such as trust (e.g. (Teo et al., 2008)).

According to Seng et al. (2010), “[t]echnology is now widely diffused to all organisational levels, fundamentally requiring not only a technological understanding, but also a greater understanding of the social, behavioural and cultural factors, which can impede or facilitate change, as users interact with technology”. This call is to fill the research gap to include culture as one of the factors to be investigated in the context of e-government portal success.

Regarding the influence of culture represented by personal values of individuals on e-government, in addition to pursuing a deeper understanding of the impact of personal values on e-government acceptance, no studies in the literature were found that discuss this important issue. Previous research discussed the effects of culture at the national level using Hofstede’s dimensions (e.g. Al-Gahtani et al., 2007) but there are no such studies that attempt to understand this impact at the individual level using Schwartz’s (1992) personal values.

Having reviewed the relevant literature on IS success in general and e-government and culture in particular, there seems to be a need to develop an e-government portal success framework for better understanding of the literature on this complex issue. Chapter 5 attempts to identify new factors and confirms the suitability of using existing ones. Then, Chapter 6 discusses the development of a comprehensive framework on e-government portal success based on reviewing the literature and the exploratory study conducted.

4 Research Methodology

This chapter describes the methodology used in this PhD research. This research has been conducted in three main stages with regard to methods of data collection. The first stage was the exploratory study conducted in the context of Saudi Arabia's e-government. The second stage was a Delphi study to investigate which personal value types are particularly relevant to the success of e-government portals. The third stage was the framework development and validation through a questionnaire survey.

4.1 Basic Concepts

Research is simply defined as the process of seeking solutions to a problem after conducting a thorough study and doing analysis of the situational and possible factors (Sekaran and Roger, 2013). It is apparent that the use of research terms and concepts such as methodology, method and paradigm is surprisingly unclear when reviewing the literature (McGregor and Murnane, 2010). Thus, it is important for researchers to understand clearly what those concepts mean and to use them properly. Therefore, this section clarifies those concepts before turning to the methodology of this research.

Kothari (2009) defined research as "a scientific and systematic search for pertinent information on a specific topic". The creation and discovery of knowledge lies at the heart of any research (Goddard and Melville, 2004). However, good research should be systematic, well-planned, organized and have specified objectives (Goddard and Melville, 2004). The term 'research' means the systematic method of stating or declaring the problem definitely, formulating hypotheses, gathering data, analysing facts and coming up with conclusions as solutions towards the specific problems or generalizations in theoretical cases (Kothari, 2009).

4.1.1 Theory

Theory is an essential ally and has an important role in research (Neuman, 2006). The most common meaning of the term 'theory' is: "an explanation of observed regularities" (e.g. sufferers of schizophrenia are less likely to come from middle-class than working-class backgrounds) (Bryman, 2004). The relationship between theory and research can be categorized by two main approaches: deductive and inductive. These approaches represent the direction of theorizing (Neuman, 2006; Ghauri and Gronhaug, 2010).

The difference between the two approaches is in the process of what comes first: observations/findings or theory (Bryman, 2004). In the deductive approach, researchers start with theory and then apply their observations to reach findings and vice versa in the

case of the inductive approach (Bryman, 2004). Figure 4.1, borrowed from (Bryman, 2004), explains the concepts of deductive and inductive approaches in terms of the direction of theorizing.

In the deductive approach, researchers theorize by beginning with a theoretical proposition that illustrates the logical connections between concepts and then moving toward empirical evidence (Neuman, 2006). On the contrary, in the inductive approach, researchers build from observations toward abstract thinking (Neuman, 2006). Some scholars place inductive and deductive under the umbrella term 'reasoning' and associate it with these concepts. Ghauri and Gronhaug (2010) explain both terms with reference to the direction of theorizing. They define inductive reasoning as: "a systematic process of establishing a general proposition on the basis of observation or particular facts". Deductive reasoning was defined by them as: "the logical process of deriving a conclusion from a known premise or something known as true".

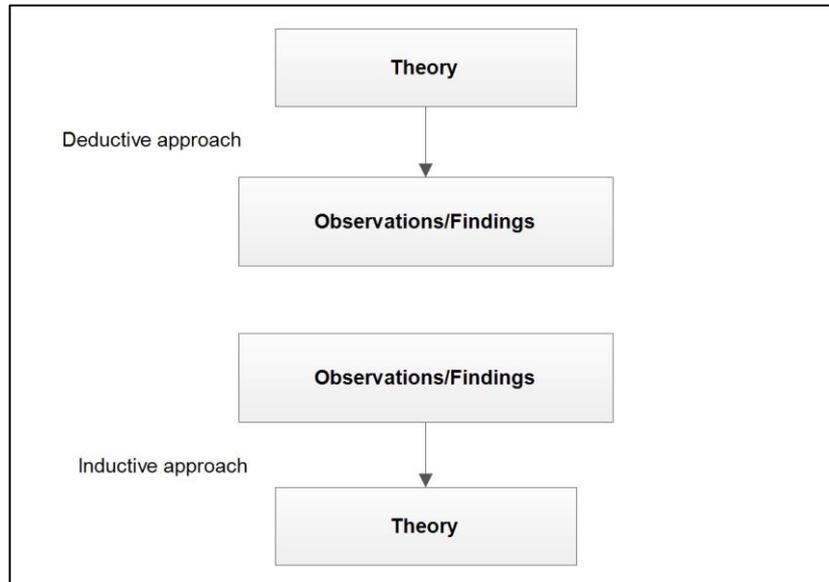


Figure 4.1: The direction of theorizing: deductive and inductive approaches

4.1.2 Method versus Methodology

Throughout the review of literature of information systems as well as e-government, it has been found that scholars often use the terms method and methodology interchangeably. In fact, these two terms are not the same and the practice of using them interchangeably is unfortunate (McGregor and Murnane, 2010).

Methods refer to technical procedures used to conduct research (McGregor and Murnane, 2010; Kothari, 2009) and methodology refers to research philosophy (McGregor and Murnane, 2010). Research methods refer to the focused, orderly and systematic collection of data in order to obtain information to answer a particular research

question or problem (Ghauri and Gronhaug, 2010). It is important to distinguish between methods and techniques in research. Methods refer to data collection through surveys, case studies, field experiments and historical review and analysis (Ghauri and Gronhaug, 2010). Techniques mean the step-by-step procedures that might be adopted by researchers to collect data, and analyse it to find the answer to the research question (Ghauri and Gronhaug, 2010).

Kothari (2009) categorizes research methods into three different groups: methods of data collection, methods of statistical techniques, and methods used to assess the accuracy of the results obtained. In research, the last two groups are considered as analytical tools.

Research methodology is the way to systematically find a solution to the research problem (Kothari, 2009). It shapes “the diversity of the entire body of knowledge” (McGregor and Murnane, 2010). The methodology is considered as a science which studies how to conduct research scientifically (Kothari, 2009). Specifically, the methodology refers to “the rational and the philosophical assumptions that underlie any natural, social or human science study, whether articulated or not” (McGregor and Murnane, 2010).

4.1.3 Methodology Axioms

McGregor and Murnane (2010) identify four axioms or principles which differentiate all research methodologies as follows: (a) epistemology: “what counts (is worthy) as knowledge and how people come to know it” (b) ontology: “what counts as nature, reality, feeling, existence or being” (c) logic: “what is accepted as rigour and inference in the development of arguments, judgments and insights” (d) axiology: “what counts as fundamental values and what is consciousness (moral choices, ethics and normative judgments)”. Axiology is the methodology axiom that especially concerns the role of researchers and participants throughout the research processes (Ponterotto, 2005).

Bryman (2004) defines epistemology as: “what is (or should be) regarded as acceptable knowledge in a discipline” and ontology as: “the question of whether social entities can and should be considered objective entities that have a reality external to social actors, or whether they can and should be considered social constructions built up from the perceptions and actions of social actors”. Two main positions are frequently referred to ontology: objectivism and constructionism (Bryman, 2004). Objectivism is: “an ontological position that implies that social phenomena confront us as external facts that are beyond our reach or influence” while constructionism is: “an ontological position that asserts that social phenomena and their meanings are continually being accomplished by social actors” (Bryman, 2004).

There are three main positions of epistemology: positivism, interpretivism and realism (Bryman, 2004). These positions of epistemology or research paradigms are discussed in more detail in the next section. In fact, there is no cut-off agreement on the types of research paradigms in literature. The two traditions or overarching world views which shape research are positivism and post-positivism (McGregor and Murnane, 2010).

4.1.4 Research Paradigm

A 'paradigm', a concept created by Kuhn (1970), means a fundamental orientation to research and theory (Neuman, 2006). Reviewing the literature also reveals the use of the terms paradigm, method, and methodology (McGregor and Murnane, 2010). Therefore, it is crucial to clarify these concepts, understand what they mean exactly and to differentiate between them. Methods and methodology have been clarified and discussed in the previous section. The term paradigm encompasses two dimensions: "(a) philosophical, basic beliefs and assumption about the world; and (b) technical, the methods and techniques adopted when conducting research" (McGregor and Murnane, 2010).

In all sciences, researchers conduct their studies for the sake of generating new knowledge by following one of the research paradigms. A paradigm is defined as "a set of assumptions concepts, values and practices that constitutes a way of viewing reality for the community that shares them, especially in an intellectual discipline" (McGregor and Murnane, 2010). Paradigms are accompanied by attendant methodologies (i.e. values, reality, assumptions about knowledge, and logic). Neuman (2006) defines a paradigm as: "a general organizing framework and research that includes basic assumptions, key issues, models of quality research, and methods for seeking answers". Both definitions of a paradigm indicate that it is a set of assumptions, issues and methods which assists the researcher in viewing reality and finding the answers to their research questions.

Two main paradigms that are known in research are positivism and post-positivism (McGregor and Murnane, 2010). McGregor and Murnane (2010) explain the relationship between the four terms: research paradigm, research methodology, research methods, methodological axioms with reference to positivism and post-positivism paradigms: "We appreciate that each of these paradigms can be distinguished by their philosophical underpinnings (called methodologies, with four attendant axioms), which in turn inform the methods of techniques employed to conduct research within these paradigms".

Positivism was known from the nineteenth-century school of thought and was introduced by the Frenchman Auguste Comte (1798-1857), who founded the science of sociology (Neuman, 2006). Positivism emphasizes empirical observations, discovering causal

relationships, and value-free research. Value-free research means when the beliefs of the researcher do not have any impact on the way in which data is gathered or analysed. Interpretivism is a term introduced to contrast positivism (Bryman, 2004). Interpretivism is traced to the German sociologist Max Weber (1864–1920) and the German philosopher Wilhem Dilthey (1833–1911) (Neuman, 2006). It emphasizes, socially-constructed meaning, meaningful social action and value relativism (Neuman, 2006). Realism is the third position of epistemology which assumes that reality has different levels and what can be seen on the surface should not easily reveal causal mechanisms or significant structures at deeper levels (Neuman, 2006).

4.1.5 Quantitative and Qualitative Research Strategies

Research can be classified into two main types of approaches with regard to the type of collected data. To understand both strategies, Table 4.1, taken from (Bryman, 2004), outlines fundamental differences between qualitative and quantitative research:

Table 4.1: Fundamental differences between qualitative and quantitative research strategies (source: (Bryman, 2004))

Consideration	Qualitative	Quantitative
Principal orientation to the role of theory in relation to research	Inductive, generation of theory	Deductive, testing of theory
Epistemological orientation	Interpretivism	Natural science model, in particular positivism
Ontological orientation	Constructionism	Objectivism

Table 4.2, taken from Cook and Reichardt (1979), provides a comparison between the two approaches which illustrate the difference in emphasis in quantitative versus qualitative.

Table 4.2: Emphasis in quantitative versus qualitative (source: (Cook and Reichardt, 1979))

Quantitative approach	Qualitative approach
Emphasis on testing and verification	Emphasis on understanding
Focus on facts and/or reasons for social events	Focus on understanding from participants/informants perspective
Logical and critical approach	Interpretation and rational approach
Controlled measurement	Observation and measurements in natural settings
Hypothetical-deductive; focus on hypothesis testing	Explorative orientation

It is notable that using quantitative (measurements of what, when and where) is associated with a positivism paradigm, and qualitative (interpretation of the how and why) is usually associated with post-positivism paradigm which is known or named by many scholars as interpretivism (McGregor and Murnane, 2010).

Ghuri and Gronhaug (2010) give some reasons which rationalize the use of either qualitative or quantitative approaches by researchers. These reasons are: the objective of the research, the previous experience and background of the researchers, the research discipline (e.g. anthropology and phenomenology advocate a qualitative approach for data collection and analysis) and the main reason should be the purpose and focus of the study.

Qualitative research can be used as an exploratory tool. Where there is uncertainty about a subject, and the researcher does not know what detailed questions to ask, a few in-depth interviews or groups may be sufficient to provide an understanding and explanations which answer the problem (Hague, 2006). Although many researchers focus on one research approach more than the other, quantitative and qualitative approaches can both be used in the same study (Ghuri and Gronhaug, 2010). These approaches are suitable at different levels or stages of research (Ghuri and Gronhaug, 2010).

4.2 Overview of Research Methods Adopted in this Study

A systematic and thoughtful approach is needed especially with the increasing complexity in the nature of business operations and decision making (Ghuri and Gronhaug, 2010). Therefore, the importance of research has increased in business, schools and business studies (Ghuri and Gronhaug, 2010).

Most research methodology books consider 'original contribution to knowledge' or 'originality' as a fundamental condition for a scientific study (Ghuri and Gronhaug, 2010). In this research, the proposed theoretical framework was based on previous knowledge and it creates a new dimension to already existing knowledge. This is in line with Ghuri and Gronhaug's (2010) opinion of how social knowledge is established: "social knowledge builds one upon the other".

In this research, data collection occurred in three main phases throughout this research. After the initial review of literature, an exploratory study was conducted as the first phase towards accomplishing this PhD study. In the exploratory phase of this research, which was underpinned by an interpretivist approach, qualitative data was collected using semi-structured interviews. The data from the interviews was used to derive items for the e-government evaluation instruments. The aim of this exploratory study was to explore the

main aspects and factors for evaluating e-government systems success. The study has been conducted in the context of the Saudi Arabian government. To achieve the aim of this study, interviews were conducted with 49 Saudi citizens to explore their perceptions on e-government systems and their success. The interviewees who participated in our study were varied in their demographic information. The results of the interviews helped to identify the potential success factors of e-governments systems and establish a preliminary framework for evaluating e-government success. The objectives of this exploratory study have been achieved and the findings reveal many issues regarding the factors that affect the e-government systems success.

Then, a Delphi study was conducted to investigate the relationship between the success of e-government portals and the ten distinct value types identified by Schwartz (1992). The Delphi method is used when the researcher might have reached a point where there is no historical data or knowledge about the researched topic. This method can be conducted by designing a questionnaire and distributing it to a panel of experts in the relevant field/(s). It may be done in more than one round. After each round, the responses from experts in questionnaires are analysed by the researcher and sent back to them for the reconsideration of their opinions in the light of the analysis of all responses. This is looped until the experts reach an acceptable degree of consensus.

In the second stage of the research, both qualitative and quantitative data were collected from an expert panel to determine what personal values are the most relevant to e-government portals' success. The aim of this Delphi study was to investigate which value types are particularly relevant to e-government portals' success or have a significant impact in the context of e-government portals; those values decided as a result of this Delphi study are used later in this research to examine to what extent and how those identified value types affect success.

Finally, in the third stage of this research, a survey-based study was conducted to test the proposed theoretical framework. The quantitative data collected in the survey was subjected to numerical analysis to refine and verify the instrument items. The developed framework in this research not only achieves the research aim and objectives, but also opens the horizons for future research that would further explore the phenomenon of e-government success.

The research process and the interrelationships of the four research phases are illustrated in Figure 1.1 (see Chapter 1). Furthermore, before information is provided with reference to these three stages of sampling, data collection, data analysis and issues related to validity and reliability of the whole research approach, Table 4.3 shows an

overview of the main stages of this research with their main characteristics and objectives. These stages are categorized based on the process of data collection:

Table 4.3: The stages of conducting this PhD research with relation to data collection process

Research phase	Objectives	Characteristics
Exploratory study	<ul style="list-style-type: none"> ▪ To better learn how well the e-government initiative program in Saudi Arabia is known by citizens. ▪ To elicit the opinions of the interviewees towards e-government services and how they rate them and why. ▪ To know what the factors of “e-government success” are from the perspective of the participants. ▪ To learn how to measure the proposed dimensions of e-government success. ▪ To find out what advantages/benefits users are expecting when using e-government portal services. ▪ To learn how to make government portals beneficial and worthy of usage. ▪ To know how to measure user satisfaction when using e-government portal services, and how to enhance this satisfaction. 	<p>The study has been conducted in the context of the Saudi Arabian government.</p> <p>Semi-structured interviews were conducted with 49 Saudi citizens to explore their perceptions of e-government systems and their success.</p> <p>The participants in this study were varied in their demographic information.</p> <p>Participants provided their insights regarding issues and how they conceptualize the success of e-government.</p> <p>The responses of the interviewees help to identify the success factors of e-government systems and establish a preliminary framework for evaluating e-government success.</p>
Delphi study	<ul style="list-style-type: none"> ▪ To investigate the relationship between e-government portals’ success and the ten distinct value types identified by Schwartz (1992). ▪ To determine which of the basic ten values could be regarded by the experts as being more relevant than the others in the context of e-government portals’ success. 	<p>Experts were selected from the areas of e-government, culture and personal values.</p> <p>Experts were asked to name those personal values that they consider to be particularly relevant to e-government portals’ success.</p> <p>Definitions and explanations of personal values were provided to experts in the first round.</p> <p>The study was carried out in two rounds and the objectives were achieved.</p>
Survey-based study	<ul style="list-style-type: none"> ▪ To establish relationships between the factors identified in the proposed framework. ▪ To investigate the effect of the identified factors in the exploratory study (see Chapter 5) on e-government portals’ success dimensions (i.e. actual use, behaviour intention to re-use, user satisfaction and net benefits). ▪ To examine the influence of the identified personal values in Delphi study (see Chapter 7) on e-government acceptance 	<p>The survey-based study was used to empirically validate the proposed theoretical framework of e-government portal success.</p> <p>The framework was split into two main models (i.e. e-government portals’ success model and personal values effects on e-government acceptance model).</p> <p>214 valid samples remained as the final sample data used in the study.</p>

4.2.1 Exploratory Study

4.2.1.1 What is Exploratory Research?

Sekaran and Roger (2013) classify the purposes of undertaking exploratory studies into three different types based on the stage to which knowledge about the problem has advanced. These types are: exploratory, descriptive and causal. The timeline for these stages is explained with reference to the design decision as: "The design decisions become more rigorous as we proceed from the exploratory stage, where we try to describe certain characteristics of the phenomena on which interest centres, to the causal, hypothesis testing stage, where we examine whether or not conjectured relationships have been substantiated" (Sekaran and Roger, 2013).

Exploratory research can be conducted for different reasons and in various circumstances. The main purpose of exploratory research, as the term implies, is to clarify unclear or ambiguous problems (Zikmund, 2003; Sekaran and Roger, 2013). When a problem is described as ambiguous, it means that the nature of that problem under investigation is unclear (Zikmund, 2003). On some occasions, even if some facts are known, more information is needed for developing a theoretical framework that is viable in reality (Sekaran and Roger, 2013). Doing an exploratory study is a necessity. For instance, in marketing, exploratory research is needed before starting a product test in the market (Hague, 2006). Other occasions include when market intelligence is required but the decision makers cannot justify an extensive and large research project. Indeed, in these cases, an exploratory study with interviews is sufficient (Hague, 2006).

Exploratory studies assist to find out what people like or do not like about an advertisement, product or service, and why they think that way (Hague, 2006). Exploratory research is usually qualitative and involves using unstructured techniques along with small samples (Hague, 2006; Sekaran and Roger, 2013). Usually, exploratory studies rely on secondary research (e.g. literature review) and/or qualitative approaches to data collection such as more formal approaches (e.g. interviews and focus groups) and informal talks and discussions (with managers, employees and customers) (Sekaran and Roger, 2013).

Churchill (1979) mentioned some techniques that are typically productive in exploratory research: literature survey, insight stimulation, and experience survey. Those techniques are used in this research at different stages. A literature survey was conducted first to gain a thorough insight into what the literature tells us. Then, insight stimulation and experience survey were used to learn what interviewees think about e-government success in Saudi Arabia.

4.2.1.2 Rationale of the Exploratory Study

According to (Hague, 2006), one reason why an exploratory study should be conducted in general and to adopt a qualitative approach in particular is: "Qualitative research can be used as an exploratory tool. Where there is uncertainty about a subject, and the researcher does not know what detailed questions to ask, a few in-depth interviews or groups may be sufficient to provide an understanding and explanations which answer the problem". Also, Loiacono et al. (2007) conducted three exploratory studies in parallel with a literature review to ensure that the model proposed was comprehensive and items were chosen from both the literature and consumers. Loiacono et al. (2007) justify the use of this approach to ensure that, "the study did not miss any key aspect that had not yet made it into the established literature".

The uncertainty that this research intends to deal with is two-fold: the factors that influence the success of e-government portals in the context of Saudi Arabia and how to develop a comprehensive framework for evaluating e-government portals that is potentially applicable to be adapted and used in any country.

In the literature, many exploratory studies have been conducted to develop instruments to be used in measuring or developing frameworks for evaluation purposes. Examples of these studies are (Loiacono et al., 2007; Griffin and Halpin, 2005; Macdonald et al., 2011). Loiacono et al. (2007) conducted their study after reviewing literature to find out the opinions of experts on the proper instruments for measuring the quality of websites. Fu et al. (2006), in their exploratory study, tried to identify the potential differences between the three types of taxpayers with reference to the acceptance of electronic tax filing in the context of Taiwan.

In the context of Saudi Arabia's e-government, three exploratory studies have been found which to some extent discuss issues related to e-government. These studies are exploratory research. Al-Khalifa (2012) conducted an exploratory evaluation on Saudi government websites using the W3C's Web Accessibility Guidelines 2.0. The result of this study indicated that those websites have made many types of accessibility error. Another exploratory study was conducted by Alhussain and Drew (2010), which discussed the factors that affect employees' acceptance of biometric technology in other e-government applications. The third was Al-Solbi and Al-Harbi's (2008) study to explore the main e-government and policy factors that have contributed to electronic readiness (e-readiness) success and the factors that determine successful implementation of e-government in Saudi Arabia.

4.2.1.3 Exploratory Study's Aim and Objectives

This exploratory study aimed to explore the main factors for understanding e-government systems success. The study particularly investigates citizens' perception about factors and measures affecting the success of e-government systems in Saudi Arabia. The study also aimed to identify other potential factors in the context of Saudi Arabia. The findings of this exploratory study along with reviewing the literature assisted in proposing a comprehensive framework as the main output of this research. The following objectives were formed to achieve the aim of this study:

1. To extract demographic information of interviewees.
2. To learn better how well the e-government initiative program in Saudi Arabia is known by citizens.
3. To elicit the opinions of the interviewees towards e-government services and how successful or not they rate them, and why.
4. To know what the factors of 'e-government success' are from the perspective of the users.
5. To learn how to measure the proposed dimensions of e-government success.
6. To find out what advantages/ benefits users are expecting when using e-government portal services.
7. To determine how to make government portals beneficial and worthy of usage.
8. To determine how to measure user satisfaction when using e-government portal services, and how to enhance this satisfaction.

4.2.1.4 Methodology of the Exploratory Study

To explore the perception and expectation differences among the individuals in Saudi Arabia, this exploratory study has adopted the qualitative approach method of using a semi-structured interview. In fact, the decision on whether to adopt a qualitative or a quantitative approach lies on the researcher's assumptions (Ahmad and Singh, 2012).

4.2.1.5 Data Collection

In our study, the qualitative data was collected using the semi-structured interview method. The participants are all Saudi nationals. They have been encouraged to be honest in referring to their personal experiences, opinions, and insights about e-government systems in Saudi Arabia. The responses have been quantified to capture the frequency of different factors. Responses to the interview questions assist in reshaping Delone and McLean's (2003) model; alternative models can also be deployed as constructs and measures for establishing a comprehensive framework to evaluate e-government systems success.

The main purpose of undertaking this exploratory research is to elicit answers to a variety of questions related to the issues of developing a framework for evaluating e-government portals' success. These questions seek demographic information, attitudes, personal experiences, and opinions of the targeted interviewees towards e-government portals in Saudi Arabia.

The data have been collected from different interviewees who vary demographically and have different backgrounds and qualifications. These interviewees are all employees, ranging from normal internet users to advanced developers, and of different managerial levels. They all work in the private and public sectors in Saudi Arabia. The main issues discussed in this exploratory study are the perception of citizens towards e-government in Saudi Arabia, and the factors most important to the interviewees when they critically evaluate the e-government systems. The participants provided their insights regarding these issues and how they conceptualize the success of e-government.

4.2.1.6 Data Analysis

Qualitative data analysis software, NVivo 8.0, has been used to analyse the interview data. The content analysis technique has been used to examine the responses of the participants. Neuman (2006) defines content analysis as: "a technique for examining the content, or information and symbols contained in written documents or other communication medium". Wang and Huarng (2002) use this technique for analysing the comments of online customers to identify factors of service quality that influence e-satisfaction. Content analysis assists in addressing patterns and structures in a written text to make inferences (Darke et al., 1998).

4.2.2 Delphi Study

4.2.2.1 Concept of Delphi Method

The history of the Delphi method goes back to the 1950s (Okoli and Pawlowski, 2004). This method was introduced by the RAND Corporation (Dalkey and Helmer, 1963; Okoli and Pawlowski, 2004) who conducted a project, Project DELPHI, as a study using expert opinions. The purpose of introducing this technique was to obtain the most reliable consensus from a group of experts about a specific subject under research (Dalkey and Helmer, 1963). Issues such as identification/prioritization and forecasting represent the first application of the Delphi method and the development of concept/framework represents the second type of application of this method (Okoli and Pawlowski, 2004).

The Delphi method has been identified by Duan et al. (2010) as seeking "to obtain consensus on the opinions of experts through a series of questionnaires that collect and

aggregate informed judgments on specific questions or issues". Essentially, the Delphi method or technique employs a series of connected questionnaires (Brancheau et al., 1996). This method, as defined by Keil et al. (2002), involves only a limited sample, and it does not lend itself to a complex quantitative analysis; it is a structured and iterative process which aims to accomplish group consensus among a panel of selected experts in the field.

The main characteristic that distinguishes the Delphi method from other research methods is the type of respondents who participate in the study (Okoli and Pawlowski, 2004). This has been highlighted by Okoli and Pawlowski (2004), "Researchers have applied the Delphi method to a wide variety of situations as a tool for expert problem solving". One situation that has been widely used is the 'rank-type' Delphi (Okoli and Pawlowski, 2004). In this type of situation, the Delphi method develops group consensus regarding the relative importance of issues (Okoli and Pawlowski, 2004). It is worth mentioning that Schmidt (1997) provides a detailed explanation on how to conduct this type of Delphi method, including guidelines on how to collect data, how to analyse them, and how to report the results.

During the Delphi process, a panel of experts list is created, and each expert is requested to respond to a particular question or task (Shan et al., 2010). The Delphi method enables researchers to gather and aggregate expert responses and then reveal these responses to them all (Shan et al., 2010). Then, the experts will be able to know what others in their group suggest and they might change their responses (Shan et al., 2010). This occurs in a loop in which successive rounds of questionnaires provide a summary of the experts' responses to the preceding questionnaire and ask the experts to re-evaluate their opinions in each round based on the summarized results given to them (Brancheau et al., 1996; Dalkey and Helmer, 1963). Questionnaire rounds are usually continued until an acceptable level of consensus is accomplished (Brancheau et al., 1996; Shan et al., 2010).

4.2.2.2 Using the Delphi Method in IS and e-Government Research

The Delphi method, like any other research method, has been used widely in the field of information systems and its applications. Okoli and Pawlowski (2004) provide examples of studies that have used the Delphi method in information systems research.

4.2.2.3 Rationale of Delphi study

In the context of this research, conducting a Delphi survey is a necessity. The reasons behind this decision are as follows:

1. After reviewing literature and conducting the exploratory study, the theoretical framework was developed and one of the dimensions was personal values of (Schwartz, 1992). However, when reviewing the literature, no studies investigated what personal values are relevant to e-government portal success.
2. Since the proposed framework has 13 dimensions including personal values, the proposed framework has many measurement items which will be very long to answer and this may make potential participants reluctant to complete it. Therefore, it is necessary to find out from the ten personal values those most relevant to e-government portals' success. The irrelevant personal values will be neglected. This will help in shortening the survey questionnaire administered in the next phase of this research.
3. In general, this Delphi study is in line with the study of Haag et al. (2009). The authors of Haag et al. (2009)' study decided to conduct it because no previous research had informed what personal values are relevant to online learning.

4.2.2.4 Identification of Experts

In fact, to conduct a successful Delphi study, it is essential to select qualified experts with a deep understanding about the subject (Okoli and Pawlowski, 2004). All experts in this Delphi study were people who had been actively involved in research in the following fields: e-government, website evaluation, culture and personal values and they have many publications in their specialized areas of research. Many of those experts, who were invited to participate, are editorial board members of one of the respected journals in the aforementioned fields.

4.2.2.5 Delphi Survey Administration

According to Duan et al. (2010), "When considering the level of consensus to be required, two or three rounds are normally preferred". This Delphi study was conducted in two rounds. The controlled feedback from round two resulted in 4 value types receiving between 51% and 71% agreement and therefore, a further round was considered unnecessary. In (Duan et al., 2010) study, only two rounds were conducted after the selected factors by the experts received between 53% and 88% agreement in the second round.

Data was collected for the two rounds between December 2012 and March 2013. The experts who agreed to participate were 11 experts out of 40 invited for the first round. Those 11 experts participated in the second round as well.

4.2.2.5.1 First Round

The data collected for the first round of this Delphi survey was mixed: quantitative and qualitative. The experts were sent, via email: the invitation to participate in the study; the link for the online questionnaire and the questionnaire in Microsoft Word file format were attached to the email. This gives the expert the option to either fill in the questionnaire in Microsoft Word file format or fill it in online.

The questionnaire in this round has closed-ended questions and open-ended questions. It is divided into 5 main sections. Section one provides information on how to participate in this Delphi study. Section two provides detailed information about the study. Section three requires some basic information about the expert as a participant in the study. Section four requires the expert to tick no more than five value types which should be particularly relevant or may have significant impact on e-government portal success. Section five provides detailed explanation about the value types under investigation and which have been obtained from (Schwartz, 1992) and (Changingminds.org, 2012).

4.2.2.5.2 Second Round

The data collected for the second round of this Delphi study was quantitative only. The 11 experts were sent, via email, the invitation to participate in the second round; the aggregated result of the first round, the link for the online questionnaire and the questionnaire in Microsoft Word file format were included in the email.

In the second round, the number of instances that fell into each category and the descending order of frequencies of value types were sent back to the experts, who were also sent their previous answers in a customized invitation for each expert. The experts were requested to rank no more than 5 value types (1-5), where 1 = least relevant, and 5 most relevant.

The questionnaire in this round has closed-ended questions. It was customized to each expert who participated in the first round of this Delphi study. This customization includes the invitation of the expert by his/her name and including his/her selection of value types in the first round. The questionnaire is divided into two main sections. Section one compiles responses and presents them with the summary results which include responses of each expert. Section two provides detailed information about the study and provides detailed explanation about the value types under investigation which have been obtained from (Schwartz, 1992) and (Changingminds.org, 2012). This information can be used as reference when they need explanation of the terms used in the questionnaire.

4.2.3 Survey-based Study

The main field work of this PhD study was a large scale survey-based study. As summarized in table 4.3, the main objectives of the survey are:

1. To establish the relationships between the factors identified in the proposed framework.
2. To investigate their effect on e-government portals' success dimensions (i.e. actual use, behaviour intention to re-use, user satisfaction and net benefits) from other dimensions in the framework.
3. To examine the influence of the identified personal values in Delphi study (see chapter 7) on e-government acceptance.

According to (Loiacono et al., 2007) commenting on evaluating websites in general, "there is no extant general measure for evaluating websites and no consensus on what such an instrument should measure". This can be applied to e-government and other IS applications which use web technology as a means to interact with the users. Given the amount of practitioner and researcher interest in this area, a well-validated, generally available instrument would be very valuable. Therefore, it is a necessity to develop such an instrument for evaluating e-government portals, following a comprehensive and rigorous development method. Therefore, this survey study aims to test and validate what this research argues is a comprehensive framework.

4.2.3.1 Research Method of the Online-survey Based Study

In this research, a quantitative approach will be used which includes using numerical methods for collecting data and statistical tools for data analysis. According to Neuman (2006), "quantitative research addresses the issue of integrity by relying on objective technology such as precise statements, standard techniques, numerical measures, statistics and replications". The use of a quantitative approach is justified in relation to the measurements (Bryman, 2004). This is one of the main reasons why researchers decide to use the quantitative approach (Ghauri and Gronhaug, 2010).

The surveys that use a quantitative approach are considered to be superior and far better than qualitative approaches with regard to generalization (Johnson and Duberley, 2000). This research uses self-reported questions to measure many variables and to test various hypotheses. Therefore, the survey is the appropriate method for collecting data for this research. Neuman (2006) comments on situations where survey is an appropriate method: "Surveys are appropriate for research questions about self-reported beliefs or behaviours. Researchers usually ask about many things at one time in surveys, measure

many variables (often with multiple indicators), and test several hypotheses in a single survey”.

Consequently, this study is in line with the majority of studies which use survey-based research to test hypothesized relationships (Urbach et al., 2009). In particular, there are many studies which consider DeLone and McLean's (2003) IS success model as the theoretical framework and adopt a quantitative approach with survey method to test the hypothesized relationship between constructs (e.g. (Wang and Liao, 2008; Urbach et al., 2010; Schaupp et al., 2009)).

4.2.3.1.1 Measures of the Constructs

After reviewing the literature for existing constructs and conducting the exploratory study,, initial measurement items were established for each of the constructs. In order to ensure content validity (Wang and Liao, 2008), most of the items selected for this research were mainly adapted from previous IS success studies. There are new items that need to be validated in the context of e-government. These items are the output of the aforementioned exploratory study conducted as part of this research.

In fact, using tested proven measures –where available– is based on recommendations given by many scholars to operationalize the conceptual model's constructs (Urbach et al., 2010). This enhances validity and keeps this research in line with previous studies (e.g. (Bharati and Chaudhury, 2004; DeLone and McLean, 2003; Kankanhalli et al., 2005; Sugianto and Tjib, 2006)) (Urbach et al., 2010).

4.2.3.1.2 Research Setting

This study is conducted in the context of Saudi Arabia's e-government portals. The list of the e-government portals evaluated is obtained from the website of the Saudi National e-Government Portal (National e-Government Portal, 2013). This portal belongs to the Saudi e-Government Initiative Program named 'Yesser'.

Participants are invited through the institutions (i.e. public and private sector organizations) which they belong to. All major institutions in Saudi Arabia were contacted to invite their members to participate in this study. Participation by the members of those institutions was acquired by sending invitations by emails requesting them to fill in the survey questionnaire. Invitations by emails were directed to the officials who can make a decision to forward the invitation to relevant members of the organization.

In fact, the population of this study is all male and female adults (citizens and residents) who live in Saudi Arabia and are eligible to use Saudi e-government portals. However, it

was decided to contact the major public and private sector organizations for easy access to potential participants. Those organizations are spread all over the country.

4.2.3.1.3 Data Collection

The data used to test the proposed research framework was obtained from a sample of e-government users. The generalizability of the results is increased by inviting respondents who have experience using one of the various e-government portals in Saudi Arabia. Wang and Liao (2008) requested participants to evaluate only six popular e-government portals in Taiwan. This may limit the participation to only users who have experience of using these portals only. The respondents to the survey questionnaire were asked to nominate one of the e-government portals that they are experienced with and have used recently.

Data collection was based on self-reported assessments and practices, rather than objective or observation data. Self-reported assessments and practices are deemed by Hu et al. (1999) to be appropriate because of the considerable literature that supports its use in intention-based studies. Further, the data was collected on a cross-sectional basis design. A total of 851 participants attempted the survey. Only 214 were validated responses and could be used in the analysis.

4.2.3.1.4 Survey Questionnaire

To a large extent, the survey questions of this questionnaire were obtained from previous studies. However, some modifications were made to make them proper in the context of e-government. In this research, Urbach et al.'s (2010) method of designing survey questions has been adopted. Therefore, survey questions were designed to capture the various aspects and functionalities of an e-government portal at the meta-level (e.g. by asking participants if the services they expect to receive from the government organization are all delivered online in their e-government portal).

Urbach et al. (2010) justify their method of designing the survey questions at the meta-level because employee portals are different and customized to an organization's specific requirements. This is the same situation in e-government portals since those portals are usually designed to an organization's specific requirements. Hence, the survey items were developed with the objective in mind that all participants will be clear and able to answer all the questions regardless of the available features delivered by a specific e-government portal. Therefore, this objective is consistent with Urbach et al.'s (2010) of designing the survey questions in the context of evaluating various employee portals.

4.2.3.1.5 Sampling for Surveys in e-Government

Lin et al. (2011) consider employees as subjects for the population of interest. Employees, “because of their career, were identified as having a greater than average access to the internet of e-government facilities” (Lin et al., 2011). Carter and Bélanger (2005) collected the data at a community concert. Their study purpose was to examine a proposed model to understand what factors affect citizen adoption of e-government (Carter and Bélanger, 2005). The subjects –whose ages ranged from 14 to 83 years– of Papadomichelaki and Mentzas’ (2012) study were students, academic faculty members, employees, unemployed and retired

Abu-Shanab et al. (2010) commented on what sample is suitable for studying obstacles facing the adoption of e-government services. They stated that, testing the obstacles that face e-government services, the selection of a convenient sample of students is not suitable because students do not have the appropriate level of awareness and use of e-government services. The authors decided on mature users and heads of families, thus employees of public and private sectors and university students.

This survey-based study considers all individuals who tend to use e-government portals to search for information or apply for services online. Subjects were students, employed, non-employed and retired individuals. Hence, the questionnaire respondents are members of universities (i.e. students, academic faculty members and other employees), government agencies, and private sector firms’ employees.

4.3 Ethical Considerations

In any research area, there are certain research ethical principles that researchers should observe in order to conduct their research in an ethical and responsible way. For example, psychology as a responsible and organized discipline develops its codes of ethics to help members behave appropriately and respectfully when conducting research, teaching and practicing (Gouthier, 2004). Some of these codes of ethics are based on values, standards and articulated principles while others are based on prescriptions, rules and regulations (Gouthier, 2004). The following group of principles was considered to best summarize the commonality addressed in the principles adopted by the codes of ethics (Gouthier, 2004):

- Respecting the rights and dignity of persons
- Caring for others
- Concern for others’ welfare

- Integrity
- Competence
- Scientific, professional and social responsibility

The reporting of the findings and the protection of the research participants were given great importance in the study design. A thorough Research Ethics Scrutiny (RES) application was completed and approved by the Institute Research in Applicable Computing (IRAC) at the University of Bedfordshire to conduct the study. In addition to completing the RES application, University of Bedfordshire Ethics policy and University of Bedfordshire Guidelines for Informed Consent were adhered to in this study.

The respondents were protected by assuring them that their identities would not be disclosed to anyone in any circumstances. They will be kept anonymous and not requested to provide any personal data such as names, locations, or job positions. Concerning the data findings, only summaries in aggregated form were reported and discussed. This was clearly communicated to the participants before participation in this study.

As mentioned above, the informed consent guidelines written by the University Research Ethics Committee (UREC) at the University of Bedfordshire were followed. These guidelines were written since the Informed Consent forms were lacking in critical information. Moreover, this guideline document advises the researcher to be guided by other requirements of relevant professional codes of practices. This is based on the fact that different research areas will need to consider different issues and factors.

The essential information that needs to be included in the Informed Consent was used in this research. A letter was written as a preface to the survey questionnaire that contained the following information:

- Detailed information on the purpose of the research.
- Information on the involvement of respondents (e.g. voluntary participation).
- Opportunity for the potential respondents to inquire and ask questions.
- Clear information about collected data, how it will be stored and protected.
- Information about collected data confidentiality.
- Information about research findings (i.e. how research findings will be reported).
- Information about the right of respondents to withdraw at any time without needing to give a reason.

- Contact information of the researcher or the person to whom participants can ask questions or make complaints.

Robson (2002) stated that bias is usually formed by researchers in their investigations. In this research, the conclusions were driven by following good research practices for the purpose of achieving the research objectives. Also, maintaining a skeptical attitude contributed to mitigating the usual bias made by the researchers. None of the expectations or hypotheses made by the researcher contributed to the study's conclusion.

5 Individuals' Experiences and Insights on e-Government Portals' Success in Saudi Arabia: An Exploratory Study

This chapter describes the exploratory study with the objective to explore the main aspects and factors for understanding e-government portals' success. This enabled the researcher to acquire insights and better understanding the key issues related to the portals' success from individual citizen's viewpoint. The output of this study is useful for establishing the theoretical framework which will be validated in Chapter 8 using a large-scale survey data set.

In doing so, the chapter starts by discussing the objectives of the exploratory study. It then moves to the research method, research design and the data analysis and results. The discussion of results is then presented. Finally, the chapter summary is given.

5.1 Objectives of the Exploratory Study

The objectives of this exploratory study are to explore the main aspects for evaluating e-government systems success, confirm factors from prior studies and explore/identify new factors/measures. To achieve these objectives, semi-structured interviews were conducted with 49 Saudi citizens to explore their perceptions of e-government systems and their success.

This exploratory study intends to provide a better understanding about e-government in Saudi Arabia in general and to address what factors can be used to evaluate e-government systems success. Exploratory research can be conducted for different reasons: to better understand the problem, to examine if future research is feasible by exploring various aspects related to research in detail, and to further highlight the problem (Hart, 2006).

The main purpose of this exploratory study is to investigate the citizens' perception about factors and measures affecting the success of e-government systems in Saudi Arabia. The following objectives were formed to achieve the aim of this study:

1. To extract demographic information of interviewees.
2. To better learn how well the e-government initiative program in Saudi Arabia is known by citizens.
3. To elicit the impression of the interviewees towards e-government services and how successful or not they rate them, and why.

4. To know what the factors of 'e-government success' are from the perspective of the users.
5. To learn how to measure the proposed dimensions of e-government success.
6. To find out what advantages/ benefits users are expecting when using e-government portal services.
7. To determine how to make government portals beneficial and worthy of usage.
8. To determine how to measure user satisfaction when using e-government portal services, and how to enhance this satisfaction.

The interviewees are persons who live in Saudi Arabia and work in different positions in public or private sector organizations. These interviewees have fair knowledge about e-government in Saudi Arabia and they have experience of using electronic services of e-government systems.

The interviewees who participated in this study were varied in their demographic information. The responses of the interviewees assisted in identifying the success factors of e-governments systems and establishing a preliminary framework for evaluating e-government success. The study objectives have been achieved and the findings reveal many issues regarding the factors that affect e-government systems success.

5.2 Research Method of the Exploratory Study

In this study, the qualitative data was collected using the semi-structured interview method. The participants in this study are all Saudi nationals. They have been encouraged to be honest in referring to their personal experiences, opinions, and insights about e-government systems in Saudi Arabia. The responses have been quantified to capture the frequency of different factors (Ghauri and Gronhaug, 2010). Responses to the interview questions assist in reshaping Delone and McLean's (2003) model; alternative models can also be deployed as constructs and measures for establishing a comprehensive framework to evaluate e-government systems success.

The main purpose was to elicit answers to a variety of questions related to the issues of developing a framework for evaluating e-government success. These questions seek demographic information, attitudes, personal experiences, and opinions of the targeted interviewees towards e-government portals in Saudi Arabia.

The data have been collected from different interviewees who vary demographically and have different backgrounds and qualifications. These interviewees are all employees,

ranging from normal internet users to advanced developers, and of different managerial levels. They all work in the private and public sectors in Saudi Arabia.

The main issues that have been discussed in this exploratory study were the perception of citizens towards e-government in Saudi Arabia, and what factors are most important to the interviewees when they critically evaluate the e-government systems. The participants provided their insights regarding these issues and how they conceptualise the success of e-government.

5.3 Research Design of the Exploratory Study

In order to achieve these objectives, the following questions were proposed to elicit opinions, personal experiences, and insights/thoughts. Each question is related to one or more objectives. Table 5.1 lists the questions and relevant objectives.

Table 5.1: Interview questions related to the study objectives

Interview Question No.	Question	Objective/s
1,2,3, 4	Age, degree, job category, and sector?	1
5	Do you have an idea when the Yesser programme (Saudi Arabian e-government initiative) was founded? Which commission did the Yesser programme report to?	2
6	What is the most successful e-services sector in Saudi Arabia (i.e. e-government, e-banking, e-commerce, e-learning)? Why is it a success?	3
7	How would you rate e-government portals in Saudi Arabia? (In a few words, what makes it highly successful or less successful?)	3
8	Can you give an example of one of the e-government portals in Saudi Arabia that you think is highly successful? Why?	4
9	Can you give an example of an e-government portal that you think is less successful? Why?	4
10	From personal experience and also your opinion, what are the factors that may lead to successful e-government portals in Saudi Arabia?	4, 5
11	As a citizen, what do you imagine that e-government can facilitate to you in the near future? What are the benefits you expect to gain?	6
12	Currently, do you prefer to use the available e-government services provided by government portals or to visit them in their offices? Why?	3
13	What things make you confident about and give you the incentive to re-use e-government portals?	7
14	How can the e-government services in Saudi Arabia enhance users' satisfaction?	8

5.4 Data Analysis and Discussion

The following sections highlight the findings and interpretations based on respondents' answers. Qualitative data analysis software, NVivo 8.0, has been used to analyse the interview data. The data and findings are analysed and discussed in the following sub-sections. Figure 5.1 below shows a screenshot of the NVivo listing the interviews.

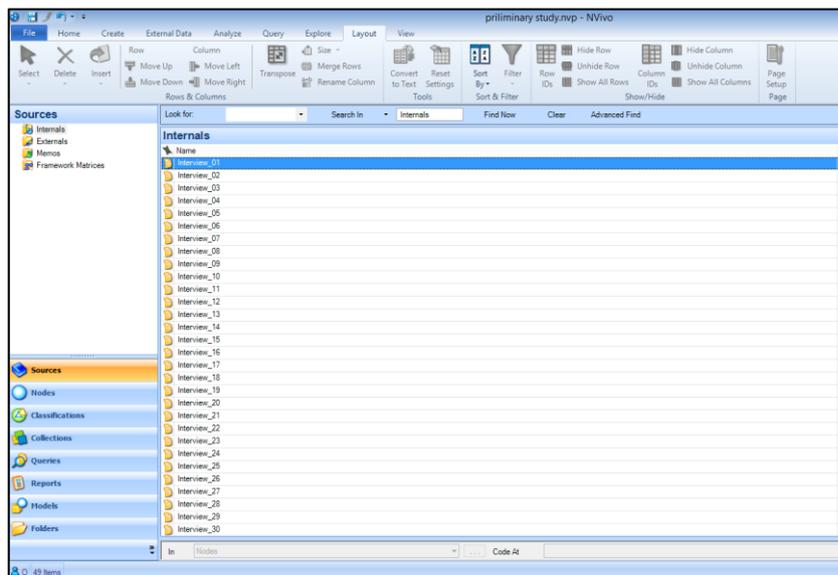


Figure 5.1: Listing of the interviews of this study in NVivo

5.4.1 Overview of the Interviews

As described in Table 5.1, the interview questions were based on certain objectives set to achieve the aim of this study. The questions that were asked of the interviewees were translated into the Arabic language, the native language of all participants. Using the native language in interviews confirms clarity of understanding questions and ensures that accurate responses are received. The participants in this study agreed to be interviewed voluntarily, considering that their names will not be requested and their employers' details will not be published.

5.4.2 Demographic Information

Table 5.2 shows the interviewees' demographic information based on their answers to the first four interview questions. All the interviewees are Saudi nationals. They are all employees, working in various organisations. This enriches our study with a wealth of information since these interviewees are all of the legal age to request e-government services and directly interact with the government via its portals.

Table 5.2: Demographic information of interviewees

Characteristic	Group	Percentage (n=49)
Age	20-29	28.57%
	30-39	40.90%
	40-49	18.37%
	50 years and more	8.16%
Qualification	Diploma	20.41%
	Bachelor	69.39%
	Master	10.20%
Job Category	Administrator	16.33%
	Budget Analyst	2.04%
	Financial Analyst	2.04%
	Engineer	14.29%
	IT Specialist	34.69%
	Teacher	4.08%
	Technician	2.04%
	Manager	24.49%
Sector	Private	42.86%
	Public	57.14%

Figure 5.2 shows one of the interviews imported to NVivo for analysis.

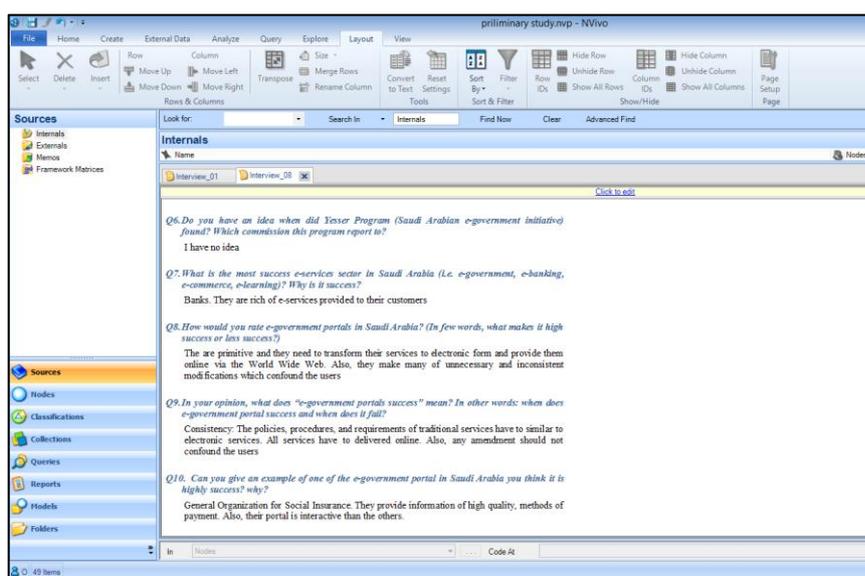


Figure 5.2: One of the interviews imported to NVivo for analysis

5.4.3 e-Government Awareness in Saudi Arabia

Similar to other developing countries, Saudi Arabia established their national e-government programme in 2005 and named it "Yesser". "Yesser" is an Arabic word that means 'to simply facilitate'. The main goal for this programme is to enhance the delivery of services and increase the participation of the public through the utilisation of ICT.

The interview findings showed that 86% –the majority– had no idea of when the Yesser programme was introduced by the government to the public or to which government agency this programme belongs. A few of them gave incorrect answers or said they had some information but were not sure. This may imply that there was a lack of introduction of this programme via the local media to the public. This may also affect the knowledge of the public about the benefits and advantages of utilising e-government services. In addition, the Yesser programme may need to widely promote and advertise itself in cross-media advertisements.

One of the interviewees commented on the e-government programme in Saudi Arabia: “I have only an idea through one of my friends who is interested in the matters of e-government, but not via media or journalism”. Introducing e-government services and their advantages to the public is an essential step for any e-government initiative to be successful. This should be part of the e-government strategy under the development of a marketing and communications plan (Lowery, 2001).

5.4.4 Perceptions towards Saudi e-Government Systems

Only 84% of respondents answered our question about rating e-government portals in Saudi Arabia. 43% of the participants expressed negative views towards e-government systems in Saudi Arabia. They commented that e-government portals are not good and are below the average of their expectations. 14% of respondents rated e-government systems as average, 12% rated them as good, 4% were neutral, 8% said that e-government portals vary in the level of development, and only 2% expressed a very positive view and said that they are very good.

In answer to the question about what makes Saudi e-government portals highly successful, participants gave many replies. Most of the frequent answers were related to completeness and communication. 29% of participants commented that e-government portals should include all services provided by government agencies. 22% pointed out that good information quality will lead to greater success of e-government portals in Saudi Arabia, and 20% said that ease of use is an important factor for greater success. In addition, providing interactive services and having good system quality were proposed by some interviewees.

The Saudi Ministry of Interior was appointed by 33% of our participants as the most successful e-government portal. Participants stated different reasons for their selection. The delivery of a variety of e-services through the Ministry of Interior portal was one of the repeated answers given by the participants. According to one participant commenting

about this reason, "They provide many e-services that you can receive where you sit in your home/ office".

Opinions varied about the least successful e-government system. Many organisations were given as examples of less successful portals. However, it was agreed by 11% of participants that most e-government portals are less successful, and another 11% agreed that the Ministry of Civil Affairs is less successful than the others. Different reasons were given for the latter selection: ineffective e-services, clients needing to visit the office to receive the services, poor quality of feedback/ reply when interacting with this agency and poor system quality.

Despite the fact that many respondents expressed negative views, 73% of participants preferred to use the currently available e-government services. The frequent reason for this preference was to save time and effort. Other reasons given were that the cost of receiving e-services is cheaper than receiving traditional services, users can apply from anywhere and avoid transportation congestion, and the possibility of corruption when visiting offices to receive services face-to-face can be avoided.

5.4.5 The Best e-Services Provider in Saudi Arabia

It was found that 100% of interviewees nominated banks as the best e-services provider in Saudi Arabia. An indication for the banks' success was captured by this participant: "In Saudi Arabia, I would consider the banks to be the best in providing e-services. They provide most of their services online. The user does not need to visit the branch at any stage to complete the service. Banks' e-services are featured with good security and they assure their customers that no one will be able to impersonate their identities. However, Banks' e-services may need further development and improvements to reach the level that some e-services can be 100% delivered online (e.g. pay regular invoices, transfer regularly fixed amounts of money automatically)".

Another participant commented: "Banks are pioneers in providing e-services in Saudi Arabia. Their success has accumulated for more than ten years. Other sectors such as public sector have failed to provide e-services with the same good quality as the banks and as we may see and experience in other advanced countries".

5.4.6 Factors to Evaluate e-Government Success

Participants demonstrated various opinions regarding the factors to evaluate the success of e-government systems. In response to question (10), participants explained the factors which may lead to successful e-government systems in Saudi Arabia.

It is noteworthy that interviewees provided their answers without distinguishing between dimensions, factors and measures as they have been identified in the literature. For example, "ease of use" is a measure of "system quality" (Petter et al., 2008). Information quality, system quality, and service quality, as the three quality dimensions of DeLone and MacLean's (2003) model, have been ranked highly by the participants. Moh'd Al-adaileh (2009) used a user's technical capability, which is consistent with computer literacy, as one of the dimensions and found that it has a significant impact on the evaluation of IS success.

Privacy and security issues are crucial and repeated issues that have been studied in e-government research (Belanger and Hiller, 2006). In the US, the e-Government Act of 2002 considers the maintenance of security and privacy as important pillars of e-government (Lee et al., 2005). Availability and ease of use are two validated measures that belong to information quality and system quality accordingly (Sedera and Gable, 2004). All of these factors and measures will be considered in our future study when establishing a comprehensive framework for e-government evaluation. Table 5.3 lists the proposed factors that may result in e-government systems success.

Table 5.3: Factors to evaluate e-government systems success

No.	Factor	Frequency (n=49)
1	Good information quality	63.27%
2	Computer literacy	57.14%
3	Good system quality	55.10%
4	Maintaining security	48.98%
5	Maintaining privacy	46.94%
6	Good service quality	44.90%
7	Ease of use	30.61%
8	All services have to be delivered online	16.33%
9	Continuous update of content	12.24%
10	Receive the e-government service completely online	10.20%
11	Good feedback and quick response to users	10.20%
12	Transparency	8.16%
13	Continuous system upgrade	8.16%
14	Unified signing-up/ in for all government agencies	6.12%
15	Good website design	6.12%
16	Accessibility	6.12%
17	Availability	4.08%
18	Help should be provided interactively when receiving e-government services	4.08%
19	Technical support	4.08%
20	Dual language – native language and English	4.08%
21	Staff who develop/ support e-government services should have good experience	4.08%
22	Obtain the requirements of beneficiaries regularly	4.08%
23	Other factors	8.16%

5.4.7 Net benefits of Using e-Government

e-Government systems, like any other type of IS, have certain impacts on users. Net benefits as one of the IS success dimensions was first introduced by DeLone and MacLean in 2003. They argue that, instead of complicating their proposed model in that year, combining all the net benefits into one dimension was a good idea.

Plenty of reasons were given by interviewees to express the benefit of using e-government systems. 69.39% of participants supported that using e-government systems will make their life easier, saving them time and money. One participant commented about the benefits of using e-government systems: "using e-government systems will enhance the quality of our life by saving us effort, time and money".

18% of respondents found it is an advantage when clients do not need to visit the public sector offices to receive services. One comment was: "the crucial thing is to enable clients to receive e-services completely without visiting public sector offices". 18% of interviewees believed that using e-government systems will mitigate the problem of traffic jams and will make the transportation systems less congested.

5.4.8 Factors Affecting User Satisfaction

Various reasons and aspects were given by our interviewees regarding user satisfaction. The factor which was mentioned most often is that all services provided by government agency have to be delivered online in the electronic portal. This means that users would prefer to receive services while they sit at home or in the office and they do not want to visit governmental offices.

39% of participants assured that delivering all services that belong to a particular government agency to their electronic portal on the web will lead to user satisfaction. One of the participants commented: "All the services have to be transformed to electronic form and have to be delivered to clients online". 27% nominated "ease of use" to be one of the factors that will result in user satisfaction.

24% mentioned that e-services have to be completed online throughout e-government portals. Precisely, they meant that users of e-government services should not be in a situation which requires them to visit the office to complete receipt of the service. According to one of the respondents, "The e-government service has to be completely achieved via the portal. The user should not at any stage need to visit the office. For instance, the delivery of national identification cards requires the user to visit the office of Department of Civil Affairs to receive it. However, this card can be posted by mail".

22% of participants believed that having interactive e-services will increase the satisfaction of users. Various interpretations of having interactive e-services were given by the interviewees. One participant interpreted interaction as: "increasing the number of staff to support the clients or developing an intelligent system to respond to clients requests and intelligently interact with them online".

Another interviewee had different views about interaction: "There must be some means to interact with clients by sending them confirmations about the status of their requests. Clients should also be capable to trace the status of their requests online or by mobile phones".

Interaction was also understood by one participant as receiving responses to inquiries and being able to send feedback to governmental agencies: "The e-government portal has to act as a governmental agency office. There should be interaction means to facilitate inquiry and feedback".

5.4.9 Factors Affecting Intention to Use

Wu and Wang (2006) identify Intention to use as "a measure of the likelihood a person will employ the application". Intention to use is a significant dimension as well as a quality dimension since the latter affects attitudes of IS users (Wu and Wang, 2006). Participants gave different responses as to the reason for their intention to use e-government systems.

Table 5.4 shows the factors that interviewees felt influenced their intention to re-use e-government services. It reveals that these factors are similar to the factors mentioned in Section 5.4.6, "Factors to Evaluate e-Government Success". This means that the responses are consistent to some extent and there is a good level of agreement towards the applicability of using these factors to evaluate e-government success.

Table 5.4: Factors influencing the intention to re-use e-government services

No.	Factor	Frequency (n=49)
1	All e-services are available online. No need to visit the office to complete transactions	51.02%
2	Good service quality	30.61%
3	Ease of use	30.61%
4	Save time and effort	22.45%
5	Good information quality	14.29%
6	Good response to clients	12.24%
7	Good system quality	12.24%
8	Credibility in providing e-services	10.20%
9	Mechanisms to trace the status of requests	6.12%
10	Interaction	6.12%
11	Careful consideration of user requirements	6.12%
12	Security	6.12%
13	Others	8.16%

5.5 Summary

This chapter explored the main aspects and factors for evaluating e-government systems success. Findings from this exploratory study can help to develop a better understanding of the success of e-government systems. Many factors influence the success of e-government systems identified by this exploratory study converge with the core quality dimensions of DeLone and McLean's IS success model (2003).

Information quality, system quality and service quality were among the top ten factors that affect e-government success, as nominated by respondents. In previous studies, the IS success model of DeLone and McLean (2003) has proven to be a useful theoretical framework to help understand and explain IS success. This model has been examined in many empirical studies on IS success using various instruments which have proven to produce reliable results.

Other factors which were highly ranked by the participants were: computer literacy, security, privacy, ease of use, continuous update of contents, the online delivery of all services and the ability to complete e-government services online without the need to visit the government agency office at any stage of receiving services. These factors have been widely discussed in the literature surrounding IS and its application (e.g. e-commerce, e-learning, etc.).

All participants regarded the online banking services as the best e-services that they interact with in Saudi Arabia. This does not necessary mean that online banking in Saudi Arabia has reached perfection. However, it may be worth conducting future research to investigate what makes online banking in Saudi Arabia the best e-service. Other e-service providers, such as e-commerce and e-learning, may be also considered, to

investigate all the possible success dimensions that are applicable to e-government. The findings of such research into online banking and other IS applications may assist e-government researchers and practitioners to examine such factors in the context of e-government.

Despite negative views being expressed by 43% of participants towards e-government services in Saudi Arabia, 73% of participants still said they would prefer to receive e-government services rather than visit the government agency office to receive the service in a traditional way. Governments should exploit this thirst for e-government systems by enhancing online services, and could base the evaluation of these services on comprehensive frameworks such as the IS success model.

Although this exploratory study has certain limitations, it provides a sound basis for the next stage of the research which will be discussed in the next chapter.

6 Developing a Conceptual Framework for e-Government Portals' Success

This chapter discusses the development of a conceptual framework for understanding factors affecting e-government portals' success. The proposed framework is validated and the hypotheses empirically tested in Chapter 8. The aims of this chapter are to: (a) discuss the rationale for developing the framework; (b) provide background about relevant issues to e-government success; (c) develop a theoretical framework for this research using the most appropriate models/theories that fit with the purpose; and (d) develop the hypothesis tested in Chapter 8.

6.1 Rational for Developing a Framework to Understand the Factors Affecting e-Government Portals Success

Many governments around the world have invested heavily in e-government systems. They are making significant efforts to provide information and services online. However, previous research shows that countries are varied in the rate of adoption and level of success. Some countries stand in better positions than others in terms of success, that is defined in this research as an individual's level of use, satisfaction, and their perceived net benefits. In fact, drawing a clear picture of how and why individuals use e-government portals is the way to know the factors that lead to their success.

The Canadian government has allocated \$880 million to invest in e-government technologies in more than six years (2000-2005) (Arrivals et al., 2007). Another example from the eastern world is the South Korean government. It invested \$5 billion in ICT within five years, between 1996 and 2001 (Lee et al., 2005). Saudi Arabia as one of the Middle Eastern and developing economic countries has invested about \$800 million in e-government (AMEinfo, 2006). This big spending on e-government technologies is, however, offset by the great fear of failure.

It was found by Heeks et al. (2003) that 35% of e-government initiatives were total failures when they were introduced over a decade ago (i.e. "the initiative was never implemented or was implemented but immediately abandoned"), 50% were partial failure (i.e. "major goals for the initiative were not attained and/or there were significant undesirable outcomes"), and only 15% of e-government initiatives have been reported successful (i.e. "most stakeholder groups attained their major goals and did not experience significant undesirable outcomes").

A review of the literature on IS success and e-government evaluation reveals that there is very limited research on e-government success in terms of both adoption and impacts

from individuals' perspectives. Furthermore, a review of the literature shows that much of the research on e-government in developing countries focuses on the issues of acceptance and adoption of this emerging technology by individuals. Also, with the limited reported studies on e-government systems success, most of these studies focus on certain specific issues (e.g. trust) rather than looking at further global and contextual factors which will lead to success. It is difficult to make a judgment regarding what findings and results exist in the literature of Information Systems (IS) success or its applications that are applicable to fully understand e-government portal's success.

Therefore, this research responds to this need by developing a comprehensive framework for e-government portal success from individuals' points of view. based on major IS success theories, perceived risk theory and personal values theory.

The proposed framework is tested in the context of e-government portals in Saudi Arabia (see Chapter 8). As e-government portal's success is a relatively new phenomenon in Saudi Arabia and can be affected by many factors that may be highly contextual, findings from previous studies based in Western countries may not be directly applicable to e-government success in the context of Saudi Arabia.

6.2 e-Government Research and Relevant Issues

Analysing the most cited articles published since 2008 to date in the Government Information Quarterly Journal reveals the e-government research themes so far. The most cited paper was about assessing e-government success. This study was conducted by Wang and Liao (2008). The authors of this study argue that it was the first study in the context of e-government systems that empirically tested and validated the updated IS success model of DeLone and McLean (2003). The motivation for this study was to test to what extent the traditional IS success theories/models can fit in the e-government context. The main finding was that, the constructs of DeLone and McLean (2003) are valid measures for e-government systems success.

When considering e-government evaluation research, in 2005, a study conducted by Griffin and Halpin (2005) provides a glance at the specific themes of e-government evaluation: evaluation of the stages of e-government growth, evaluation of the delivery of electronic services via the internet, evaluation of the involvement of e-government stakeholders, and the evaluation of the costs and benefits of e-government. In addition, looking at the recent leading issues in e-government research (Kalman, 2009), reveals that: to some extent the evaluation of e-government in general is still one of the leading issues under investigation by researchers.

Generally, studies on e-government have focused on a variety of issues, such as its adoption and acceptance (Shareef et al., 2011; Ozkan and Kanat, 2011; Arrivals et al., 2007; Srivastava and Teo, 2009; Tung and Rieck, 2005), its evaluation (Barnes and Vidgen, 2006; Papadomichelaki and Mentzas, 2012; Karunasena and Deng, 2012; Irani et al., 2005), and its success (Wang and Liao, 2008; Floropoulos et al., 2010; Gil-García and Pardo, 2005). The aforementioned studies within their classified categories look at the e-government from different angles. For instance, the trust of e-government has been investigated from different perspectives (e.g. trust about governments and trust about e-government technology in use). Another important theme of e-government research is the impact of e-government systems on individuals (Irani et al., 2012; Chan et al., 2010).

In summary, the research on e-government has a relatively short history (Dwivedi, 2009). Governments all over the world have started to launch their e-government initiatives since the late 1990s (Torres et al., 2005; Meijer et al., 2009), which aim at delivering their information and services in electronic forms to their citizens, residents, and businesses (Torres et al., 2005). e-Government, like any other applications of IS, has been researched since it emerged. However, there are still gaps in relation to the factors affecting its success and impact on individual users in developing countries that need to be fully investigated.

6.3 Theoretical Background and Research Model

The proposed framework of this research integrates TAM, the updated IS success model, self-efficacy theory, perceived risk theory and value theory. This was based on the current literature and the findings from the exploratory study as part of this research. The proposed framework is used to inform the establishment of a research hypothesis. The following sections discuss the relevant theories/models and highlight their strengths.

6.3.1 The Updated DeLone and McLean IS Success Model

In this research, the proposed framework has adapted the DeLone and Mclean (2003) IS success model with six dimensions as shown in Figure 6.1. DeLone and MacLean's original model was proposed in 1992 based on their in-depth insights into and comprehensive review of IS success literature (Wu and Wang, 2006; DeLone and McLean, 2003). DeLone and MacLean's (1992) original model was a crucial milestone in research measuring IS success since it was introduced based on the critical analysis of 180 research articles relevant to the field (Hu et al., 2005). Also, it has been validated, tested and cited by many researchers.

According to DeLone and McLean (1992), “in searching for IS success measures, rather than finding none, there are nearly as many measures as there are studies”. Sedera and Gable (2004), cited in (Petter et al., 2008), tested different success models including the DeLone and McLean and Seddon models, finding that the DeLone and McLean model is the best model to measure the success of enterprise systems. The main purpose of the DeLone and McLean (1992) review was to synthesise IS research into coherent knowledge. Also, the previous attempts to address IS success were not properly addressed (Petter et al., 2008). This was due to the complexity, interdependency, and multidimensionality of the IS success problem (Petter et al., 2008).

According to DeLone and McLean (2003), their model has been cited by many researchers in their studies. The validation and the use of the model in different applications of IS are strong indicators of the strength of this model (Petter et al., 2008; DeLone and McLean, 2004). Also, the proposed model by DeLone and McLean can be applied and used for both the individual and at organisational level (Petter et al., 2008). Actually, it fits well with this study because individuals' level is deemed appropriate for the analysis.

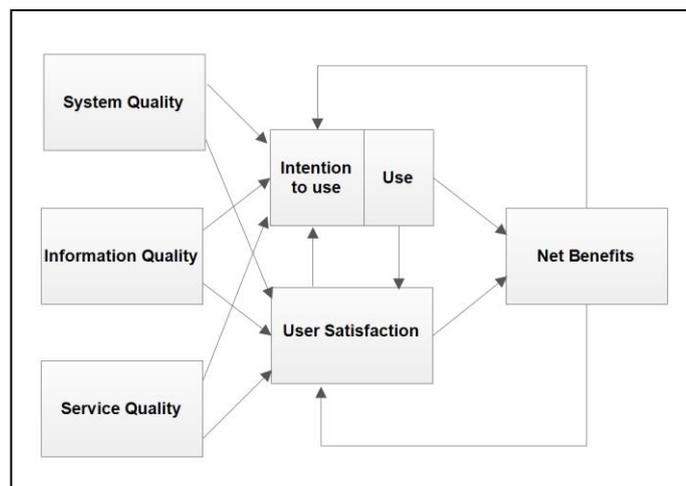


Figure 6.1: Updated DeLone and Mclean IS success model (DeLone and McLean, 2003)

6.3.2 TAM

Acceptance of technology by users has become an important subject in the field of IS over the last three decades. Many studies attempted to propose models that can interpret and predict system use. TAM is among those models that were widely used and it remains well known amongst IS researchers. Thus, it becomes essential in this study to consider TAM when intending to understand the acceptance of e-government technology by users. The first theory that was proposed in the context of understanding human behaviours that influence IT adoption was the Theory of Reasoned Action (TRA)

(Compeau and Higgins, 1995; Arrivals et al., 2007). This theory was introduced by Fishbein and Ajzen (1975) and it gained attention of researchers in this field (Compeau and Higgins, 1995). Figure 6.2 shows TAM as proposed by Davis (1989).

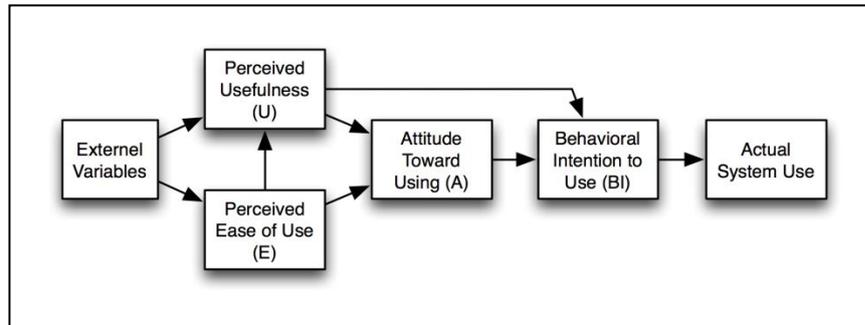


Figure 6.2: TAM as proposed by Davis (1989)

TAM was proposed by Fred Davis in 1985 with the main purpose of investigating the mediating role of perceived usefulness and perceived ease of use and their relation to other external variables and the extent to which they affect system use (Legris et al., 2003). Recently, Davis has suggested a new version of TAM –naming it TAM2– with a new construct: ‘subjective norms’ (Legris et al., 2003).

6.3.3 Self-efficacy Theory

Bandura (1986) defined self-efficacy as: “People’s judgments of their capabilities to organize and execute courses of actions required to attain designated types of performances. It is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses”. The term ‘self-efficacy’ originated from psychology. In the context of computing, computer self-efficacy is defined as: “a judgement of one’s capability to use a computer” (Compeau and Higgins, 1995).

Self-efficacy has become commonly used by researchers in the field of IT to understand individual behaviours towards IT (e.g. (Kim et al., 2010; Reid, 2009; Li et al., 2012)). Thus, it has been decided to include it in the theoretical framework of this research and it has been emphasised by some of the interviewees in the exploratory study (see Chapter 5).

Furthermore, it is based on a call by (Bandura, 1986; Compeau and Higgins, 1995) to tailor the measurements of self-efficacy to the specific domain which is undergoing testing to increase prediction accuracy. This study considered computer self-efficacy and adapted the measures proposed by Compeau and Higgins (1995) with some modifications to make it applicable to the context of e-government.

6.3.4 Perceived Risk

Featherman and Pavlou (2003) argued that past research on technology adoption has primarily focused on the positive utility gains which can be attributed to technology adoption. Perceived risk is considered as negative utility or potential losses that can be attributed to e-services adoption (Featherman and Pavlou, 2003). They call it "Perceived Risk Theory" in their study, integrate it with TAM, and empirically test it which results in a proposed model for e-services adoption.

Perceived risk is interpreted as to feel uncertain regarding potential negative consequences/results of utilizing a service or a product (Featherman and Pavlou, 2003). It is defined in the marketing discipline as: "the expectation of losses associated with purchase and acts as inhibitor to purchase behaviour" (Peter and Ryan, 1976).

In the world of online services (e.g. e-commerce), consumers have demonstrated reluctance to accomplish purchase in the form of simple on-line transaction (Hoffman et al., 1999). The reason which makes them reluctant to interact with online services is: "consumers simply do not trust most Web providers enough to engage in relationship exchange involving money and personal information with them" (Hoffman et al., 1999).

According to Lee (2009), modelling perceived risk as a singular variable construct in previous e-banking research led to failure in reflecting the real characteristics of perceived risk and telling why users resist using online services. In this research, the perceived risk is first modelled as a single variable within the proposed framework, and then decomposed into its multi-facets. This is in line with Featherman and Pavlou (2003) and Lee (2009).

To deeply understand the role of perceived risk in e-government portals' success, this study carried out a more in-depth research of what the sub-facets of perceived risk are. Thus, perceived risk has been divided into six categories: performance risk, financial risk, social risk, time risk as theorized by Featherman and Pavlou (2003), security, and privacy as theorized by Featherman and Pavlou (2003) and Fu et al. (2006).

6.3.5 Personal Values

Values were defined by Rokeach (1973) and Schwartz (1992) as cognitive representations of desirable and abstract goals. Personal values can influence the behaviour of individuals in various aspects of life. The ten basic values identified by Schwartz (1992) have the strength of including all the core values that are widely

recognized in various cultures in the world (Schwartz, 2009). Table 1 lists the ten value types identified by Schwartz (1992).

Table 6.1: The value types and their definitions

Value type	Definition
Power	Social status and prestige, control or dominance over people and resources
Achievement	Personal success through demonstrating competence according to social standards
Hedonism	Pleasure or sensuous gratification for oneself
Stimulation	Excitement, novelty, and challenge in life
Self-direction	Independent thought and action—choosing, creating, exploring
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact
Tradition	Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion impose on the self
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms
Security	Safety, harmony, and stability of society, of relationships, and of self

Schwartz (1992) justifies the identification and classification of human values in that study: “identification of a universal structure would permit the derivation of basic value dimensions that could be used for the purpose of comparisons”. This will help future researchers who include personal values in their frameworks/models to know what values are most related to their phenomenon and what values have no impacts.

Rokeach (1973) states the importance of personal values inclusion in all sciences and when it is vital to study human behaviours: “The value concept, more than any other, should occupy a central position ... able to unify the apparently diverse interests of all the sciences concerned with human behaviours”. Schwartz (1992) commented on these words and stated that these words proclaim the centrality of personal values.

To know which of the ten personal values are most relevant to e-government portals, a Delphi study was conducted with a panel of experts. The aim of this Delphi study was to investigate which value types are particularly relevant to e-government portals' success or have a significant impact in the context of e-government portals; those values which are chosen as the result of this Delphi study are used later in this research to examine to what extent and how those identified value types affect e-government portals' success.

6.4 The Proposed Conceptual Framework

Based on calls, findings and recommendations from previous researchers, and the above discussions on the DeLone and McLean IS success model (2003), TAM (Davis et al., 1989), computer self-efficacy theory (Compeau and Higgins, 1995), Perceived Risk theory, values theory (Schwartz, 1992) as well as the exploratory study, the proposed theoretical framework for this study assumes that: System Quality, Information Quality, Service Quality, Computer Self-Efficacy, Perceived Risk and Personal Values are linked to e-government portals' Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using, Behaviour Intention to Re-use, Actual Use, and User Satisfaction. Furthermore, it is suggested in this research that these, in turn, influence the e-government portal's impact as measured by the Net Benefits from individuals' perspectives. The next section delineates the constructs of the framework and development of hypotheses.

6.5 Development of Hypotheses

As the personal values which represent culture were found to be an important aspect to consider, the Delphi study was conducted and reported in Chapter 7. The personal values related to e-government portals were identified. The proposed framework consists of two main models.

The first model shows the factors related to system success, TAM factors, computer self-efficacy, perceived risk and their effect on e-government success. The second model focuses on the relevant personal values and their impact on e-government use. The second model is based on the value-attitude-behaviour hierarchy (VAB) model. It consists of four constructs: conservation, openness to change, attitude toward using, and behaviour intention to use. Conservation and openness to change constructs represent personal values. The final theoretical framework for understanding e-government portals success is portrayed in Figure 6.3 and Figure 6.4.

In both models of the proposed framework, each arrow represents a hypothesis to be tested. Both models in the theoretical framework have been transformed into a structural equation model and tested empirically. Most of the hypotheses developed have been directly derived from the TAM, D&M success model and the VAB model. Likewise, the two newly added constructs to the first model (i.e. computer self-efficacy and perceived risk) are theorized based on what has been argued in the literature. However, it is thought to be useful to provide further discussion about all constructs and the arguments behind theorized hypotheses.

6.5.1 System Quality

System quality was defined by DeLone and McLean (1992; 2003) as the overall quality of performance manifested in a system, and it can be measured by the perceptions of the users. As the system quality acts as the “online storefront”, first impressions by the users are formed because users are faceless when they interact with e-government portals (Lin et al., 2011). If a user perceives an e-government portal's system quality to be of high quality, that user will be more likely to utilize Internet technologies in general and e-government online services in particular (Wang, 2003).

When individuals use Saudi e-government portals to search for information or apply for services, they expect more efficiency and effectiveness compared to their experiences and expectations of the traditional service office approach (Almalki et al., 2012). In fact, system quality has been found to be influential factor that influence perceived usefulness and ease of use (Lin et al., 2011).

Seddon and Kiew (2007) established a significant relationship between system quality and user satisfaction. In (Sung et al., 2009; DeLone and McLean, 1992), system quality was one of the constructs to predict user satisfaction. Seddon (1997) proposed a re-specification to the original IS success model; this re-specification contains a direct path from system quality to both perceived usefulness and user satisfaction.

- H1_a* System quality has a positive influence on the perceived ease of use of an e-government portal
- H1_b* System quality has a positive influence on the perceived usefulness of an e-government portal
- H1_c* System quality has a positive influence on user satisfaction with an e-government portal

6.5.2 Information Quality

When Davis (1989) proposed TAM, he called for further research to examine the role of additional external variables that affect perceived usefulness and ease of use. Information quality is one of those external variables that have been frequently found to be influential factors on perceived usefulness and ease of use as well (Lin et al., 2011). Furthermore, information quality, as assessed by individuals, usually affects their satisfaction (Moon and Kim, 2001; Aggelidis and Chatzoglou, 2009).

The model proposed by Seddon (1997), as a re-specification of the original IS success model, contains a direct path from information quality to both perceived usefulness and user satisfaction. DeLone and McLean (1992) stated that information quality singularly and jointly with system quality can affect user satisfaction. Furthermore, Seddon and

Kiew (2007) established significant relationship between information quality and user satisfaction. DeLone and McLean (1992; 2003) and Sung et al. (2009) considered information quality as one of the variables to predict user satisfaction.

- H2_a* Information quality has a positive influence on the perceived ease of use of an e-government portal
- H2_b* Information quality has a positive influence on the perceived usefulness of an e-government portal
- H2_c* Information quality has a positive influence on user satisfaction with an e-government portal

6.5.3 Service Quality

DeLone and McLean (2003) added service quality as one of the constructs for measuring IS success. They recommended that there is success updated model can benefit from SERVQUAL dimensions because service quality is the crucial success construct in the IS success model. When DeLone and McLean (1992) proposed their original IS success model, service quality was not one of its constructs. It was added to the updated model by DeLone and McLean (2003). They believe that, service quality does not deserve to be added to “system quality” or “information quality” (DeLone and McLean, 2003). DeLone and McLean stated that, “the change in the role of IS over the last decade argue for a separate variable- the ‘service quality’ dimension”.

In the context of the SERVQUAL model, service quality is defined as the relative distance between what customers expect and what is revealed of service quality and service experiences (Sung et al., 2009). The SERVQUAL model is widely adopted in the literature to gauge service quality in e-banking, e-government, online travel and other web-based services (Sung et al., 2009).

Service quality, in the context of this study, is defined as the quality of services/support which e-government portal users interact with/receive through the portal and/or from the government organization that is responsible for managing the portal. It uses different measurement items which are widely used in the literature.

In this study, service quality is linked to user satisfaction based on what was theorized in the updated IS success model of (DeLone and McLean, 2003). Also, service quality is one of the external variables with reference to TAM in this study. Therefore, service quality is linked to perceived usefulness as the latter can be influenced by many external factors (Davis et al., 1989). Examples of external factors are, interface and functional characteristics of the system (Davis, 1989).

H3_a Service quality has a positive influence on the perceived ease of use of an e-government portal

H3_b Service quality has a positive influence on the perceived usefulness of an e-government portal

H3_c Service quality has a positive influence on user satisfaction with an e-government portal

6.5.4 Perceived Risk

Perceived risk is “commonly thought of as felt uncertainty regarding possible negative consequences of using a product or service” (Featherman and Pavlou, 2003). It has become a widely popular construct within some IS studies, usually associated with online transactions (e.g. online shopping) (Cocosila et al., 2009). Cocosila et al. (2009) summarizes the most popular six risks in the literature of consumer behaviour as follows: performance risk, social risk, physical risk, psychological risk, and time risk.

Perceived risk is primarily posited as a notable barrier to users acceptance of e-services (Featherman and Pavlou, 2003). In the early investigation of the information technology acceptance and the role of perceived risk, it was revealed that users often have demonstrated reluctance to purchase online by completing a simple online transaction (Hoffman et al., 1999). This was due to risk concerns which mitigate against adoption. The perceived risk as a singular dimension is firstly integrated within TAM by (Cunningham, 1967). In that way, insight may be gained as to understand the relationship between perceived risk and e-government portals.

Cocosila et al. (2009) stated, in order to mitigate the impacts of perceived risk, research must consider and measure the effects of different types of risk. Toward this end, this study applies elements from the perceived risk literature that are properly chosen for the context of e-government. In fact, this selection is to some extent based on both reviewing literature and what has been revealed in the exploratory study (see Chapter 5). Therefore, this study adopts this notion of perceived risk and sets forth the following hypotheses:

H4_a Perceived risk has a negative influence on the perceived usefulness of an e-government portal

H4_b Perceived risk has a negative influence on the attitude toward using of an e-government portal

6.5.5 Computer Self-efficacy

According to (Wang, 2003), “Previous research using the TAM has found that individual differences are important external variables”. Wang (2003) define individual differences

as “traits such as personality and demographic variables, as well as situational variables that account for differences attributable to circumstances such as experience and training” (Wang, 2003). Variables of Individual differences play an important role in the development of any technological innovation in many disciplines, including production, marketing and information systems (Majchrzak and Cotton, 1988).

Zmud (1979) conducted a review and synthesis of previous empirical work on TAM, specifically related to management information systems success and individual differences. He found many studies consider variables relevant to individual differences. Those variables are numerous, and personality-related variables are among them (Wang, 2003). Individual differences variables are computer self-efficacy, perceived risk and personal values (openness to change and conservation). The two latter variables will be discussed in following sections.

Bandura (1977) stated that self-efficacy proved to be a good predictor of behavioural change. In the context of computing, computer self-efficacy refers to “a judgement of one’s capability to use a computer” (Compeau and Higgins, 1995). Compeau and Higgins emphasise that this “judgment of capability” is not concerned with “what one has done in the past, but rather with judgments of what could be done in the future”. In fact, previous studies have constantly shown that, it is crucial to consider self-efficacy in the computing environment (Chan et al., 2010).

Compeau and Higgins (1995) clarified that those capabilities were not meant to be simple skills (e.g. disk formatting or typing formulas in a spreadsheet). Rather, it includes judgements of the ability to apply skills to broader tasks (e.g. financial data analysis and preparation of written reports). It might be expected that individuals with a high computer self-efficacy consider themselves as able to achieve more difficult computing tasks than those with lower judgments of self-efficacy (Compeau and Higgins, 1995). This study is in line with this assumption. It considers judgments of the ability to apply skills to tasks such as making payments and personalizing the account.

The proposed link between computer self-efficacy and ease of use is consistent with the arguments made by (Davis, 1989; Mathieson, 1991). There also exists empirical evidence of the relationship between computer self-efficacy and ease of use (e.g. (Igbaria and livari, 1995; Wang, 2003)). Furthermore, based on Bandura’s (1986) social cognitive theory, Igbaria and livari (1995) theorized that computer self-efficacy influences a computer user’s anxiety which affects perceived usefulness and ease of use, and ultimately the actual system usage. Therefore, considering what has been discussed above, this study hypothesizes the following:

- H5_a* Computer self-efficacy has a positive influence on the perceived ease of use of an e-government portal
- H5_b* Computer self-efficacy has a positive influence on the perceived usefulness of an e-government portal

6.5.6 Personal Values

Personality is conceived by the psychologist Rokeach (1973) as a system of values. Rokeach (1973) asserted the centrality of the values concept: "The value concept, more than any other, should occupy a central position... able to unify the apparently diverse interests of all the sciences concerned with human behaviour". The issue of how individuals' choices and behavioural orientation are affected by the value priorities they held was investigated by Schwartz (1992). Attitudes was one of the domains that can be affected by value priorities (Schwartz, 1992).

In marketing and consumer behaviour research, it has been suggested that, "values are centrally held cognitive elements" that affect motivation for behaviour reaction (Vinson et al., 1977). Arguably, the influence of personal values on individuals' attitude, in an e-government portal environment, has not received adequate attention.

The present study applies and replicates a value-attitude-behaviour model to examine the roles of personal values in e-government portals' users' behaviour. Personal values hypotheses are formulated in Chapter 7 after deciding which of the ten values of Schwartz (1992) to employ and discussing them.

6.5.7 Ease of Use

It is predicted that ease of use affects perceived usefulness, because "the easier a system is to use, the more useful it can be" (Carter and Bélanger, 2005). Ease of use is defined by Davis (1989) as "the degree to which a person believes that using a particular system would be free of effort". Ease of use is among the beliefs which are hypothesised to be one of the predictors of perceived usefulness (Wang, 2003).

In the original TAM, ease of use is one of the four internal variables for which their effects on the actual use are measured (Turner et al., 2010). Other internal variables of the original TAM will be discussed in the following sections, namely: Perceived usefulness, Attitude toward using, and Behaviour intention to re-use.

Ease of use is one of the constructs which is theorized to be fundamental determinant of actual use (Davis, 1989). The theoretical importance of ease of use and perceived usefulness as fundamental determinants of use behaviour is stated by several research

disciplines (Davis, 1989). Bandura (1982) supported the importance ease of use. According to Davis et al. (1989), ease of use is “theorized to be determinant by external variables”. They found that ease of use as a key belief had a significant but small effect on intentions represented by attitude. Ease of use is one of the particular beliefs posited by TAM which has primary relevance to compute acceptance behaviour (Davis et al., 1989). This study follows the original TAM of Davis et al. (1989) which established links between ease of use, perceived usefulness and attitude toward using.

H6_a Perceived ease of use has a positive influence on the perceived usefulness of an e-government portal

H6_b Perceived ease of use has a positive influence on the attitude toward using of an e-government portal

6.5.8 Perceived Usefulness

Davis (1989) defines perceived usefulness as: “the degree to which a person believes that using a particular system would enhance his or her job performance”. Perceived usefulness and ease of use are theorized to be fundamental determinants of actual use (Davis, 1989). Perceived usefulness and ease of use are the two particular beliefs posited by TAM which have primary relevance to computer acceptance behaviour (Davis et al., 1989).

Perceived usefulness along with ease of use are both two types of belief that are affected by external variables (Wang, 2003). Also, both constructs are theorized to be fundamental determinants of actual system use (Davis, 1989). Davis (1989) stated that these two important determinants were suggested in previous research among other variables which may affect system use and explain what causes individuals to accept or reject using information technology.

The importance of including Perceived usefulness comes from the argument made by Seddon and Kiew (2007) that, “non-use does not necessarily mean a system is not useful, it may simply mean that the potential user has other more pressing things to be done”.

Many studies (e.g. (Shyu and Huang, 2011; Lin et al., 2011) have replicated the TAM of Davis et al. (1989) and proved that perceived usefulness has positive effects on attitude toward using and behaviour intention to re-use. This study follows what has been proposed by Davis et al. (1989) in terms of the relationships between perceived usefulness and attitude toward using.

TAM posits that perceived usefulness is a strong predictor of attitude towards using behaviour intention to re-use a particular information systems and services (Davis, 1989). The causal relationship between perceived usefulness and user satisfaction has been emphasized by Bhattacharjee (2001). Therefore, the current study adopts this notion and the following hypotheses are proposed:

- H7_a* Perceived usefulness has a positive influence on the attitude toward using of an e-government portal
- H7_b* Perceived usefulness has a positive influence on the behavioural intention to re-use an e-government portal

6.5.9 Attitude Towards Using

Swanson (1988) stated that, understanding the reasons of why we accept or reject computer technologies is one of the challenging issues in the IS research. In particular, the importance of examining the effects of attitude on why individuals accept or reject particular information systems is one of these challenges. Researchers have studied the influence of individuals' internal beliefs (such as perceived usefulness and perceived ease of use) and attitudes on their systems usage behaviour, and how these beliefs and attitudes are affected by a variety of external variables such as characteristics of system technical design (Davis et al., 1989).

Davis Jr. (1986) proposed the TAM as an adaptation of TRA which is meant to explain the behaviour of people in using computers (Davis et al., 1989). In fact, TRA is the theoretical basis of TAM for addressing the causal relationships between: perceived usefulness and perceived ease of use as the two key beliefs in the model, and users' attitude towards using the system, intentions and actual system adoption behaviour (Davis et al., 1989). In TRA, individuals' attitude was found to be one of the determinants of behavioural intention (Davis et al., 1989). In fact, the causal linkage between attitude and behaviour has been confirmed by numerous studies (Park and Kim, 2014).

TAM has been replicated in many studies (e.g. (Chang et al., 2005; Lin et al., 2011)) within different contexts and demonstrated that, attitudes have positive effects and can predict behaviour intentions. Davis et al. (1989) revealed that attitudes partially mediated the influences of perceived usefulness and ease of use on individuals' intentions. Attitude is a prime construct in the TAM, the key purpose of which is to trace the impact of external variables (e.g. system quality) on internal beliefs (i.e. perceived usefulness and perceived ease of use), and behaviour intentions (Davis et al., 1989). Therefore, the following hypothesis is proposed:

- H8* Attitude toward using has a positive influence on the behavioural intention to re-use an e-government portal

6.5.10 Behaviour Intention to Re-use

DeLone and McLean (1992) observed that two previous studies had made extensive review of literature and reported on measuring MIS success which had been widely used in empirical studies. One of these studies was conducted by Ives and Olson (1984), which aimed to review research on user involvement. Two categories of MIS outcome factor were adopted by Ives and Olson (1984), system quality and system acceptance. User behaviour was one of the variables of the system acceptance category (Ives and Olson, 1984). Furthermore, user behaviour is deemed as one of the most accurate predictors of individuals' behaviour in the future (Davis, 1989).

According to Chang et al. (Chang et al., 2005), TRA and TAM posit that the intention to perform a behaviour determines that behaviour. The attitude toward the behaviour determines the intention itself (Chang et al., 2005). Behaviour intention is defined in this study as the individual's likelihood to use the e-government portals, as adapted from (Chang et al., 2005). In the context of e-government, behaviour intention is defined by (Lean et al., 2009) as: "a measure of the strength of one's intention to perform a specific behaviour". Based on intention-based theories, the intention to use IT determines usage behaviour and user adoption.

The TAM theorizes the causal linkages between beliefs, attitudes, and behaviours (Lin et al., 2011; Shyu and Huang, 2011). Many studies focus on factors affecting behaviour intentions of system acceptance to examine individuals' actual usage (Lei-da et al., 2002; Gefen et al., 2003).

Indeed, in the TAM, actual use is influenced by behaviour intention (Davis, 1989; Davis et al., 1989). This relationship is well established in the TAM literature (Shyu and Huang, 2011). This relationship has been examined and supported by many studies (e.g. (Lin et al., 2011; Shyu and Huang, 2011)). Shyu and Huang (2011) stated, "actual usage is determined by behavioural intention". Consequently, behaviour intention to re-use is a critical factor of individual differences affecting individuals' actual use. Thus, this study proposes the following hypothesis:

- H9* Behavioural intention to re-use has a positive influence on the actual use of an e-government portal

6.5.11 Actual Use

System use is one of the six major categories of IS success which was posited by (DeLone and McLean, 1992). The aim of Davis (1989)'s study was, to pursue better

measurement items for predicting and explaining system usage. In fact, determining what variables may influence system use is the ultimate goal of TAM.

Actual system usage can be either compulsory or voluntary. The IS success model of DeLone and McLean (1992) is not restricted to voluntary systems, although they do state that, "actual use makes sense only when system use is voluntary" (Iivari, 2005). When the individuals confirm their expectation from prior IS use, this will in turn, influence their satisfaction (Bhattacharjee, 2001).

H10_a Actual use has a positive influence on user satisfaction with an e-government portal

As reported in (DeLone and McLean, 1992), many studies have included Use as an objective measure of success. The implication is, if a system is used, it is considered to be useful and consequently successful (Seddon and Kiew, 2007). This is in line with this study, since e-government portal usage in Saudi Arabia is still voluntary (i.e. all the available information and services still can be obtained via other means, such as office and telephone).

The creation of the IS success model of DeLone and McLean (2003) was driven based on a process understanding of IS and its impacts (DeLone and McLean, 2003). This process model has only three major components: the system creation, the system usage, and the impacts of this system use (DeLone and McLean, 2003). According to DeLone and McLean (2003), "without system use, there can be no consequences or benefits". They also believe that, "system usage is an appropriate measure of success in most cases".

Based on these notions and what has been theorized in (DeLone and McLean, 2003) about the causal link between actual use and net benefits and confirmed by many studies, the following hypothesis is proposed:

H10_b Actual use has a positive influence on net benefits of an e-government portal

6.5.12 User Satisfaction

The early definition of satisfaction was given by Locke (1976) in the field of job performance: "a pleasurable or positive emotional state resulting from the appraisal of one's job". It was defined by Naylor et al. (Naylor et al., 1980) as: "the result of the individual taking outcomes that have been received and evaluating them on a pleasant-unpleasant continuum". In the context of IS, user satisfaction is defined by Seddon and Kiew (2007) as, the feelings of happiness or unhappiness that comes from aggregating all the benefits which an individual hopes to gain from his/her interaction with the system.

Individuals have in their minds a set of aspirations or expected benefits from a particular information system (Seddon and Kiew, 2007). The individual is more or less satisfied as the extent that system fails or meet his/her expected benefits or aspirations (Seddon and Kiew, 2007). In IS research, user satisfaction is considered to be a surrogate measure of IS success (Gatian, 1994; Seddon and Kiew, 2007). It appears to be a crucial element in IS research because it is viewed as the key to build and retain long-term loyalty of individuals (Bhattacharjee, 2001).

In the context of e-government, individuals expect a high level of standards and subsequently a high level of satisfaction from e-government portals because they have experienced good e-services from the private sector and have become more Internet savvy (Edmiston, 2003). Continuous evaluation of e-government systems by measuring users satisfaction leads to enhancing the e-government systems (Huang and Bwoma, 2003).

A review of literature in e-government reveals that researchers have expressed somewhat different perceptions on satisfaction (Irani et al., 2012). DeLone and McLean (2003) deem the user satisfaction construct as the perceptual measure in their IS success model. In the context of e-government, research on user satisfaction has highlighted that e-government systems cannot be successful if the satisfaction level is below individuals' needs.

H11 User Satisfaction has a positive influence on net benefits of an e-government portal

6.5.13 Net Benefit

Net benefits has been proposed by DeLone and McLean (2003) as a single construct that combines two variables in the original IS success model: 'individual impacts' and 'organizational impacts'. As can be seen, in the formulation of the original IS success model, the term 'impact' was used. However, after Seddon and Kiew (1996) used 'consequences' and 'net benefits' to characterize the term 'outcomes', DeLone and McLean (2003) have come to prefer the new term 'net benefits'.

DeLone and McLean (2003) argued that the term 'impacts' in the original model may indicate positive or negative results, and thus may lead to a possible confusion as to whether the impacts are good or bad. Furthermore, including the word 'net' in the term 'net benefits' is crucial because no outcome is overall good or positive, without any bad or negative consequences (DeLone and McLean, 2003). Therefore, the term 'net benefits' was formulated in the updated IS success model as it might be the most precise term to describe the final success construct (DeLone and McLean, 2003).

According to DeLone and McLean (2003)'s concern for defining benefits for whom (e.g. the designer, the sponsor, or the user), "[a]re the benefits to be measured from the individual's perspective, his or her employer, or that of the industry or of the nation?". DeLone and McLean (2003) address the challenge for the researchers when net benefits are to be measured, by carefully and clearly defining who are the stakeholders and context of research in which the net benefits are to be measured. The reason is, stakeholders differ in their views as to what constitute benefits to them (Seddon et al., 1999b).

As this study considers the individuals' perception towards e-government portals, and based on the recommendation of DeLone and McLean (2003), it defines the net benefits from individuals' perspective of using e-government portals. It is worth mentioning that some of the measures of 'net benefits' were suggested by participants in the exploratory study (see Chapter 5) –as one of the focal parts of this research– and some of them were adapted from the literature. This is one of the major contributions of the present study.

In a similar vein to what was theorized by Wang and Liao (2008), this study excludes the feedback links from net benefits to both user satisfaction and actual use to reflect the cross-sectional nature of this study and to avoid model complexity.

6.6 Research Models

The original DeLone and MacLean model (1992) was proposed mainly to evaluate IS success based on performance (DeLone and McLean, 2004). On the other hand, the TAM model was proposed to measure the acceptance of IT (Lean et al., 2009). Combining constructs from both models will help to develop a comprehensive understanding of e-government portals' success. Firstly, from the point of view of users' acceptance of this technology, and secondly, this will help evaluate the impact of e-government portals success.

However, since the framework has 13 constructs which might involve complexity issues, this led to splitting the framework into two models (i.e. e-government portals success model, and personal values-attitude-behaviour model). Figure 6.3 represents the e-government portals success model and Figure 6.4 represents the personal values-attitude-behaviour model.

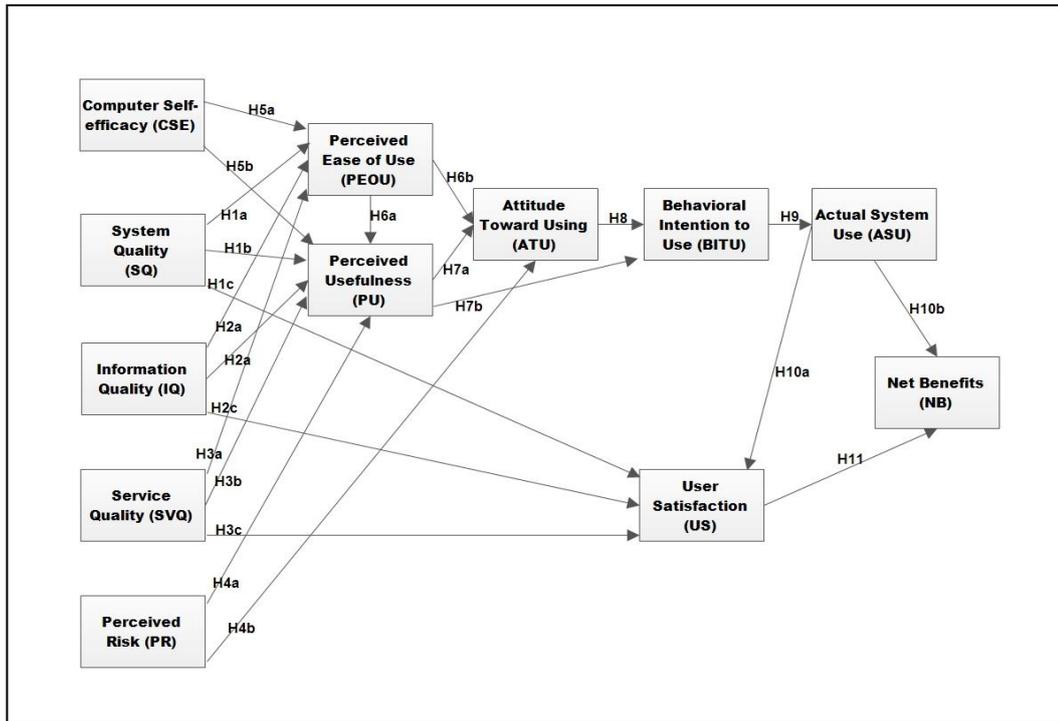


Figure 6.3: e-Government portals success model

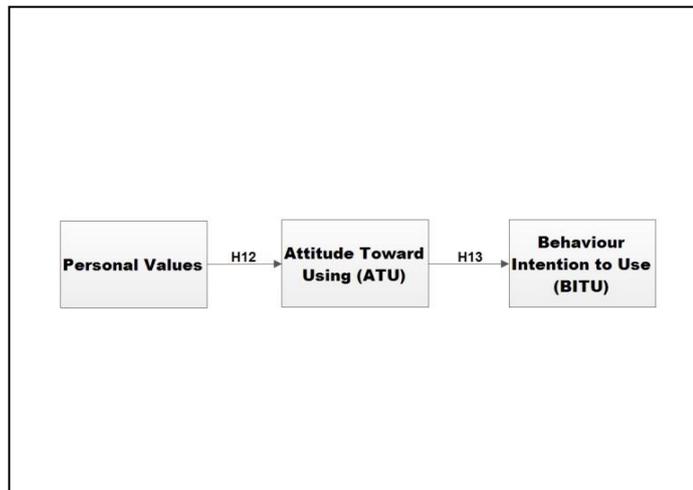


Figure 6.4: Personal values-attitude-behaviour model

The marriage of these literature streams may result in a more comprehensive framework for evaluating e-government portals' success, and therefore benefit the e-government research disciplines. This proposed framework can be seen as an extension to the updated DeLone and McLean IS success model (2003) by replacing the Use construct with the whole TAM (Davis et al., 1989). Also, it can be seen as using the TAM (Davis et al., 1989) with some identified external variables: quality dimensions of the updated DeLone and McLean IS success model (2003), perceived risk, personal values, user satisfaction and perceived net benefits. The framework helps to develop a better

understanding of factors that lead to success in terms of adoption and impact together. The most important contribution of this model is its focus on the perceived impact of e-government from individual's perspective. This success is measured from the individuals' perspective. Further details about this framework and its validation are reported in Chapter 8.

Table 6.2: The Proposed framework constructs' definitions

Construct	Definition	Adapted from
System quality	The desirable characteristics of the e-government portal	Petter et al. (2008)
Information quality	The desirable characteristics of the e-government portal output	Petter et al. (2008)
Service quality	The quality of services/support which e-government portal users interact with/receive through the portal and/or from the government organization that is responsible for managing the portal	Petter et al. (2008)
Computer self-efficacy	Perceptions of an individual of his/her ability to achieve a desired task using e-government portal	Compeau and Higgins (1995)
Perceived risk	The e-government portal users perception of the uncertainty and the negative effects of a desired result	Fu et al. (2006)
Personal Values	The cognitive representations of desirable and abstract goals	Rokeach (1973) and Schwartz (1992)
Perceived usefulness	The extent to which an e-government portal's user believes that using e-government portals would improve their reception of government information and services	Davis (1989)
Perceived Ease of use	The extent to which an e-government portal's user believes that using a particular e-government portal would be free of effort	Davis (1989)
Attitude Toward Using	Person's general feeling of favourableness or unfavourableness as far as the use or not of an e-government portal is concern	Fishbein and Ajzen (1975)
Behaviour Intention to Use	A measure of the strength of one's intention to perform a specified behaviour (i.e. using and interacting with e-government portal)	Lean et al. (2009)
Use	The extent and manner in which e-government systems users utilize the capabilities of an e-government portal	Petter et al. (2008)
User satisfaction	e-Government portal user's response to the use of the product of a particular e-government portal system	DeLone and McLean (1992)
Net benefits	The overall impacts of an e-government portal in use on individuals	DeLone and McLean (2003)

6.7 Summary

This chapter describes the effort to provide a comprehensive framework for evaluating e-government portals' success. This proposed framework is composed of a set of useful factors that were theorized from well-known IS theories/models and other discipline theories. Reviewing the literature of IS success and e-government evaluation revealed that there is a need to consider some major IS theories/models along with other theories from different research areas in order to establish a framework that is better to assess e-government portals' success from individuals' perspective.

The proposed theoretical framework will be empirically tested in the context of the Saudi government (see Chapter 8). It can also be adapted to a specific country situation and modified based on analysis of what factors apply in the context of the other country.

Two research activities are reported on in the following chapters. First, the Delphi study, in Chapter 7, aimed to know what value types are most relevant to the success of e-government portals. The relevant value types will be added to the current proposed framework under the construct of personal values. Second, a survey questionnaire was developed based on the measurement items proposed for each construct in the framework.

This survey questionnaire was distributed for users in the context of Saudi government portals. Those users nominated one of the government portals that they have used before and then answered questions regarding the evaluation of that portal based on the dimensions of the proposed framework. More details about the online survey study is reported in Chapter 8.

7 Identifying the Relevance of Personal Values to e-Government Portals' Success: Insights from a Delphi Study

Most governments have put considerable financial resources into the development of e-government systems. They are making significant efforts to provide information and services online. However, previous research shows that the rate of adoption and success of e-government systems vary significantly across countries. It is argued here that culture can be an important factor affecting e-government success.

This chapter aims to explore the relevance of personal values to e-government success from an individual user's perspective. The ten basic values identified by Schwartz (1992) were used. A Delphi study was carried out with a group of experts to identify the most relevant personal values to e-government success from an individual's point of view.

The findings suggest that four of the ten values, namely Self-direction, Security, Stimulation, and Tradition, most likely affect success. The findings provide a basis for developing a comprehensive e-government portal success framework, validated using a large-scale survey in Saudi Arabia.

7.1 Delphi Study Background

7.1.1 The Concept of Culture

Culture has always been considered as a major factor affecting IS adoption and success and many researchers have examined culture and its impact on IS success (e.g. (Leidner and Kayworth, 2006; Agourram, 2009; Al-Gahtani et al., 2007)). E-government, as a specific application of ICTs, can also be affected by culture (e.g. (Lean et al., 2009; Aladwani, 2012; Zhao, 2013)). A previous study conducted by the authors suggests that culture can also play a critical role affecting individuals' perception of the e-government portals' success. However, culture is a challenging variable to study since it has various definitions and measurement items (Leidner and Kayworth, 2006).

When conducting research that involves culture, the first challenge is to understand what culture is, how it is conceptualized, and what the possible dimensions are that form the concept of culture (Straub et al., 2002). Many definitions of the term 'culture' are available in the literature. It is notable to mention that (Kroeber and Kluckhohn, 1952) identified 164 definitions of culture. These definitions were formed in different ways and from many perspectives (Kroeber and Kluckhohn, 1952).

The definitions of culture differ in their understanding and using of a central concept (Sackmann, 1992). These central concepts might be: a set of beliefs, basic assumptions and a set of shared core values. This may create some ambiguity and confusion since different authors use these concepts in different ways (Sackmann, 1992).

The differences between conceptualizations of culture manifest themselves at four different levels (Hofstede et al., 2010). These levels explain the culture concept when exploring the depth of the concept. The importance of mentioning these levels is to show where the value concept is located in culture. Values occupy the kernel position in the culture concept. Table 7.1 shows the manifestations of culture at five levels: symbols, heroes, rituals, practices and values. The definitions and examples of these manifestations are taken from (Hofstede et al., 2010).

Table 7.1: Definitions and Examples of Manifestations of Culture (Hofstede et al., 2010)

Manifestations of Culture at Different Levels	Definitions and Examples
Symbols	Words, gestures, pictures, or objects that carry a particular meaning that is recognized as such only by those who share the culture (e.g. language)
Heroes	Persons, alive or dead, real or imaginary, who possess characteristics that are highly prized in a culture and those serve as models for behaviour (e.g. parents)
Rituals	Collective activities that are technically superfluous to reach desired ends but that , within a culture, are considered socially essential
Practices	Symbols, heroes, rituals are subsumed under the term practices
Values	Broad tendencies to prefer certain states of affairs over others. Values are feelings with an added arrow indicating a plus and a minus side (e.g. evil versus good and dangerous versus safe)

7.1.2 Personal Values

Values were defined by Rokeach (1973) and Schwartz (1992) as cognitive representations of desirable and abstract goals. Personal values can influence the behaviour of individuals in various aspects of life. Rokeach (1973) states the importance of personal values for all sciences and when it is vital to study human behaviours: “The value concept, more than any other, should occupy a central position ... able to unify the apparently diverse interests of all the sciences concerned with human behaviour”.

Schwartz (1992) justifies the identification and classification of human values in his study, arguing that, “identification of a universal structure would permit the derivation of basic value dimensions that could be used for the purposes of comparison”.

The ten basic values identified by Schwartz (1992) include all the core values that are widely recognized in cultures around the world (Schwartz, 2009). Table 7.2 lists the ten

value types taken from Schwartz (2009). Schwartz's classification can help researchers to know what values are most related to their phenomenon and what values have less of an impact.

In Figure 7.1, the circular structure shows the total pattern of relations of congruity and conflicts among ten values postulated by the theory (Schwartz et al., 2001). This arrangement of values in circular shape portrays a motivational continuum (Schwartz et al., 2001). According to Schwartz et al. (2001), "The closer any two values in either direction around the circle, the more similar their underlying motivations, and the more distant any two values, the more antagonistic their underlying motivations". Schwartz et al. (2001) assumes that value types that are presented at the opposite end of the theoretical model of the circumplex structure are in conflicting relations to each other.

Table 7.2: The Value Types and Definitions (Schwartz, 2009)

Value Type	Definition
Power	Social status and prestige, control or dominance over people and resources
Achievement	Personal success through demonstrating competence according to social standards.
Hedonism	Pleasure and sensuous gratification for oneself
Stimulation	Excitement, novelty, and challenge in life
Self-direction	Independent thought and action; choosing, creating, exploring
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature
Benevolence	Preserving and enhancing the welfare of those with whom one is in frequent personal contact (the 'in-group')
Tradition	Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide the self
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms
Security	Safety, harmony, and stability of society, of relationships, and of self

7.1.3 Personal Values in e-Government Portals' Success

Personal values have been studied in many different research disciplines. Researchers have included personal values as an important aspect in their studies. Such studies include environmental studies (e.g. (Papagiannakis and Lioukas, 2012; Lee, 2011)), mall shopping behaviour (e.g. (Shim and Eastlick, 1998; Cai and Shannon, 2012)), and food consumption (e.g. (Vermeir and Verbeke, 2008; Hauser et al., 2011)).

Personal values have also been considered in a number of studies in relation to IS adoption. For example, in the electronic shopping (e-shopping) context, Jayawardhena (2004) conducted a study to enhance the understanding of electronic consumers' (e-consumers) purchase behaviour by taking into consideration the effects of personal values on consumer attitude and behaviour.

Jayawardhena (2004) followed the value-attitude-behaviour model that is widely used to examine the role of personal values in various contexts. Jayawardhena (2004) found that: "Individual attitudes towards e-shopping were a direct predictor of e-shopping behaviour and mediated the relationship between personal values and behaviour. His findings on the relationship among personal values, attitudes and behaviour may be exploited by retailers to position e-shops and to provide a persuasive means for e-shoppers to satisfy their needs. Moreover, (Haag et al., 2009) also explored the relationship between personal values and personal knowledge development in e-learning environments.

The rationale of considering personal values in this study is based on the argument made by Schwartz and Bilsky (1987). They point out that the impacts of values as independent variables on both attitudes and behaviour can be predicted, and interpreted more effectively by using indexes of the importance of value domains as opposed to single values. Adopting the values theory in the context of e-government portals enables use of this theory to explain the role of personal values in affecting individuals' perceptions on the e-government portals success.

7.2 Research Method of the Delphi Study

To know which of the ten personal values are most relevant to e-government portals success, a Delphi study was conducted with a panel of experts. The aim of this Delphi study was to investigate which value types are particularly relevant to e-government portals' success from an individual user's perspective. The result of this Delphi study is used later to examine to what extent, and how, the identified value types affect e-government portals' success.

7.2.1 Delphi Method

The Delphi method seeks to obtain consensus on the opinions of experts through a series of questionnaires that collect and aggregate informed judgements on specific questions or issues (Duan et al., 2010). The Delphi method has been widely used in various research disciplines and has become an important technique in a variety of research areas (e.g. engineering, technology, social sciences, business administration and physical sciences) (Krishnaswamy et al., 2009). It has been a very useful method in

IS research (Okoli and Pawlowski, 2004; Gonzalez et al., 2010; Brügger and Willems, 2009).

A Delphi method is suitable when researchers or practitioners find no sufficient information to rely on to make decisions. Consequently, researchers seek the help from experts in the field of their research and conduct their study in the form of a series of questionnaires in one or more rounds (Krishnaswamy et al., 2009; Skulmoski et al., 2007).

The number of rounds that is required to arrive at an acceptable level of consensus can differ. Some researchers can reach an acceptable consensus in two rounds (Turoff, 1970). However, some studies carried out a Delphi study using only one round (Skulmoski et al., 2007). This is because the prime goal of a Delphi method is not to carry out specific number of rounds but to obtain a significant and substantial consensus among experts (Krishnaswamy et al., 2009).

The key advantage of this method is to avoid direct interaction and confrontation between the experts (Okoli and Pawlowski, 2004). This will enable the nominated experts not to provide their opinions under the influence of other experts since the opinions are provided in an anonymous manner.

The Delphi method is adopted in this study for a number of reasons. First, this study is to examine which value types are relevant to e-government portals' success. This ambiguous issue which has not been investigated in the literature requires knowledge from people who understand factors affecting IS success, e-government, and cultural and personal values. Second, the Delphi study method allows the researchers to collect richer data leading to a deeper understanding of the research questions.

7.2.2 Expert Selection

A Delphi study requires qualified experts with a deep understanding of the issues. According to Okoli and Pawlowski (2004) choosing appropriate experts is the most important but also the most neglected part of a Delphi study. Therefore, great caution has been taken when selecting experts in this study. The main goal of this study was to determine which of the ten individual-level value types are particularly relevant to e-government portals' success.

The research theme covers three major research streams that are e-government, websites evaluation and personal values/cultural studies. Forty experts were invited to participate. All of them were selected based on their publications, esteem in the field and

experience from the information published on their personal website. They have demonstrated extensive knowledge and understanding of the chosen fields. For example, some experts were identified through research on the relevant journal editorial board members.

There is a lack of agreement between scholars on the number of experts required for a Delphi study. Some researchers (e.g. (Brockhoff, 1975)) suggest that the minimum number of experts needed in order to get valid results is four. Others, such as Okoli and Pawlowski (2004) suggest to use 10-18 experts. Although forty experts were invited to participate in the study, we expected to have over 10 experts to participate in all rounds of surveys until a satisfactory consensus level is achieved.

7.2.3 Data Collection Procedure

The data were collected in two rounds. In the first round, a questionnaire was adapted based on the questionnaire by Haag (2010). The questionnaire was divided into different sections and intended to be as short and simple as possible in order to increase the response rate.

In the first round, the following information was collected:

1. Section one provides instructions to participants on how to participate in this Delphi study.
2. Section two provides background information about the Delphi study.
3. Section three collects participant's demographic information.
4. Section four asks the participants to select no more than five value types based on their judgement. These value types should be either particularly relevant or have a significant impact on e-government portals' success. The participants were invited to add their justification.
5. Section five explains the value types under investigation. This section lists all the ten individual-level value types along with their definitions and explanations from different sources of information.

E-mails were sent to forty experts to brief them about the Delphi study (see Appendix B.1). The experts had the option to fill in the Word document questionnaire (see Appendix B.2) or the online version (see Appendix B.3). Two rounds of reminder e-mails were sent (see Appendix B.4). Eleven experts out of forty responded to the survey in the first round, which represents a response rate of 28%.

The level of consensus in the first round was not sufficient and another round was carried out. Based on the compiled results, customised e-mails were sent to the eleven respondents. Each e-mail included the compiled results along with the selected value types by that particular respondent (see Appendix B.5). In the second round, the experts were requested to rank no more than five value types from 1 to 5, where 1=least relevant and 5=most relevant. The experts had the option to fill in the Word document questionnaire (see Appendix B.6) or the online version (see Appendix B.7). All 11 experts responded to the second round. Reminder e-mails were sent once to some of the respondents who did eventually respond by the specified deadline (see Appendix B.8).

7.3 Results and Analysis

This section summarizes, in two parts, the results of the two rounds. The following section discusses the results of the second round and their implications for this research.

7.3.1 Results of the First Round

Eleven responses were received after sending reminder e-mails to all the nominated experts twice. The results are compiled and presented in Table 7.3. The percentage of agreement was calculated by dividing the number of responses by the number of respondents and multiplying it by 100.

As can be seen in this table, Self-direction has the highest level of agreement. The remaining value types have medium, low and very low level of agreement. The last two value types, namely universalism and benevolence, showed the least level of agreement (26% and 9%, respectively) and it was decided to remove them from the second round.

Table 7.3: Delphi Study: First Round Results

Value type	Selecting Value Types as Particularly Relevant To/ Having an Impact on e-Government Portals' Success Total Number of Respondents: 11	
	No. of responses	Percentage
Self-direction	9	82%
Stimulation	7	64%
Security	7	64%
Tradition	5	45%
Conformity	5	45%
Achievement	4	36%
Hedonism	4	36%
Power	4	36%
Universalism	3	26%
Benevolence	1	9%

7.3.2 Results of the Second Round

The percentage of the level of agreement was calculated in this round based on the rankings given by the respondents. The level of agreement for each of the remaining eight value types was calculated by dividing the average of the rankings by the number of responses for each value type. The value types are listed in descending order based on the average rankings in Table 7.4.

Table 7.4: Delphi Study: Second Round Results

Value Type	Selecting Value Types as Particularly Relevant To/Having an Impact on e-Government Portals' Success Total Number of Respondents: 11		
	No. of Responses (N=55)	Sum of Rankings = \sum Rankings	Percentage of Agreement = $(\sum \text{Rankings} / 55) * 100$
Self-direction	10	39	71%
Security	10	38	69%
Stimulation	9	34	62%
Tradition	9	28	51%
Conformity	7	19	35%
Achievement	6	17	31%
Power	5	13	24%
Hedonism	4	7	13%

Based on Tables 7.3 and 7.4, a summary of the levels of agreement for the two rounds is provided in Table 7.5. It can be seen that the levels of agreement in both rounds are quite similar.

Table 7.5: Comparisons between the First and the Second Rounds

Selecting Value Types as Particularly Relevant To/Having an Impact on e-Government Portals' Success Total Number of Respondents: 11; Percentage of Agreement			
Value type	Round 1	Value type	Round 2
Self-direction	82%	Self-direction	71%
Security	64%	Security	69%
Stimulation	64%	Stimulation	62%
Tradition	45%	Tradition	51%
Conformity	45%	Conformity	35%
Achievement	36%	Achievement	31%
Power	36%	Power	24%
Hedonism	36%	Hedonism	13%

7.4 Discussion

The ranking of the importance of the personal value types helps to identify the most relevant value types to e-government portals' success. Thus, these values were added to the proposed framework that is tested in the context of Saudi Arabian e-government portals.

In this section, the opinions given by the expert panel in the first round are illustrated and discussed. It is noted that most of the comments were made when an expert felt that the value type is particularly relevant to e-government portals' success. Very few comments were given by the experts on why other values types are less relevant to e-government portals' success. Therefore, it can be noted that the comments presented in this section largely support the relevance of value types to e-government portals' success. In the following discussion, some comments by the experts regarding self-direction, security, stimulation and tradition are presented and discussed.

7.4.1 Self-Direction

Self-direction is the highest ranked value type in this Delphi study. Experts gave different justifications for selecting self-direction as particularly relevant to e-government portal's success.

One of the experts commented: "By visiting the e-government portal, you often have a particular aim in mind, i.e. something you want to achieve, e.g. submitting a particular request". This comment points to one of the measurement items of self-direction which is "Choosing our own goals" (Schwartz, 1992). This might mean that an e-government user who scores high on self-direction might want to share his goals/purposes of using the portals with others (i.e. government organizations, officials, users, etc.). He/she might not want the others (i.e. government organization) to be dominant in specifying the goals of creating or using the portal. Moreover, those users who score high on self-direction may think that it is important to be interested in using e-government portals in general and also to be independent (i.e. not to rely on the public sector organizations' employees to do things and to be restricted by their rules to get information or receive services).

Another expert commented: "Freedom in terms of time and place is the biggest thing that an e-government user is looking for, as he/she does not want to visit the government office but do things online at a convenient time and place". This comment clearly relates to the measurement item "Freedom" (Schwartz, 1992). This suggests that a person who scores high on self-direction may be eager not to be restricted by the time and place to receive the e-government services. He/she believes that dealing with the government can be conducted in a convenient manner regardless of time and location restrictions.

One of the experts pointed out that "an e-government user who scores high on self-direction is likely to be independent and do not prefer to be under the control of the others". This person might not like to be controlled by the public sector employees and does not prefer to interact with them face-to-face. Almalki et al. (2012) identified that one of the reasons why users prefer to use available e-government services is that one may

be able to avoid the possibility of corruption that exists when visiting offices and ask for services in a face-to-face setting. This may indicate that when dealing with government organizations, interacting with government employees and being controlled by them can be seen as a negative experience due to the possible administrative and/or financial corruptions.

7.4.2 Security

First of all, it is crucial to distinguish between the term 'security' in the context of human values and in the context of IT. In the context of human values, the definition of security given by Schwartz et al. (2001) is as follows: "Safety, harmony and stability of society, of relationships, and of self". In the context of IT and its applications, security is mainly defined as protecting users from fraud/financial loss and ensuring that a transaction is carried out as it was supposed to be (Papadomichelaki and Mentzas, 2012).

The issue of security has received a lot of interest in IS research. In developed countries, security is given great attention in various applications of IS such as online banking (Yuen et al., 2010). According to Yuen et al. (2010), commenting on security in online banking, they suggest that users in developed countries enjoy more security and better privacy measures and legislation. This should be considered with the same importance in the field of e-government because some services could involve money transfer. In sum, security is an important factor in whether or not individuals will use web-based services (Belanger and Hiller, 2006).

In the context of e-government, users are expected to provide more personal information when making transactions with e-government systems, in which they expose themselves to viruses, hacker attacks and identity theft (Kaisara and Pather, 2011). This makes security one of the worrying issues when using computers in general and being connected to the Internet in particular. Moreover, the expert panel has ranked security as one of the values that is particularly relevant to e-government portals' success. Therefore, an e-government portals' user who scores high on security as a value may score high as well on measurement items related to financial risk, security risk, and privacy risk.

The experts in this Delphi study look at security from a different point of view. The first comment raises a concern about the relationship between the government and the individuals: "I think this is very important. If I use an e-government portal, I do not want the government to use my interaction against me. There needs to be trust that my data is not misused". The other two comments discuss the issues of security and privacy when using the e-government portal: "I guess this may be very important because users should

feel that the shared information is safe and secure”, whereas the other comment states: “Users will use the portal when they have the feeling that their user data is safe”.

7.4.3 Stimulation

Stimulation is defined as “Excitement, novelty, and challenge in life” (Schwartz, 1992). In the context of using IT in general and e-government systems in particular, it is expected that the stimulation value may drive a person to leave traditional methods of receiving government services and utilize e-government systems. Using e-government is still a relatively new method of interacting with governments. This is expressed by different experts in slightly different terms. One of the experts stated: “Using e-government portals might be for some people a relatively new and exciting approach to search for information provided by public bodies. Browsing and exploring e-government portals could also be interesting and stimulating to people and make them want to find out more about the services public bodies can offer”.

One of the experts stated that the stimulation should come from the e-government systems itself. These systems should include means to foster a user’s engagement with the site: “An e-government system, like all interactive systems, should stimulate me and provide means to foster my engagement with the site. I need to have a positive user experience; I think this is the one of the crucial factors for a portal’s success and the reason why I may choose the portal over just picking up the phone”.

Another expert mentioned that there is a “need to define ‘success’ of e-government portals. If it is increased usage by public, I see using e-government portal may make certain people feel convenient, thus an enjoyable thing to get things done”. In this situation, the e-government users will be stimulated after using an e-government portal and feel convenient when using it. Both of the previous comments may indicate that the e-government user who scores high on stimulation is likely to score high on the quality dimensions of an e-government portal.

7.4.4 Tradition

When governments deliver services to their clients (i.e., in this study, citizens and residents), their service delivery can be categorized into two major types: the traditional way of visiting the government office in person or using telephone (Heeks, 2008), and the new way of using the e-government systems to obtain the information/services. Using e-government portals is an example of the second type of governments' services delivery.

Generally, clients expect a better quality of service delivery via e-government portals. According to Lin et al. (2011), Gambians using e-government websites tend to expect more efficiency and effectiveness of online services compared to the traditional face-to-face/counter approach. However, this is not something that can be generalized to all clients. Based on the definition of the tradition value, i.e. "respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide", (Schwartz, 1992) and its explanation given by Changingminds.org (2012) that, "The traditionalist respects that which has gone before, doing things simply because they are customary. They are conservatives in the original sense, seeking to preserve the world order as is. Any change makes them uncomfortable"; clients who are supposed to be traditionalist are likely to be reluctant to use e-government portals. This is due to their internal belief that they respect what has gone before, namely visiting the government office to interact face- to-face with the employees.

One of the experts on the panel commented on what could be the relationship between people who can be described as traditionalist and using e-government portals by saying: "scoring high on tradition might have a negative effect here. People might prefer the old-fashioned way of getting government information or they might prefer to deal with real people that can be advise them face-to-face".

Another expert discussed the importance of the tradition value and stressed that e-government portals should not disrupt a user's traditions: "this may also be important for users to feel that e-government does not disrupt their traditions. but this may vary a lot for different individuals". One expert recommended that, when users use e-government portals, they should not feel that they are disconnected from what they used to do with the government offices and the e-government portals should be implemented based on their requirements. This can be achieved, as the expert suggested, as follows: "[a] system will be easier to use when users find features/information/functionality that they know from the 'offline world' and they can connect to".

7.5 Summary and Lessons Learned

To understand the e-government portal success from an individual's point of view, it is argued that personal values play an important role. The ten basic values identified by Schwartz have been recognized as a valuable instrument to measure various dimensions of personal values. They have been used in different studies to establish the relationships between personal values and their impact on the chosen issues. However, not all of the ten values may be equally relevant to e-government success. Therefore, this study aims to identify the most relevant value types to the e-government portals' success. The

findings will lead a more focused approach in developing and testing a framework for e-government portal success evaluation.

The findings of this Delphi study show that self-direction, security, stimulation and tradition have been selected from the ten individual-level value types with regard to their relevance to e-government portal's success. These preliminary findings provide valuable insights and a sound basis for future research. For example, these four value types are included in the personal values effects model (see Chapter 6). This model is tested along with another model in the next stage of the research to further validate the relevance and extent of the impact of personal values on e-government portals in Saudi Arabia (see Chapter 8). Figure 7.1 shows the effects of the personal values model as suggested in Chapter 6.

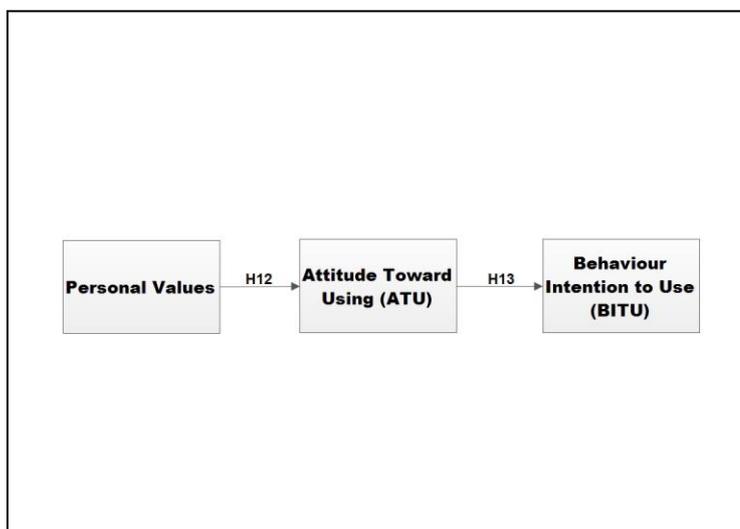


Figure 7.1: Personal values-attitude-behaviour model (as proposed in Chapter 6)

Based on what was proposed in Chapter 6, personal values revealed by the present study are integrated and validated with the personal values-attitude-behaviour model (see Figure 7.1). However, some studies in literature warrant about discriminant validity issues associated with the ten types of personal values. This is reported in the findings of Knoppen and Saris (2009). They reported the lack of discriminant validity of the ten personal values of Schwartz (1992). These discriminant validity issues were confirmed as well by Beierlein et al. (2012).

Beierlein et al. (2012) suggest dropping some of the items or collapsing some values as solutions to remedy the estimation problems of personal values (Schwartz, 1992) in a Confirmatory Factor Analysis (CFA). Beierlein et al. (2012) stated, "Solutions to remedy these problems included collapsing some values or dropping some of the items".

According to Beierlein et al. (2012) commenting on discriminant validity issues with personal values of (Schwartz, 1992), “Davidov and his colleagues suggested unifying these pairs of values instead of measuring them separately (cf. (Davidov, 2008; Davidov et al., 2008))”. Therefore, this research unifies self-direction and stimulation values into one construct, namely openness to change, and security and tradition values are unified into conservation.

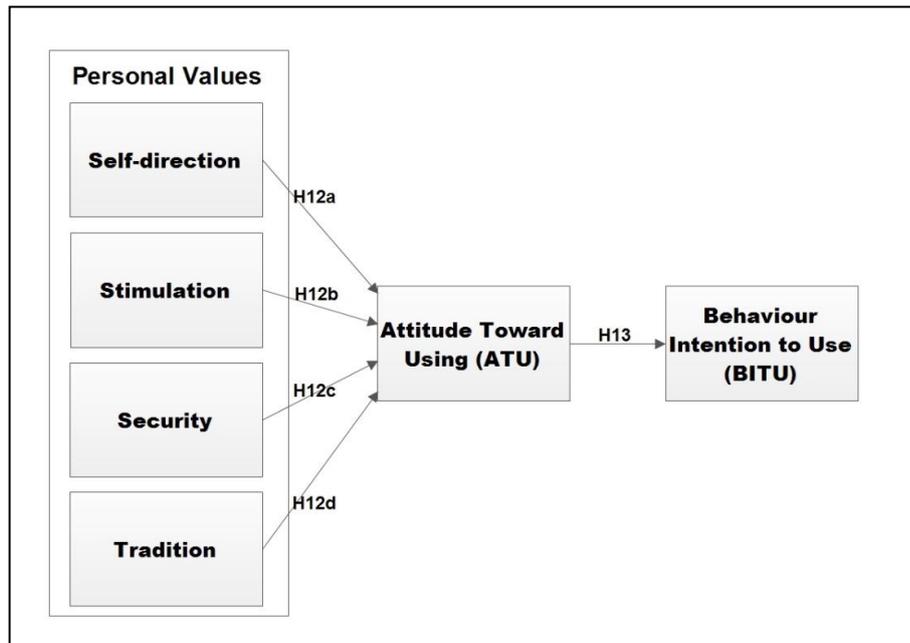


Figure 7.2: Personal values-attitude-behaviour model

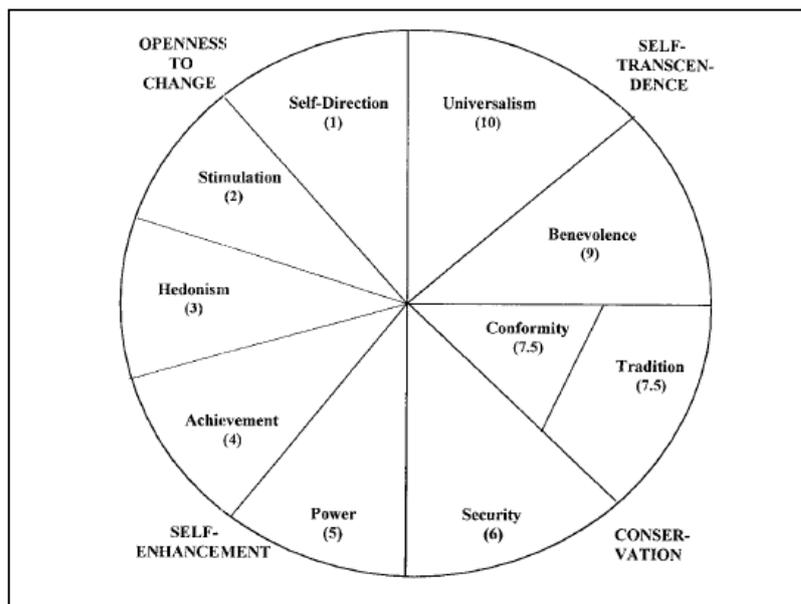


Figure 7.3: Theoretical model of circumplex structure of relations among 10 values of Schwartz (1992) (Source: (Schwartz et al., 2001))

Figure 7.4 below shows the updated personal values-attitude-behaviour model after taking into account the reported discriminant validity issues in the literature with the personal values of (Schwartz, 1992). The unification of security and tradition into conservation and self-direction and stimulation into openness to change is based on the theoretical model of circumplex structure of relations among 10 values of Schwartz (1992) (see Figure 7.3). From each of these constructs, there is a hypothesised relationship to attitude toward using e-government portals.

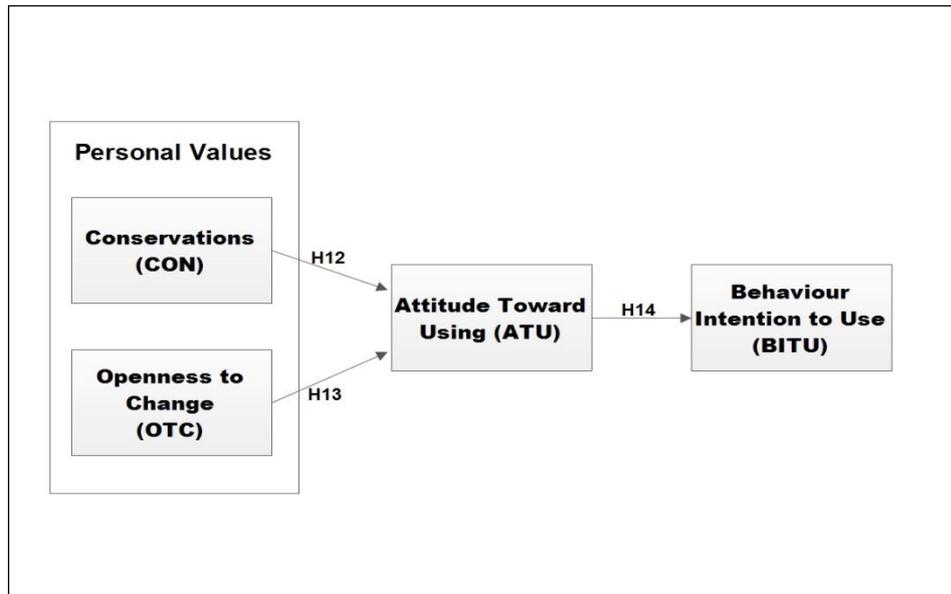


Figure 7.4: Final personal values-attitude-behaviour model

Following the discussions in Chapter 6 regarding personal values (see Section 6.5.6 and Section 6.6) and the discussion above regarding what personal values are mostly relevant to e-government portals success (see Section 7.4), the two hypotheses of personal values were updated:

H_{12} : Conservation has a negative influence on the attitude toward using of an e-government portal.

H_{13} : Openness to change has a positive influence on the attitude toward using of an e-government portal.

Each of the arrows represents one of the hypotheses to be tested (see Chapter 8). This theoretical model is transformed into a structural equation model to be empirically tested using large scale data collected via an online survey in Saudi Arabia.

8 Framework Validation

This chapter describes the online survey-based study used to validate empirically the proposed theoretical framework of e-government portal success. This framework was derived through reviewing the relevant literature of best-known theories/models. The framework was split into two main models (i.e. e-government portals' success model and personal values effects model) to overcome model complexity and validity issues as stated in in Section 6.6 in Chapter 6 and Section 7.5 in Chapter 7.

In the e-government portals success' model, twelve constructs were considered: system quality, information quality, service quality, perceived risk, self-efficacy, perceived usefulness, ease of use, attitude towards using, behaviour intention to re-use, actual use, user satisfaction, and net benefits. The personal values-attitude-behaviour model includes four constructs namely: openness to change, conservation, attitude towards use, and behaviour intention to re-use. The interrelationships between these constructs in both models are suggested in Chapter 6 and empirically tested in the present chapter.

The results advance the understanding of the factors that influence e-government portals success and provide a number of important implications for research and practice.

8.1 Online Survey Background, Objectives and Hypotheses

8.1.1 Background and Objectives

Many governments are keen to provide information and services in an easy and effective manner via the Internet. Therefore, governments attempt to enhance their provision of information and services via online e-government portals (Haidar and Abu Bakar, 2012). The Saudi Government Initiative Program was established in 2005 (Yesser Program, 2014). It aimed to promote the delivery of better information and services electronically to the public in Saudi Arabia. This is due to the great importance that the Saudi government attaches to transformation to the e-government concept as they strongly believe it has enormous benefits for the national economy.

Nowadays, individuals demand more and higher quality services throughout the Internet (Wang and Liao, 2008). In modern public administration, the development and management of e-government systems has become an essential element (Torres et al., 2005). As governments develop portals to provide these services, there is a necessity for assessment efforts, which evaluate the effectiveness of their e-government portals. To assert the success of e-government, it is a focal issue to measure its effectiveness, and to take the required actions based on what has been revealed by these assessments

(Gupta and Jana, 2003). However, there is still a lack of understanding about the effectiveness and success of e-government websites (Torres et al., 2005).

Such evaluation efforts can draw a clear and precise picture for government organizations to see whether they are capable of developing their portals at the levels of individuals' expectations (Gupta and Jana, 2003). The e-government studies that have been conducted on assessing government websites aid the government agencies in enhancing their portals. This enhancement generally benefits all stakeholders, and particularly individuals. These studies are also efforts that act as a contributing factor to ensure provision of and successful e-government. From these studies, if government organizations understand what factors lead to e-government portals' success, they could strategize and improve the development of their portals.

This study is an extension of previous research that investigated the evaluation of e-government websites success. It mainly aims to develop a framework for understanding the success of e-government portals. The proposed theoretical framework (see Chapter 6) assists in better understanding the factors that influence e-government success. This study is in line with other studies and its findings provide several important implications for e-government success research and practice.

Wang and Liao (2008) stated that, "DeLone and McLean do not provide an empirical validation of the updated model, and suggest that further development and validation are needed". Therefore, Wang and Liao (2008) recommended to continue the research in investigating and testing a comprehensive model of DeLone and McLean's IS success model (DeLone and McLean, 2003). Moreover, Agourram (2009) stated, "In reviewing the literature, we could not find specific research work that deals with how people in different cultures define and operationalize IS success". In fact, the process of using e-government portals by individuals fits nicely into the updated IS success model of DeLone and McLean (2003) based on the findings revealed by the exploratory study (see Chapter 5). Indeed, this is one of the major contributions of this study, which explore how Saudi individuals conceive e-government portals' success.

Furthermore, there are many studies in literature that discuss different issues relevant to e-government success but from one angle (e.g. acceptance). The present study fills this gap by integrating models/theories from different areas that attempt to understand e-government success from different angles. The proposed framework is argued to be comprehensive and adopts many variables. The culture variable (i.e. individuals' personal values) was one of the important variables in the proposed framework, which was validated in the context of Saudi e-government portals.

This online survey-based study aims to validate the proposed theoretical framework (i.e. composed of two models) at the individuals' level using a large-scale survey data. The online survey took place in the context of Saudi e-government portals.

8.1.2 Research Models and Hypotheses

All hypotheses were explained in detail in Section 6.5. By and large, based on the previous findings of DeLone and MacLean's updated IS success model (DeLone and McLean, 2003), TAM, as well as the four additional dimensions and relevant studies, a theoretical framework was proposed. The framework has been split into two models (i.e. e-government portals success model and personal values effects model) as presented in Figure 8.1 and Figure 8.2. More details about the proposed framework can be found in Chapter 6.

In the e-government portals success model, the constructs were derived from the updated D&M IS success model, TAM and two additional constructs namely: computer self-efficacy and perceived risk. In the personal values-attitude-behaviour model, two constructs were derived from VAB/TAM namely: attitude toward using and behaviour intention to re-use and two additional constructs which represent personal values: openness to change and conservation.

Thus, most of the suggested hypotheses are concrete because they were directly derived from well-known theories/models. They have been tested using data collected in an online survey which was administered in the context of e-government portals in Saudi Arabia. The set of hypotheses that were tested within this study is presented in

1 and Table 8.2 for e-government portals' success model and personal values effects model respectively. Both models were transformed into structural equation models, which were tested empirically.

Table 8.1: Hypotheses of e-government portals success model

<i>H1_a</i>	System quality has a positive influence on the perceived ease of use of an e-government portal
<i>H1_b</i>	System quality has a positive influence on the perceived usefulness of an e-government portal
<i>H1_c</i>	System quality has a positive influence on user satisfaction with an e-government portal
<i>H2_a</i>	Information quality has a positive influence on the perceived ease of use of an e-government portal
<i>H2_b</i>	Information quality has a positive influence on the perceived usefulness of an e-government portal
<i>H2_c</i>	Information quality has a positive influence on user satisfaction with an e-government portal
<i>H3_a</i>	Service quality has a positive influence on the perceived ease of use of an e-government portal
<i>H3_b</i>	Service quality has a positive influence on the perceived usefulness of an e-government portal
<i>H3_c</i>	Service quality has a positive influence on user satisfaction with an e-government portal
<i>H4_a</i>	Perceived risk has a negative influence on the perceived usefulness of an e-government portal
<i>H4_b</i>	Perceived risk has a negative influence on the attitude toward using an e-government portal
<i>H5_a</i>	Computer self-efficacy has a positive influence on the perceived ease of use of an e-government portal
<i>H5_b</i>	Computer self-efficacy has a positive influence on the perceived usefulness of an e-government portal
<i>H6_a</i>	Perceived ease of use has a positive influence on the perceived usefulness of an e-government portal
<i>H6_b</i>	Perceived ease of use has a positive influence on the attitude toward using an e-government portal
<i>H7_a</i>	Perceived usefulness has a positive influence on the attitude toward using an e-government portal
<i>H7_b</i>	Perceived usefulness has a positive influence on the behavioural intention to re-use an e-government portal
<i>H8</i>	Attitude toward using has a positive influence on the behavioural intention to re-use an e-government portal
<i>H9</i>	Behavioural intention to re-use has a positive influence on the actual use of an e-government portal
<i>H10_a</i>	Actual use has a positive influence on user satisfaction with an e-government portal
<i>H10_b</i>	Actual use has a positive influence on net benefits of an e-government portal
<i>H11</i>	User satisfaction has a positive influence on net benefits of an e-government portal

Table 8.2: Hypotheses of personal values-attitude-behaviour model

<i>H12</i> Conservation has a negative influence on attitude toward using an e-government portal
<i>H13</i> Openness to change has a positive influence on attitude toward using an e-government portal
<i>H14</i> Attitude toward using has a positive influence on the behavioural intention to re-use an e-government portal

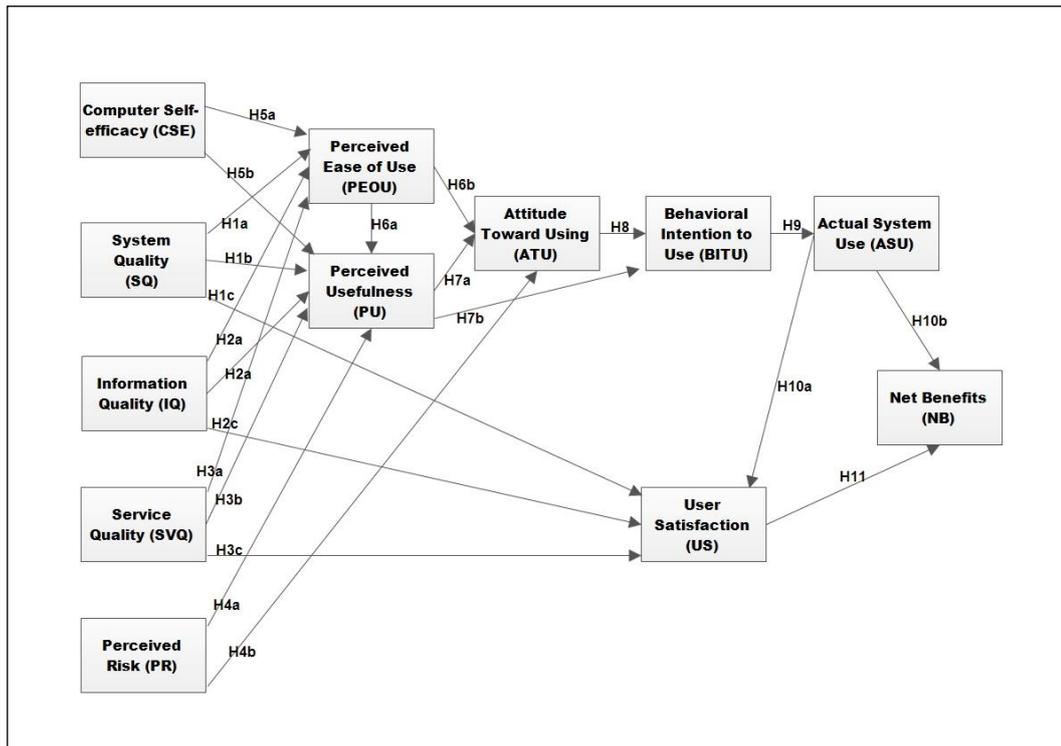


Figure 8.1: e-Government portals success model

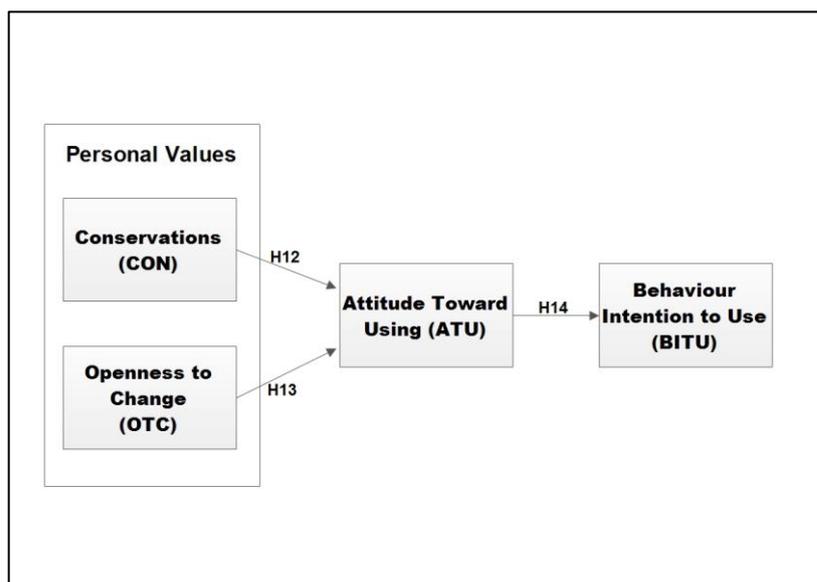


Figure 8.2: Personal values-attitude-behaviour model

8.2 Research Method of the Online Survey-based Study

The survey method was used in this study to collect data for the proposed theoretical framework's empirical assessment. This is consistent with many studies that aimed to replicate the D&M model or the TAM in various contexts (e.g. Wang and Liao, 2008; Lean et al., 2009; Urbach et al., 2010; Cheng, 2011). In fact, quantitative methods in general and surveys in particular are considered superior to qualitative methods in terms of generalizability (Johnson and Duberley, 2000). Consequently, this study is in line with the majority of studies in the context of IS success literature, which adopt a survey-based method to test hypotheses (Urbach et al., 2009). Numerous studies in literature, with the nature of hypotheses-testing, used surveys for the purpose of collecting data.

8.2.1 Measures of the Constructs

In order to operationalize the proposed theoretical framework, Urbach et al. (2010) suggest following other authors' recommendation to use tested and proven measurement items. The reason is to enhance validity (Urbach et al., 2010). Thus, measurement items identified in previous studies were adapted and modified to be appropriate in the context of e-government portals.

After reviewing the literature for existing constructs, initial item measurements pools were created for each construct. Basically, this is in line with many IS studies which are similar to this study in terms of their objectives and methodology (e.g. (Wang and Liao, 2008; Wang, 2008; Urbach et al., 2010)). Additional items were added to cover some important aspects of a construct's content domain. These items were suggested by the exploratory study (see Chapter 5 for more details).

In order to account for the assumption that e-government portals differ in their characteristics (e.g. information, services and functionalities) and, thus, individuals are accustomed to certain e-government portals they have used before, the questions of the online survey were designed to capture the various aspects of an e-government portal at a meta-level (i.e. asking general questions). Accordingly, the online survey questions were developed with the objective that all participants would be able to answer all the questions regardless of the features provided by a specific e-government portal. Table 8.3 presents the constructs, their type (i.e. independent/dependent) and the number of most appropriate items chosen for each of the constructs. For more information about all the measurement items used for the survey, see Appendices C.3, C.4, C.5, and C.6.

Table 8.3: Research variables

No.	Construct	Description	Type	No of Items	Source
1	PV (i.e. OC and CO)	Personal Values	Independent	16	(Schwartz et al. 2001)
2	SQ	System Quality	Independent	8	(McKinney et al., 2002), (DeLone and McLean, 2003) , (Parasuraman et al., 2005)
3	IQ	Information Quality	Independent	8	(McKinney et al., 2002), (DeLone and McLean, 2003), (Seddon and Kiew, 2007), (Wang and Liao, 2008)
4	SVQ	Service Quality	Independent	7	(DeLone and McLean, 2003), (Parasuraman et al., 2005), (Barnes and Vidgen, 2006)
5	PR	Perceived Risk	Independent	4	(Featherman and Pavlou, 2003), (Fu et al., 2006)
6	SE	Self-efficacy	Independent	7	(Compeau and Higgins, 1995)
7	EOU	Ease of Use	Dependent	7	(Davis, 1989), (Hu et al., 1999)
8	PU	Perceived Usefulness	Dependent	4	(Davis, 1989), (Moon and Kim, 2001)
9	ATT	Attitude Toward Using	Dependent	5	(Hu et al., 1999), (Moon and Kim, 2001)
10	BIRU	Behaviour Intention to Re-use	Dependent	4	(Hu et al., 1999)
11	AU	Actual Use	Dependent	7	(Almutairi and Subramanian, 2005), (Urbach et al., 2010)
12	US	User Satisfaction	Dependent	6	(Seddon and Kiew, 2007), (Wang, 2008), (Urbach et al., 2010)
13	NB	Net Benefits	Dependent	10	(DeLone and McLean, 2003)

8.2.2 Overview of the Online Survey Questionnaire

8.2.2.1 Development of Questionnaire Instruments

After proposing the conceptual framework (see Chapter 6), there was a need to confirm whether the measurement items capture the constructs of e-government portals' success. A survey questionnaire based on this criterion was designed for individuals to assess one of the e-government portals in Saudi Arabia.

In fact, at first, some information about the constructs was reviewed; see arrangement in Table 8.3. Based on the recommendation of Urbach et al. (2010), the most appropriate measurement items were chosen for each of the constructs. This was based upon a comprehensive review of relevant literature based on the recommendation of Cai and Shannon (2012) and after conducting the exploratory study (see Chapter 5). Therefore, the survey questionnaire was developed for all 13 constructs based on the list of measures as presented in Table 8.3. In the survey questionnaire, the questions were revised to make wording as precise as possible. This is based on the recommendation of Papadomichelaki and Mentzas (2012).

This section provides an overview of the questions that were asked in the online survey questionnaire. It should be noted that, the questionnaire has two different versions: female and male; and each version was available in dual language: English and Arabic (see Appendices C.3, C.4, C.5, and C.6). The reason for having the two versions is mainly because the PVQ questions were originally formulated in a gender specific way (Schwartz et al., 2001). This means that respondents have to select the appropriate version of the questionnaire based on their gender and language preference. Section 8.2.2.5 discusses the translation process of the survey questionnaire into the Arabic language. Further, it is worth mentioning that the questionnaire has been approved by the IRAC Ethics Committee. They commented that there are no ethical issues associated with the questionnaire. Appendix A shows the Research Ethics Scrutiny form used at the University of Bedfordshire, which has the approval of the IRAC Ethics Committee.

The questionnaire has three main parts: the first part deals with introducing the survey and requesting respondents' demographic information of, the second part requests information relevant to personal values using Portrait Values Questionnaire (PVQ), and the third part refers to assessing one of the Saudi e-government portals from individuals' perspective;. the model measurement items were collected in part two and three of the survey. The numbering of questions restarts at part two of the questionnaire. In part 3, the numbering of questions restarts at each construct. The total number of questions in the whole questionnaire is 101.

In order to ensure the quality of the questionnaire's presentation and design, the first draft was discussed with the researcher's supervisory team and was modified according to

their feedback. As a final pre-test before distributing the survey questionnaire in the field, the modified draft was trialled by a group of IT experts serving as test users. Based on their feedback, the questionnaires' appearance and instructions were finalized. This process of finalizing the questionnaire is in line with Urbach et al.(2010). The following sections briefly explain the three main parts of the online survey questionnaire.

8.2.2.2 Part1. Demographic Information

The first page of the questionnaire briefly explains the aim of the survey, ensures confidentiality and requests the respondents to participate voluntarily in the survey.

The first formal part of the questionnaire is the respondent's demographic information. Respondents were asked to give their demographics on six characteristics: gender, age, prior experience of using computers, prior experience of using the Internet, education and occupation.

These characteristics were chosen by reviewing the relevant literature. Gender, age and education were adopted from Chang et al.(2005), Fu et al. (2006), and Lin et al. (2011)' studies. Prior experience of using computers and the Internet was adopted from Fu et al. (2006)' study. Occupation was adopted from Lin et al. (2011)' study.

8.2.2.3 Part2. Personal Values

This part requests information relevant to respondents' personal values using PVQ. The 16 questions in this part were relevant to security and tradition which formulate the conservation construct, and self-direction and stimulation which formulate the openness to change construct. These value types were identified by the Delphi study reported in Chapter 7. The Delphi study aimed to explore the relevance of the personal values identified by Schwartz (1992) to the e-government portals' success from individuals' perspective.

The Personal Value constructs were measured using a "How much like you is this person" Likert scale (1 = Not like me at all, 2=Not like me, 3=a Little like me, 4= Somewhat like me, 5= Like me, 6= Very much like me).

8.2.2.4 Part3. Evaluating e-Government Portals in Saudi Arabia from Individuals' Perspective

The third part of the survey questionnaire is relevant to the assessment of an e-government portal that was selected by the participant. Respondents were asked to consider one of the Saudi e-government websites that they are experienced with and have visited recently. The purpose of this part is to collect data related to respondents' perception about e-government portals.

Respondents were requested to write down the name of the government organization and its website link and to answer the remaining questions accordingly. The total number of questions in this part is 79. Respondents needed to indicate their level of agreement or disagreement on a Likert scale (1-5) with a matching statement. The five-point Likert scale (1-5) reflects the extent to which the participant believed the portal had the feature described by the statement, with anchors ranging from 1="strongly disagree" to 5="strongly agree" used for all the questions in this section. Also, "I do not know" was available if the answer is unknown to the respondent.

Appendices C.3, C.4, C.5 and C.6 shows the full female and male questionnaire versions (i.e. both in English and Arabic). Appendix C.7 shows two screenshots of the online questionnaire as it was presented to the respondents.

After this overview of the online survey questionnaire, the next section discusses the process followed in this study to translate the questionnaire to the Arabic language.

8.2.2.5 Survey Questionnaire Translation

The questionnaire was written in English as the instruments were originally adopted from literature. This English version of the questionnaire was translated to Arabic by the researcher and then back-translated to English by another person who is Arabic native and fluent in English. This has been done to retain uniformity between the English and Arabic instruments (Aladwani, 2012). Then, the back-translated version was compared to the original English version and some minor amendments to the wordings of the questions were made when necessary (Cai and Shannon, 2012). This is to ensure translation equivalence and consistency (Cai and Shannon, 2012). In this study, the use of a back-translation process reveals that there were no discrepancies between the English and Arabic versions.

The adoption of a back-translation process in the present study is similar to the process of back-translation followed by Aladwani (2012). The process of back-translation has been used by many researchers in various disciplines. For example, Schwartz et al. (2001) used the process of back-translation in the area of culture and personal values.

Schwartz et al. (2001) prepare different versions of PVQ in a variety of native languages (e.g. Zulu, English, Xhosa, Venda, Afrikaans, North Sotho and Tswana) through a back-translation process. Almutairi and Subramanian (2005) used the back-translation process as well in the area of IS success. The validated Arabic PVQ version for males and females was obtained from Schwartz by personal contact. Therefore, the personal values part in the survey questionnaire was left intact and the process of back-translation was not applied to it.

8.2.2.6 Sampling

For studying a phenomenon like the success of e-government portals, the opinions of young adults are of utmost importance. This is consistent with Srivastava and Teo's (2009) study, which aimed to understand what factors influence the adoption and usage of e-government in Singapore. Srivastava and Teo (2009) focus only on the young adult population in Singapore. This was based on the recommendation made by McKnight et al. (2002). Srivastava and Teo (2009) argue that, in Singapore, students are an ideal pool of young adults with real experience of using e-government services, and interacting with authorities' websites. McKnight et al. (2002) stated, "[O]nline consumers are generally younger and more highly educated than conventional consumers".

Further, employees may have access to the Internet at their location of employment (Sipior et al., 2010; Lin et al., 2011). Lin et al. (2011) consider employees as subjects for the population of interest. Employees, "because of their career, were identified as having a greater than average access to the internet of e-government facilities" (Lin et al., 2011). Carter and Bélanger (2005) collected the data at a community concert. Their study purpose was to examine a proposed model to understand what factors affect citizen adoption of e-government (Carter and Bélanger, 2005). The participants –whose ages ranged from 14 to 83 years– of Papadomichelaki and Mentzas' (2012) study were students, academic faculty members, employees, unemployed and retired.

The present study goes far beyond what has been considered above. It considers all individuals who tend to use e-government portals to search for information or apply for services online. Respondents were students, employed, non-employed and retired individuals. Hence, the questionnaire respondents are members of universities (i.e. students, academic faculty members and other employees), government agencies, and private sector firms' employees. This indicates that, to a large extent, our respondent pool reflects the population of interest in e-government portals users in Saudi Arabia. Hence, this diverse sample provides a valid sample for this research.

8.2.2.7 Data Collection

The present study aimed to understand the factors that lead to e-government portals' success from individual perspectives in a government-to-citizen (G2C) setting. These portals were developed by government organizations to provide information and services as a G2C entity. The data used to test the research framework were collected from a sample of individuals who use one of various Saudi e-government portals.

Data collection was based on self-reported assessments and practices, rather than objective or observation data. Self-reported assessments and practices are deemed by Hu et al. (1999) to be appropriate because of the considerable literature that supports its

use in intention-based studies. Further, the data was collected on a cross-sectional basis design. Hence, measurements were obtained only at one point in time. This is in line with Sipior et al. (2010).

Wang and Liao (2008) argue that, "to increase the generalizability of the results, the respondents were spread across six popular G2C systems". However, Loiacono et al. (2007) contradict this view and stated:

"The scope of data collection must include reactions to many different web sites (even if only one per respondent). Given the method of testing for discriminant validity, restricting the focus to a single web site (even if evaluated by many consumers) will surface individual differences of opinion about a single object, rather than the ability of the instrument to accurately track the dimensions along which consumers perceive web sites as differing".

Consequently, to overcome any discriminant validity issue that might be triggered when reacting to specific e-government portals, this study follows the recommendation of Loiacono et al. (2007) by not restricting respondents to assessing a single e-government portal. Further, this gives the respondents the choice to assess any e-government portal to increase the generalizability of the results (Wang and Liao, 2008).

A pre-test of the questionnaire was performed with postgraduate students, academic staff and practitioners to evaluate ease of understanding, sequence of questions, contextual relevance and logical consistency; these were issues raised by Chiu et al. (2007). The comments received from the pre-test led to some minor modifications of the item sequence and the wording. This ensures the content validity of the measurement items (Urbach et al., 2010).

Moreover, a pilot study was conducted involving 16 postgraduate students and employees to make the final review and test the questionnaire. A few suggestions and comments were solicited on the wording and structure of the survey. Based on these suggestions and comments, the questionnaire was further modified. Thus, this study is in line with Chiu et al. (2007) and Urbach et al. (2010) by conducting a pilot study before administering the survey.

To gather the data, pre-notification emails were sent to 126 government agencies and 101 private sector firms in Saudi Arabia announcing the survey that would take place. Government agencies include: municipalities, governorates, universities, diwans (i.e. royal departments), presidencies, funds, faculties, corporations, councils, directorates, departments, authorities, ministries and other agencies. This classification, as well as the email addresses, was obtained from the Yesser website (www.yesser.gov.sa), the Saudi e-Government Initiative Program. The list of emails for private sector firms was obtained from Tadawul (www.tadawul.com.sa), the Saudi stock exchange company.

The pre-notification emails (see Appendix C.1) were sent in July 2013. Those emails provided: a brief about the research, the goal of the survey questionnaire to be sent, and the importance of the study was highlighted. Four weeks after the pre-notification emails, invitation emails (see Appendix C.2) were sent to those government agencies and private sector firms.

To collect the data, the invitation emails requested the organizations to inform their subordinates with the link for a website containing the online survey questionnaire, which they then self-administered. After 8 weeks, reminder and thank-you emails were sent to all organizations encouraging them to forward the invitation to their subordinates who did not participate in the survey (see Appendix C.8).

A total of 851 participants attempted the survey by November 2013. Only 214 (just over 25%) were validated responses and could be used in this study. The reason for not considering the remaining responses is the missing data issue. Many participants had started, but then quit shortly after completing the first few questions, perhaps because there were 101 questions in total.

Hair et al. (2010) recommended that, "variables or cases with 50 percent or more missing data should be deleted". In fact, this study follows Hair et al.'s recommendation and considers only the completed responses. The relatively low response rate in the present online survey can be justified by the long survey questionnaire (Hague, 2006). Usually, individuals are reluctant to respond to online surveys (Vehovar et al., 2002). This reluctance becomes bigger as the number of questions or the time needed to fill in the questionnaire increases (Groves and Couper, 1998).

The top 10 frequented e-government portals assessed by participants are presented in Table 8.4. Detailed descriptive statistics related to the participants' characteristics are presented in Table 8.5. Appendix C.9 presents detailed information on the frequency of all e-government portals evaluated in this survey.

Table 8.4: Top 10 frequented e-government portals evaluated by participants

No.	e-government portals used	Website address	Freq.	%
1	Ministry of Interior	www.moi.gov.sa	63	29.4
2	Ministerial Agency of Civil Affairs	www.moi.gov.sa/wps/portal/civilaffairs	24	11.2
3	General Directorate of Passports	www.gdp.gov.sa	14	6.5
4	Ministry of Higher Education	www.mohe.gov.sa	10	4.7
5	General Organization for Social Insurance	www.gosi.gov.sa	9	4.2
6	Ministry of Labour	www.mol.gov.sa	8	3.7
7	Ministry of Civil Service	www.mcs.gov.sa	8	3.7
8	Taif University	www.tu.edu.sa	5	2.3
9	Ministry of Foreign Affairs	www.mofa.gov.sa	4	1.9
10	Ministry of Justice	www.moj.gov.sa	4	1.9

Table 8.5: Characteristics of participants

Characteristic	Number	%
Gender		
Female	60	28.0
Male	154	72.0
Age		
<20	5	2.3
20–30	72	33.6
31–40	79	36.9
41–50	44	20.6
>51	14	6.5
<20	5	2.3
Using Computers experience		
Never used them before	0	0
Beginner	4	1.9
Intermediate	94	43.9
Advanced	116	54.2
Using Internet experience		
Never before	0	0
Beginner	5	2.3
Intermediate	81	37.9
Advanced	128	59.8
Education		
High school or less	25	11.7
Diploma	42	19.6
Bachelor	116	54.2
Master and above	31	14.5
Occupation		
Student	27	12.6
Government employee	95	44.4
Private sector employee	63	29.4
Retired	15	7.0
No Job	14	6.5

It was found that respondents were familiar with using computers in general and interacting with the Internet in particular. It is noted that the demographic profile of survey participants indicated a mature group of computer and Internet users who were familiar with both using computers and interacting with the Web. There were no respondents in the survey who had never used a computer or the Internet before.

Among the 214 respondents, 72% were male and 28% female. Ages of respondents varied but noticeably more than two thirds of participants were aged from 20 to 40: 2.3% of the respondents were under 20; 33.6% ranged from 20 to 30; 36.9% were ages 31–40; 20.6% ranged from 41 to 50; and 6.5% were over 51. With regard to a participant's experience of using computers, more than half of the respondents had advanced knowledge in using computers; 54.2% had advanced experience in using computers; 43.9% had intermediate experience; and a tiny portion, 1.9% of respondents, were beginners; and no respondent had never used computers before.

The experience of using the Internet among the participants is to some extent similar to their experience of using computers. More than half of the respondents had advanced knowledge of using the Internet; 59.8% had advanced experience; 37.9% had moderate experience; a very small portion of participants, 2.3%, were beginners; and no respondent had never used the Internet in the past.

A large portion, 54.2% of the respondents had a university education; 19.6% had a diploma; 54.2% had a Bachelor degree; and 14.5% had a Masters degree and above; while 11.7% had high school studies or lower. Further, a large portion of participants were employees in either the public or private sector; 44.4% were working for the public sector; 29.4% were working for the private sector; 12.6% were students, 7% were retirees and 6.5% had no job.

8.3 Data Analysis and Results

The proposed framework was validated using Structural Equation Modelling (SEM) techniques; a popular method for model testing. It is defined by Byrne (2013) as: “a statistical methodology that takes a confirmatory (i.e. hypothesis-testing) approach to the analysis of a structural theory bearing on some phenomenon”.

According to Li et al. (2012): “The measurement and research models were tested using the structural equation modelling (SEM) technique, which has been used in measuring user’s acceptance of IT”. It has been applied in many IS studies that adopt the updated D&M IS success model (e.g. Wang and Liao, 2008; Urbach et al., 2010). Section 8.3.2 discusses SEM in more detail.

Structural equations express hypotheses among variables that can be either unobserved variables (latent variables) or directly observed variables (manifest variables) (Udo et al., 2010). Actually, SEM has been considered as an appropriate covariance-based approach in models which are based on *a priori* theory (Iivari, 2005). AMOS was developed to create the covariance-based SEM (Udo et al., 2010).

Covariance-based SEM approaches suit the case at hand for the two main reasons stated by Iivari (2005). Firstly, a covariance-based approach is oriented towards theory testing and causal modelling rather than prediction. In fact, it requires a strong underlying theory and it is suitable for confirmatory-based analysis rather than exploratory analysis. Secondly, the number of cases in the present study, 214, is considered as a medium sample size which is suitable for covariance-based SEM methods.

The computer software IBM SPSS 19 and IBM AMOS 20 was used. The measurement model was assessed before the structural equation model was examined. Basically, in

analysing the framework with the collected data using the SEM approach, the present study followed the two-step procedure suggested by Anderson and Gerbing (1988) and Gefen et al. (2000). First, the measurement models were examined to measure convergent and discriminant validity. Then, the structural/path models that best fitted the data were identified, and the relationships between the theoretical constructs using these models were tested.

8.3.1 Screening and Cleaning Data

It is essential to check the data set for errors before starting to analyse data (Pallant, 2010). Pallant (2010) recommended two steps of the data screening process. These steps have been followed in this study:

- **Step 1:** Check the data set for errors. This includes checking all the variables for values that fall out of the range of their possible values. Indeed, this has been already accomplished for many variables throughout the online survey questionnaire website. All the measurement items have a scale to be selected by the participants. In this situation, there is no chance of making mistakes when entering data. However, for some questions in the questionnaire (e.g. age), some data that are of the range of possible values might be mistakenly entered. In this study, all participants were expected to be adults. Therefore, any age value less than 18 is considered an error. This might happen intentionally or unintentionally. For example, the participant may intend to enter 3 as his/her age when he/she might mean to enter 35.
- **Step 2:** Finding and correcting errors in the data set. In this step, errors were found (i.e. which cases are involved). These errors were corrected or the whole cases were deleted. For example, if the age has been entered as less than 18, then the whole case will be deleted due to the value being out of the range of possible values. However, if the age value was entered in the form of text characters, these values were re-entered in numbers (i.e. 0, 1, 2, 3 ... etc.).

8.3.2 Structural Equation Modelling (SEM)

The development of Structural Equation Modelling (SEM) techniques and software has grown dramatically since the 1970s (MacCallum and Austin, 2000). SEM was largely developed through the work of Karl Jöreskog (Holbert and Stephenson, 2002; Fornell and Larcker, 1981). It is a statistical modelling tool (Lei and Wu, 2007) that originally emerged from three separate streams of statistical and analytical analysis: factor analysis, path analysis and simultaneous equation modelling (Holbert and Stephenson, 2002).

SEM has expanded rapidly in its modelling capacities, estimation techniques and is widely used in various applications (Lei and Wu, 2007). To provide a basis for subsequent discussion, the following sub-sections on SEM present a brief overview of SEM along with some important issues related to the analysis.

8.3.2.1 Basic Concepts of SEM

According to Bollen (2005), it is a collection of statistical methods that refers to statistical procedures for multi-equation modelling systems that includes continuous latent variables, observed variables, multiple indicators of concept, errors in equations and errors of measurement. Kaplan (2000) describes SEM as, “a modelling of factor analysis and path analysis into one comprehensive statistical methodology”. Indeed, the process of modelling consists of four main stages: specifying the model, estimating the model, evaluating the model, and modifying the model (Bollen, 2005).

To be knowledgeable about SEM, It is essential to understand two concepts: the measurement model and structural modelling (Holbert and Stephenson, 2002). The measurement model creates relationships between unobserved variables and observed items (Holbert and Stephenson, 2002). The structural model examines a set of hypothesized relationships between two or more variables (Holbert and Stephenson, 2002). Byrne (2013) stated that, the primary task in model-testing when using SEM, “is to determine the goodness-of-fit between the hypothesized model and the sample data”.

SEM allows for a set of relationships between one or more discrete/continuous Independent Variables (IVs), and one or more discrete/continuous Dependent Variables (DVs) (Bollen, 2005). These IVs and DVs can be either measured variables or factors (Bollen, 2005). From a statistical point of view, SEM is an extension of General Linear Modelling (GLM) procedures, such as multiple regression analysis and ANOVA (Lei and Wu, 2007). The goal of using SEM for analysis is to test a model, to test specific formulated hypotheses, to modify the examined model, or to examine a set of related models (Bollen, 2005).

The model argues for the plausibility of relations between variables if the goodness of fit is adequate; if it is not, the relations among variables are rejected (Byrne, 2013). This is the goal of SEM to determine whether the hypothesized model reflects the underpinning theory when it is consistent with data collected (Lei and Wu, 2007). Moreover, SEM allows questions that involve multiple regression analysis to be answered (Bollen, 2005).

8.3.2.2 SEM versus Traditional Statistics and its Advantages

Four aspects set SEM apart from the old generation of multivariate procedures. First, SEM takes a confirmatory approach rather than an exploratory one to data analysis (Bollen, 2005; Lei and Wu, 2007; Byrne, 2013). Second, SEM estimates measurement errors explicitly whereas the traditional statistics methods assume that error(s) in variables vanish (Byrne, 2013). Third, SEM can incorporate both observed variables and unobserved (i.e. latent) ones (Lei and Wu, 2007; Byrne, 2013). The traditional methods are based on the measurement of observed variables only (Byrne, 2013). Fourth, SEM is characterized by features such as estimating indirect effects and modelling multivariate relations (Byrne, 2013). These features are not available within the traditional statistical techniques.

One of the major advantages of applying SEM versus other applications of GLM is, SEM can be used to examine the relationships among latent constructs that are measured by multiple indicators (Lei and Wu, 2007). It tests the model statistically in a simultaneous analysis of the entire variables to find the extent to which the model is consistent with the data (Byrne, 2013). Bollen (2005) summarizes the advantages of using SEM thus:

- When associations among latent variables are tested, these associations are free of measurement errors. This is due to these errors having been estimated and removed. Common variance is the only one remaining.
- When the phenomena under investigation are multidimensional and complex, SEM is considered the only statistical analysis tool that allows simultaneous and complete examinations of all the relationships.
- SEM is capable of testing hypotheses with a model at a construct level. This is a distinct advantage that characterizes SEM from other statistical analysis methods.
- SEM can statistically compare different models to one another. Each of these models might represent a theory. Thus, SEM provides a strong examination for different theories (models).

8.3.2.3 Major Statistical Assumptions of SEM

In this study, the major statistical assumptions underlying SEM suggested by Kaplan (2000) have been adopted. These assumptions are: sufficient sample, multivariate normality, data set is free of systematic missing data, and correct model specification. In addition to the necessity of data preparation that has been presented in Section 8.3.1, these assumption issues are discussed in the following sections.

8.3.2.3.1 Sample Sufficiency

The statistical characteristics of the different estimators depend on large samples (MacCallum and Austin, 2000). In fact, the issue of sample size is crucial because it has significant effect on the normality of data. Hair et al. (2010) stated that, “[N]ormality can have serious effects in small samples (fewer than 50 cases)”. However, Hair et al. (2010) added, “but the impact effectively diminishes when sample sizes reach 200 cases or more”.

Actually, the sample sufficiency for an SEM approach is a subject debated in the literature. This study follows this recommendation of Hair et al. (2010) and applies the analysis to more than 200 responses. This study is in line with Hu et al. (2003) and Lee (2009), which considers complete cases for analysis and removes partially completed responses.

8.3.2.3.2 Normality in SEM

Normal distribution of data is a statistical term that refers to describing “a symmetrical, bell-shaped curve, which has the greatest frequency of scores in the middle with smaller frequencies towards the extremes” (Pallant, 2010). The concept of normal data distribution is extremely important in statistics (Bowers, 1996). In multivariate statistical analysis, normality is deemed the most fundamental assumption (Hair et al., 2010).

The importance of the normal distribution is reflected in the validity of all resulting statistical tests (Hair et al., 2010). Thus, the resulting statistical tests are invalid if the variation from the normal distribution is quite large (Hair et al., 2010). This means, if the normality assumption has not been met, this may cause distortion to the findings of the statistical data analysis.

Normality can be assessed for outliers, skewness and kurtosis (Ullman, 2006). Statistics software provides other techniques to assess for normality, such as histograms and normal Q-Q plot in SPSS (Pallant, 2010). Two main types of normality with reference to statistical methods are to be checked: univariate normality which is assumed for univariate statistical methods and multivariate normality assumed for multivariate statistical methods (Hair et al., 2010). It is often helpful to examine the indexes of both univariate and multivariate normality to assess normality (Ullman, 2006).

Assessing the severity of the effect of violating the assumption of normal distribution is based on two matters: the sample size and the shape of the non-normal distribution (Hair et al., 2010). Hair et al. (2010) commented on the negligible impacts of un-normal

distribution as, “[W]hat might be considered as unacceptable at small sizes will have a negligible effect at larger sample sizes”. Hair et al. (2010) stated that the impact of normality is effectively reduced when the sample size exceeds 200 responses.

In literature, there is no consensus on what constitutes a large sample size. In some sources, a large sample size is more than 1000 responses. Other sources consider the sample size to be more than 2000 responses. In fact, the non-normality and sample size determines to a large extent the estimation method that is going to be used. For example, when the data is not normally distributed, the Maximum Likelihood (ML) is very sensitive to the size of the sample if it is less than 1000 responses.

▪ **Assessing Univariate Normality**

Univariate normality refers to the testing of the normal distribution of a single variable (Hair et al., 2010). This test can be easily carried out and the researchers should always examine the normality for all the metric variables included in the statistical analysis (Hair et al., 2010). The need to check for univariate normality is a prerequisite to the examination of multivariate normality (DeCarlo, 1997). Univariate normality can be assessed by obtaining values of skewness and kurtosis (Pallant, 2010).

Hair et al.(2010) argued that univariate normality does not necessarily guarantee multivariate normality. However, if all individual metric variables meet the univariate normality requirement, then departures from multivariate normality are unimportant (Hair et al., 2010). This opinion contradicts other opinions in the literature. Ullman (2006) stated that it is helpful when assessing normality to examine both univariate and multivariate normality.

Appendix C.10 presents the normality assessment test that was generated using AMOS 20. Results reveal that all the distributions for both skewness and kurtosis of all individual metric variables are normal and within the recommended threshold (Hair et al., 2010). Except for some variables, they are slightly above the recommended threshold of skewness.

Transformation could be a potential solution to remedy the non-normality. It has a large effect and substantially reduces the univariate kurtosis and skewness when the univariate non-normality is severe (Gao et al., 2008). Therefore, it has been decided in this study not to transform the individual variables and leave their values intact. This is based on the recommendation by Gao et al. (2008) that, “the role of transformation needs to be assessed on a case-by-case basis”. However, because the univariate non-normality is slight or moderate, transformation in this case has only a minor effect (Gao et al., 2008).

▪ **Assessing Multivariate Normality**

One of the main concerns about the data in SEM, is whether the sample is multivariate normally distributed (Gao et al., 2008). Thus, it is important to check this criterion has been met before undertaking any analysis of data (Byrne, 2013). It is a problem to SEM analysis that data have multivariate kurtosis (Byrne, 2013), the situation where the multivariate distribution of the measured variables has both peaks and tails and does not have characteristics of a multivariate normal distribution (Byrne, 2013).

Bollen (2006) argued that, the assumption of multivariate normality should not be applied to exogenous measured variables. However, the AMOS users' guide asserts the necessity to assess multivariate normality for both exogenous and endogenous variables (Arbuckle, 2011). In this study, the researcher follows the recommendation of the AMOS users' guide.

Although assessing the univariate normality is a necessity, it is not an adequate condition for attaining multivariate normality (DeCarlo, 1997). West et al. (1995) stated that the multivariate distribution of data can still be non-normal regardless of whether the distribution of individual variables is univariate normal. In general, when conducting SEM, it is a critical and important assumption that data is multivariate normally distributed (Byrne, 2013). However, there is no consensus in the literature regarding the need for multivariate normality when univariate normality is attained. Different opinions contradict each other in terms of what is sufficient to conduct SEM using an ML estimator (i.e. univariate normality only or both univariate normality and multivariate normality).

In spite of the effects of violations of the normality assumption, MLE has proven fairly robust (Hair et al., 2010). However, researchers avoid any reliance on multivariate normality when using AMOS by applying the available bootstrapping option within this statistical software (e.g. (Seddon and Kiew, 2007)). This is in line with Hoyle (2012) and Byrne (2013).

8.3.2.3.3 Model Estimation Techniques

Plausibility of normality and sample sizes are important factors that determine the selection of the appropriate estimation method (Ullman, 2006). Popular estimation methods are: Maximum Likelihood (ML), Unweighted Least Squares (ULS), General Least Squares (GLS), and Asymptotically Distribution Free (ADF) (Barber, 1983).

Deciding what estimation method to use is a debated topic with regard to the sample size. Ullman (2006) stated that ML or GLS estimators are good choices when the sample is medium (over 120) or large. Weiner et al.(1983) argued that when the size of the sample is less than 500 cases, GLS performed slightly better. On the contrary, under ideal conditions, MLE provides stable and valid results with a minimum sample size of 50 cases (Hair et al., 2010)

The effect of sample size is to produce greater stability and more information (Hair et al., 2010). Hair et al. (2010) stated “[G]iven less than ideal conditions, one study recommends a sample size of 200 to provide a sound basis for estimation”. If the researcher has collected more than the absolute minimum size of the sample, larger samples increase stability and mean less variability in the solutions (Hair et al., 2010).

Maximum Likelihood MLE has become the default approach in most SEM software and continues to be a widely used approach by researchers (Hair et al., 2010). According to Weiner et al. (1983), “[M]aximum likelihood is usually the default method in most programs because it yields the most precise (smallest variance) estimates when the data are normal”. However, its potential sensitivity to non-normality create a need for alternative estimation approaches (Hair et al., 2010).

The ADF has received particular attention due to its characteristic of being insensitive to non-normality (Hair et al., 2010; Byrne, 2013). However, ADF is limited in use due to its requirements of large sample sizes (Hair et al., 2010; Byrne, 2013). West et al. (1995) recommended having an extremely large sample (1000-5000) to base the analysis on ADF. Otherwise, ADF performs very poorly and can lead to severely distorted standard errors and estimated values (Curran et al., 1996).

ML is the most common estimation procedure in SEM (Hair et al., 2010; Ullman, 2006). Hair et al. (2010) stated, ML is “proven fairly robust to violations of the normality assumption”. Researchers made a comparison between ML and other estimation techniques and found that it produced reliable results under different circumstances (Hair et al., 2010). Thus, the SEM analysis in the present study will be based on ML estimation based on the aforementioned discussion.

8.3.3 Measurements

Measurement model is defined by (Hair et al., 2010) as: “[S]pecification of the measurement theory shows how constructs are operationalized by sets of measured variables”. The measurement theory refers to the set of relationships that propose how

measured variables come together to represent construct (latent) that is not measured directly (Hair et al., 2010).

The well-known and best statistical procedure for testing relations between sets of latent and observed variables is known as 'factor analysis' (Byrne, 2013). 'Factor loadings' represent relations in the procedure of factor analysis (Byrne, 2013). Generally, the goal of factor analysis is, to "identify the minimal number of factors that underlie (or account for) covariation among the observed variables" (Byrne, 2013).

There are two main types of factor analysis procedure: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (Hair et al., 2010; Byrne, 2013). Hair et al. (2010) asserted that EFA and CFA are not the same. They are similar in some respects but quite different philosophically (Hair et al., 2010).

Simply, EFA is used in situations where links between the latent and observed variables are uncertain or unknown (Byrne, 2013). In EFA mode, the analysis proceeds to determine to what extent and how the observed variables are linked to their factors (Byrne, 2013). The distinctive characteristic of EFA is that, the factors are not derived from theory (Hair et al., 2010). Instead, factors in EFA are derived from statistical results (Hair et al., 2010). EFA does not test a theory but might be helpful in suggesting the measurement model and providing insights into the structure of the measurement items (Hair et al., 2010).

Confirmatory Factor Analysis (CFA) is a method for examining how well measured variables represent a small number of constructs (Hair et al., 2010). It is a special case of SEM widely applied in measurement applications for different purposes (MacCallum and Austin, 2000). CFA represents what has been named a 'measurement model' (Byrne, 2013). It provides a confirmatory test of the measurement theory (Hair et al., 2010). Also, it is deemed as a tool that enables researchers to either confirm or reject their preconceived theory (Hair et al., 2010). In CFA, the assignment of indicators to variables is based on the theory being tested before obtaining any statistical results (Hair et al., 2010).

In fact, the CFA solely focuses on the linkages between constructs and their measured items within the framework of SEM (Byrne, 2013). Researchers gain a better understanding of their measures' quality when construct validity tests are combined with CFA results (Hair et al., 2010). According to Hair et al. (2010), "CFA, not EFA, should be used to test the measurement model". Actually, this is based on the critical distinction between EFA and CFA which is, "the ability of the researcher to use CFA to perform an

exact test of the measurement theory by specifying the correspondence between indicators and constructs” (Hair et al., 2010).

One of the emphases of this study is to develop measures that have desirable reliability and validity properties. A first-order confirmatory factor analysis using AMOS 20 was conducted to test the measurement model. The fit of the model is referred to as the similarity between the model-reproduced covariance matrix and the original model covariance matrix (Wang and Liao, 2008).

8.3.4 Content Validity

Content validity determines how comprehensive and representative the items which create the scale are (Moon and Kim, 2001). If the selected items are appropriate and they look right, the measure is said to have face or content validity (Churchill, 1979). To ensure content validity, the items used to measure each construct should be adopted from previous studies (Shyu and Huang, 2011).

In this study, definitions of the constructs in the proposed framework were proposed based on the relevant theories, reviewing literature of IS and other disciplines and the findings of the exploratory study conducted as part of this research. Additional items were added where some important aspects of a construct domain had not been previously covered. This is consistent with the employee portal study. Based on Churchill's recommendation (1979) of using a minimum of two indicators for a latent variable, this study complies with that recommendation by using multiple measurement items for each construct. It actually goes beyond this recommendation and uses more than four measurement items for each variable.

Therefore, content validity has been ensured by mainly adapting items for the constructs from prior studies (Wang and Liao, 2008). With regard to new items, they have been discussed with IS experts from both academia and practice and were piloted with many e-government users. This is recommended by Urbach et al. (2010). Based on the feedback received, the choice of items as well as wording was refined. In other words, after the extensive literature review, screening of the existing items used in IS, websites, portals, e-services, and e-government quality measurements (previously validated scales), the boundaries of the construct of interest were defined and an exhaustive candidate list of items from the domain of all possible items that consist of the quality construct of e-government portals was defined as well. This is consistent with Papadomichelaki and Mentzas (2012) for developing measurement items that have desirable reliability and validity.

8.3.5 Construct Validity

Construct Validity “determines the extent to which a scale measures a variable of interest” (Moon and Kim, 2001). According to Churchill (1979), construct validity is, “most directly related to the question of what the instrument is in fact measuring”. In SEM, one of the objectives of CFA is to assess the validity of the constructs in a proposed framework (Hair et al., 2010). Hair et al. (2010) define construct validity as: “the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure”.

Construct validity can be established by proving internal consistency, convergent validity and discernment validity (Churchill, 1979). In this study, convergent and discernment validity has been determined by following Straub’s processes for validating instruments in MIS research. This is in line with Moon and Kim’s (2001) study.

8.3.5.1 Reliability (Internal Consistency)

The relationship between reliability and validity is explained by Churchill (1979): “[R]eliability only provides negative evidence of the validity”. Thus, it is usually said that reliability is a necessity but not sufficient for validity (Churchill, 1979). Yu et al. (2005) define internal consistency reliability as, “the stability of individual measurement items across replications from the same source of information”. In this study, internal consistency reliability was assessed by computing Cronbach’s alpha (Moon and Kim, 2001; Yu et al., 2005). These coefficients are listed for each of the constructs in Table 8.6 for e-government portals’ success and Table 8.7 for personal values-attitude-behaviour model.

To evaluate reliability of the measurement items, Cronbach’s alphas were calculated and confirmed to be all greater than the recommended value of 0.70 (Hair et al., 2010). The values range from 0.836 (for perceived risk) to 0.954 (for ease of use), indicating a reasonable level of internal consistency among the measurement items (all above 0.7).

8.3.5.2 Convergent Validity

Convergent validity of a measure is, “provided by the extent to which it correlates highly with other methods designed to measure the same construct” (Churchill, 1979). Hair et al. (2010) define convergent validity as the assessment of the extent to which two measurement items of the same construct are correlated. Convergent validity was defined by Urbach et al. (2010) as the degree to which measurement items reflecting a construct converge to other measurement items measuring other constructs. Basically, convergent validity of the measurement item is appropriate when the constructs within the

model have an Average Variance Extracted (AVE) higher than 0.5 (Fornell and Larcker, 1981).

This study follows the recommendation of Fornell and Larcker (1981) to meet the three conditions for assessing convergent validity. Some studies followed a commonly applied criterion for assessing convergent validity by considering only AVE indicators to be above 0.5 (Urbach et al., 2010). In this study, assessing the convergent validity process is based on the recommendation of Fu et al. (2006):

1. Construct reliabilities (Cronbach's alpha) should be higher than 0.7, as asserted by Hair et al. (2010). This threshold should be raised as the number of measurement items increases.
2. All measures' factor loading should be higher than 0.7.
3. AVE for each construct should be higher than 0.5.

Values of these coefficients are listed for each of the constructs in Table 8.6 for e-government portals' success and Table 8.7 for personal values-attitude-behaviour model.

Table 8.6: Internal reliability and convergent validity – Measurement model of e-government portals' success

Construct	Item	Internal reliability		External reliability	
		Cronbach's alpha	Factor loading	Composite reliability	Average variance extracted
System Quality (SQ)	SQ1	0.841	0.800	0.844	0.644
	SQ3		0.746		
	SQ5		0.857		
Information Quality (IQ)	IQ3	0.841	0.796	0.847	0.649
	IQ7		0.756		
	IQ8		0.861		
Service Quality (SVQ)	SVQ4	0.814	0.772	0.818	0.601
	SVQ5		0.816		
	SVQ7		0.735		
Perceived Risk (PR)	PR2	0.842	0.702	0.847	0.651
	PR3		0.922		
	PR4		0.782		
Computer Self-Efficacy (CSE)	CSE3	0.839	0.740	0.845	0.647
	CSE4		0.908		
	CSE5		0.755		
Ease of Use (EU)	EU3	0.921	0.888	0.921	0.796
	EU4		0.919		
	EU7		0.869		
Perceived Usefulness (PU)	PU2	0.877	0.796	0.883	0.716
	PU3		0.824		
	PU4		0.914		
Attitude Toward Using (ATT)	ATT1	0.919	0.860	0.920	0.792
	ATT3		0.882		
	ATT4		0.927		
Behaviour Intention to Re-Use (BIRU)	BIRU2	0.914	0.878	0.901	0.752
	BIRU3		0.859		
	BIRU4		0.865		
Actual Use (AU)	AU4	0.821	0.846	0.831	0.622
	AU5		0.739		
	AU6		0.778		
User Satisfaction (US)	US1	0.886	0.863	0.887	0.724
	US3		0.840		
	US5		0.849		
Net Benefits (NB)	NB3	0.871	0.883	0.835	0.629
	NB7		0.743		
	NB8		0.745		

Table 8.7: Internal reliability and convergent validity – Measurement model of personal values-attitude-behaviour

Construct	Item	Internal reliability		External reliability	
		Cronbach's alpha	Factor loading	Composite reliability	Average variance extracted
Openness to Change (OC)	PV3	0.742	0.553	0.740	0.366
	PV5		0.640		
	PV10		0.708		
	PV12		0.525		
	PV14		0.581		
Conservation (CO)	PV2	0.834	0.602	0.832	0.417
	PV6		0.658		
	PV8		0.660		
	PV9		0.684		
	PV13		0.759		
	PV15		0.530		
	PV16		0.602		
Attitude toward using (ATT)	ATT1	0.933	0.857	0.936	0.747
	ATT2		0.827		
	ATT3		0.892		
	ATT4		0.909		
	ATT5		0.833		
Behaviour intention to re-use (BIRU)	BIRU2	0.914	0.892	0.898	0.746
	BIRU3		0.835		
	BIRU4		0.863		

8.3.5.3 Discernment Validity

Churchill (1979) asserted that, assessment of the measurement items should not only assess convergent validity, but also should consider discriminant validity. Discriminant validity is defined as, “the extent to which the measure is indeed novel and not simply a reflection of some other variable” (Churchill, 1979). It is defined by Hair et al.(2010) as, “the degree to which two conceptually similar concepts are distinct”.

Basically, measurement items that correlate highly may be measuring the same constructs rather than different ones (Churchill, 1979). It refers to the degree to which the measurement items of different constructs differ from each other (Urbach et al., 2010). Discriminant validity differ from convergent validity in which the former examines whether the measurement items do not unintentionally measure other constructs and the latter examines whether a measurement item measures the constructs it is supposed to measure (Urbach et al., 2010).

As it can be seen it Table 8.8, all the constructs in e-government portals' success have discriminant validity as the square root of their AVE are less than the correlations with one other construct. In Table 8.9, conservation and openness to change have validity

concerns as the square root of their AVE are less than the correlation with one other constructs.

Table 8.8: Results of discriminant validity test of e-government portals' success model; Square Roots of Average Variance Extracted (AVE) are presented as diagonal elements

	PR	ATT	BIRU	AU	US	NB	PU	EU	IQ	SQ	SVQ	CSE
PR	0.807											
ATT	0.108	0.890										
BIRU	0.023	0.810	0.867									
AU	-0.030	0.518	0.667	0.789								
US	0.026	0.678	0.794	0.694	0.851							
NB	0.025	0.666	0.754	0.650	0.705	0.793						
PU	0.031	0.783	0.810	0.724	0.818	0.781	0.846					
EU	0.082	0.606	0.695	0.618	0.787	0.629	0.823	0.892				
IQ	0.101	0.657	0.760	0.535	0.738	0.734	0.743	0.778	0.805			
SQ	0.086	0.684	0.661	0.498	0.767	0.561	0.732	0.796	0.738	0.802		
SVQ	0.188	0.502	0.561	0.518	0.745	0.465	0.604	0.761	0.706	0.610	0.775	
CSE	0.137	0.382	0.370	0.291	0.364	0.348	0.395	0.318	0.377	0.300	0.327	0.805

Abbreviations: PR = Perceived risk, ATT = Attitude toward using, BIRU = Behaviour intention to re-use, AU = Actual use, US = User satisfaction, NB = Net Benefits, PU = Perceived usefulness, EU = Ease of use, IQ = Information quality, SQ = System quality, SVQ = Service quality, CSE = Computer self-efficacy

Table 8.9: Results of discriminant validity test of personal values effects model; Square Roots of Average Variance Extracted (AVE) are presented as diagonal elements

	CO	ATT	BIRU	OC
CO	0.646			
ATT	0.220	0.864		
BIRU	0.176	0.829	0.864	
OC	0.929	0.209	0.206	0.605

Abbreviations: CO = Conservation, ATT = Attitude towards using, BIRU = Behaviour intention to re-use, OC = Openness to change

8.3.6 Results

This section is divided to three main parts: descriptive statistics, model fit and hypotheses tests. The hypothesised relationships were tested using SEM technique analysis to maintain consistency with earlier studies. SEM results for e-government portals' success model and personal values-attitude-behaviour model are presented in Figure 8.3 and Figure 8.4, respectively. The hypothesis tests are summarized in Table 8.13 for e-government portals' success model and Table 8.15 personal values-attitude-behaviour model.

8.3.6.1 Descriptive Statistics

Descriptive statistics of measured variables for all constructs are reported in Table 8.10.

Table 8.10: Descriptive analysis of the constructs

Construct	Mean	Standard deviation
System quality	3.93	1.23
Information quality	3.94	1.18
Service quality	3.40	1.37
Perceived risk	3.03	1.58
Computer self-efficacy	3.72	1.24
Perceived ease-of-use	3.87	1.09
Perceived Usefulness	4.00	1.14
Attitude toward using	4.24	0.95
Behavior intention to re-use	4.11	1.09
Actual use	3.72	1.26
User Satisfaction	3.68	1.17
Net benefits	4.09	1.13
Openness to change	4.21	1.39
Conservative	4.48	1.39

8.3.6.2 Model fit

CFA analysis was conducted to examine the following model-fit indices of the measurement models and proposed research models:

1. Degree of freedom/Chi-square ($x^2/d.f$)
2. Comparative Fit Index (CFI)
3. Normed Fit Index (NFI)
4. Non-Normed Fit Index (NNFI)
5. Increment Fit Index (IFI)
6. Goodness-of-Fit Index (GFI)
7. Adjusted Goodness-of-Fit Index (AGFI)
8. Root Mean Square Error of Approximation (RMSEA).

The above model-fit indices are used with many studies on IS success research. According to Chiu et al.(2007), to have sufficiently good model fit for a measurement model, the value of chi-square divided by degrees of freedom ($x^2/d.f.$) should not exceed 3, Comparative Fit Index (CFI) should be higher than 9, Non-Normed Fit Index (NNFI) should exceed 9 and Root Mean Square Error of Approximation (RMSEA) value should be less than 0.08. Anderson and Gerbing (1988) stated that, the value of RMSEA is acceptable if it is less than 0.1.

Table 8.11 presents the fit indices for measurement e-government portals' success and personal values-attitude-behaviour models. A similar set of fit indices were used to examine the structural model. The fit indices for both models were satisfactory and suggest adequate model fit. Thus, the path coefficients of the structural models were tested next.

Table 8.11: Fit indices for the measurement models

Fit index	e-government portals' success measurement model	Personal values-attitude-behaviour measurement model	Recommended value	Source
$\chi^2/d.f$	1.593	1.547	<5.00	(Shin and Shin, 2011)
CFI	0.947	0.973	>0.90	(Fornell and Larcker, 1981)
NFI	0.871	0.928	>0.90	(Bentler and Bonett, 1980)
NNFI	0.936	0.967	>0.90	(Bentler and Bonett, 1980)
IFI	0.948	0.973	>0.90	(Widaman and Thompson, 2003)
GFI	0.828	0.920	>0.90	(Bagozzi and Yi, 1988)
AGFI	0.782	0.888	>0.80	(Fornell and Larcker, 1981)
RMSEA	0.053	0.051	<0.08	(Hair et al., 2010)

The structural model was examined with the data gathered from the validated measures. Chiu et al. (2007) used $\chi^2/d.f.$, CFI, NNFI and RMSEA to examine the overall model-fit indices for the structural model. The CFI, NNFI, and RMSEA fit indices were used because they are generally not affected by sample size (Doll et al., 2004). As presented in Table 8.12, the overall model-fit indices for the structural models were reasonable.

Table 8.12: Fit indices for the research models

Fit index	e-government portals' success research model	Personal values-attitude-behaviour research model	Recommended value	Source
$\chi^2/d.f$	1.977	2.095	<5.00	(Shin and Shin, 2011)
CFI	0.905	0.944	>0.90	(Fornell and Larcker, 1981)
NFI	0.827	0.899	>0.90	(Bentler and Bonett, 1980)
NNFI	0.895	0.933	>0.90	(Bentler and Bonett, 1980)
IFI	0.906	0.945	>0.90	(Widaman and Thompson, 2003)
GFI	0.770	0.897	>0.90	(Bagozzi and Yi, 1988)
AGFI	0.732	0.860	>0.80	(Fornell and Larcker, 1981)
RMSEA	0.070	0.072	<0.08	(Hair et al., 2010)

Hypothesis tests for e-government portals' success model

As summarized in Table 8.13 and Figure 8.16, the results supported most of the hypotheses in the research model.

Table 8.13: Summary of hypotheses tests of e-government portals success model

Hypotheses	Standard coefficient	SE	CR	Supported
H1 _a . SQ → PEOU	0.490 ***	0.060	8.167	Yes
H1 _b . SQ → PU	0.269 ***	0.075	3.561	Yes
H1 _c . SQ → US	0.468 ***	0.060	7.741	Yes
H2 _a . IQ → PEOU	0.348 ***	0.054	6.448	Yes
H2 _b . IQ → PU	0.310 ***	0.064	4.835	Yes
H2 _c . IQ → US	0.141 **	0.052	2.733	Yes
H3 _a . SVQ → PEOU	0.350 ***	0.054	6.529	Yes
H3 _b . SVQ → PU	0.025	0.059	0.429	No
H3 _c . SVQ → US	0.265 ***	0.049	5.421	Yes
H4 _a . PR → PU	-0.070 *	0.034	-2.085	Yes
H4 _b . PR → ATT	0.052	0.031	1.643	No
H5 _a . CSE → PEOU	0.035	0.046	0.755	No
H5 _b . CSE → PU	0.121 **	0.044	2.771	Yes
H6 _a . PEOU → PU	0.322 **	0.110	3.023	Yes
H6 _b . PEOU → ATT	-0.064	0.077	-0.832	No
H7 _a . PU → ATT	0.743 ***	0.094	7.934	Yes
H7 _b . PU → BIRU	0.566 ***	0.100	5.677	Yes
H8. ATT → BIRU	0.462 ***	0.108	4.287	Yes
H9. BIRU → AU	0.820 ***	0.093	8.798	Yes
H10 _a . AU → US	0.319 ***	0.058	5.506	Yes
H10 _b . AU → NB	0.376 ***	0.083	4.553	Yes
H11. US → NB	0.328 ***	0.093	3.516	Yes

$p < 0.001$ ***, $p < 0.01$ **, $p < 0.05$ *

Abbreviations: SQ = System quality, PU = Perceived usefulness, PEOU = Perceived ease of use, US = User satisfaction, IQ = Information quality, SVQ = Service quality, PR = Perceived risk, ATT = Attitude toward using, CSE = Computer self-efficacy, BIRU = Behaviour intention to re-use, AU = Actual use, NB = Net Benefits

Table 8.14: Squared multiple correlations of e-government portals' success model

Construct	R ²
PU	64.8
PEOU	65.6
ATT	60.4
BIRU	74.9
AU	47.0
US	73.3
NB	46.8

Abbreviations: PU = Perceived usefulness, PEOU = Perceived ease of use, ATT = Attitude toward using, BIRU = Behaviour intention to re-use, AU = Actual use, US = User satisfaction, NB = Net Benefits

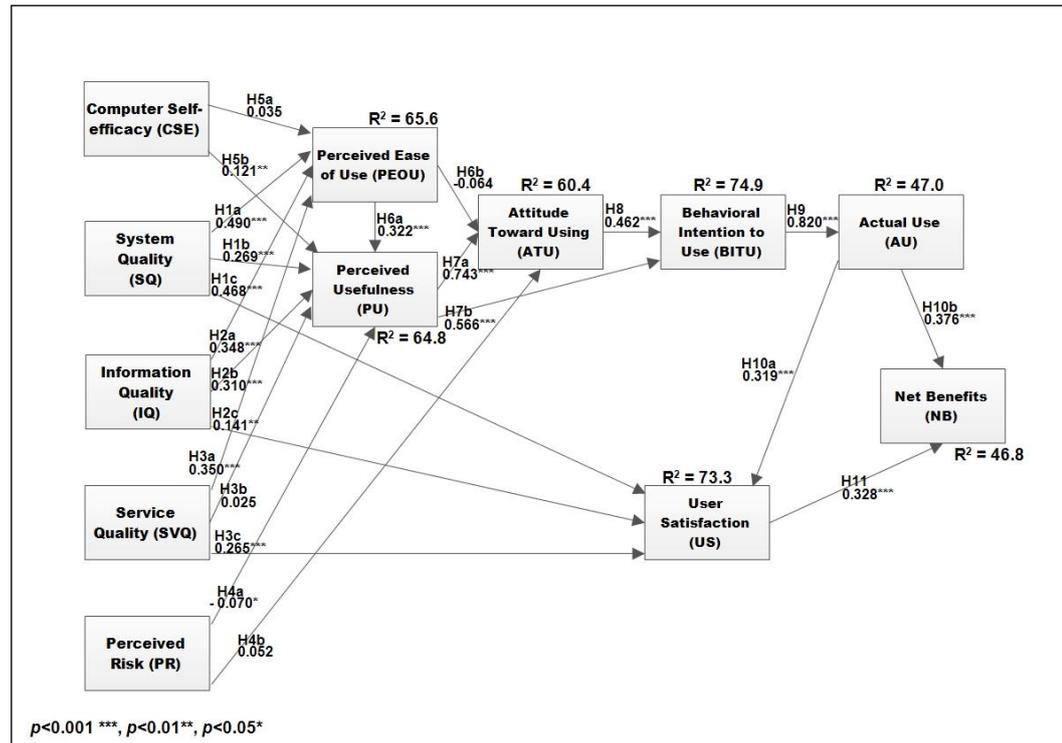


Figure 8.3: Hypotheses testing results of e-government portals success model

Hypotheses testing of e-government portals success model reveal that only four hypotheses were not supported: $H3_b$, SVQ had no effect on perceived usefulness; $H4_b$, PR had no effect on ATT; $H6_b$, PEOU had no effect on ATT; and $H5_b$, CSE had no effect on PEOU. The beta value shows the amount of change in the dependent variable that is caused by one standard unit of the independent variable.

SQ had significant positive effects on PEOU, PU and US ($H1_a$, $\beta=0.490$, $CR=8.167$, $p < 0.001$; $H1_b$, $\beta=0.269$, $CR=3.561$, $p < 0.001$; $H1_c$, $\beta=0.468$, $CR=7.741$, $p < 0.001$). Similarly, IQ had significant effects on PEOU, PU and a moderate effect on US ($H2_a$, $\beta=0.348$, $CR=6.448$, $p < 0.001$; $H2_b$, $\beta=0.310$, $CR=4.835$, $p < 0.001$; $H2_c$, $\beta=0.141$, $CR=2.733$, $p < 0.01$). SVQ had also significant effects on PEOU and US ($H3_a$, $\beta=0.350$, $CR=6.529$, $p < 0.001$; $H3_c$, $\beta=0.265$, $CR=5.421$, $p < 0.001$) but no influence on PU ($H3_b$, $\beta=0.025$, $CR=0.429$).

PR had a weaker negative effect on PU ($H4_a$, $\beta=-0.070$, $CR=-2.085$, $p < 0.05$) but no effect on attitude ($H4_b$, $\beta=0.052$, $CR=1.643$). CSE had a moderate effect on PU ($H5_b$, $\beta=0.121$, $CR=2.771$, $p < 0.01$) but no effect on PEOU ($H5_a$, $\beta=0.035$, $CR=0.755$). PEOU had a moderate effect on PU ($H6_a$, $\beta=0.322$, $CR=3.023$, $p < 0.01$) but no effect on ATT ($H6_b$, $\beta=-0.064$, $CR=0.007$), which was significantly influenced by PU ($H7_a$, $\beta=0.743$, $CR=7.934$, $p < 0.001$). PU had a notable effect on BITU ($H7_b$, $\beta=0.566$, $CR=5.677$,

$p < 0.001$), which was also significantly influenced by ATT (H8, $\beta = 0.462$, CR=4.287, $p < 0.001$).

BIRU had a notable effect on AU (H9, $\beta = 0.820$, CR=8.798, $p < 0.001$). Moreover, AU had significant positive effects on US and NB (H10_a, $\beta = 0.319$, CR=5.506, $p < 0.001$; H10_b, $\beta = 0.376$, CR=4.553, $p < 0.001$). Lastly, US had a notable effect on NB (H11, $\beta = 0.328$, CR=3.156, $p < 0.001$).

With regard to the variances of the constructs (Table 8.14), PU and ATT explained 74% of the variance in BIRU. Compared to ATT, PU had the strongest effects on BIRU. SQ, IQ, SVQ and AU explained 73.3% of US. SQ had the strongest effect on US compared to the other factors. CSE, SQ, IQ, and SVQ explained 65.6% of the variance in PEOU. Again, SQ had the strongest effect on PEOU compared to CSE, IQ and SVQ.

Moreover, CSE, SQ, IQ, SVQ and PEOU explained 64.8% of the variance in PU. PEOU had the strongest effect on PU. PEOU and PU explained 60.4% of the variance in ATT. PU was found to be the strongest effect on ATT. Lastly, BIRU explained 47.0% of AU while 46.8% of the variance in NB was contributed by AU and US. AU showed the strongest effects on NB.

8.3.6.3 Hypothesis tests for personal values-attitude-behaviour model

As summarized in Table 8.15 and Figure 8.4, the results supported most of the hypotheses in the research model. The hypotheses numbers are continued from the previous model.

Table 8.15: Summary of hypotheses tests of personal values-attitude-behaviour model

Hypotheses	Standard coefficient	SE	CR	Supported
H12. CON → ATT	0.121*	0.060	2.021	Yes
H13. OTC → ATT	0.173	0.094	1.847	No
H14. ATT → BIRU	1.048***	0.084	12.458	Yes

$p < 0.001$ ***, $p < 0.01$ **, $p < 0.05$ *

Abbreviations: CO = Conservation, ATT = Attitude towards using, OC = Openness to change, BIRU = Behaviour intention to re-use

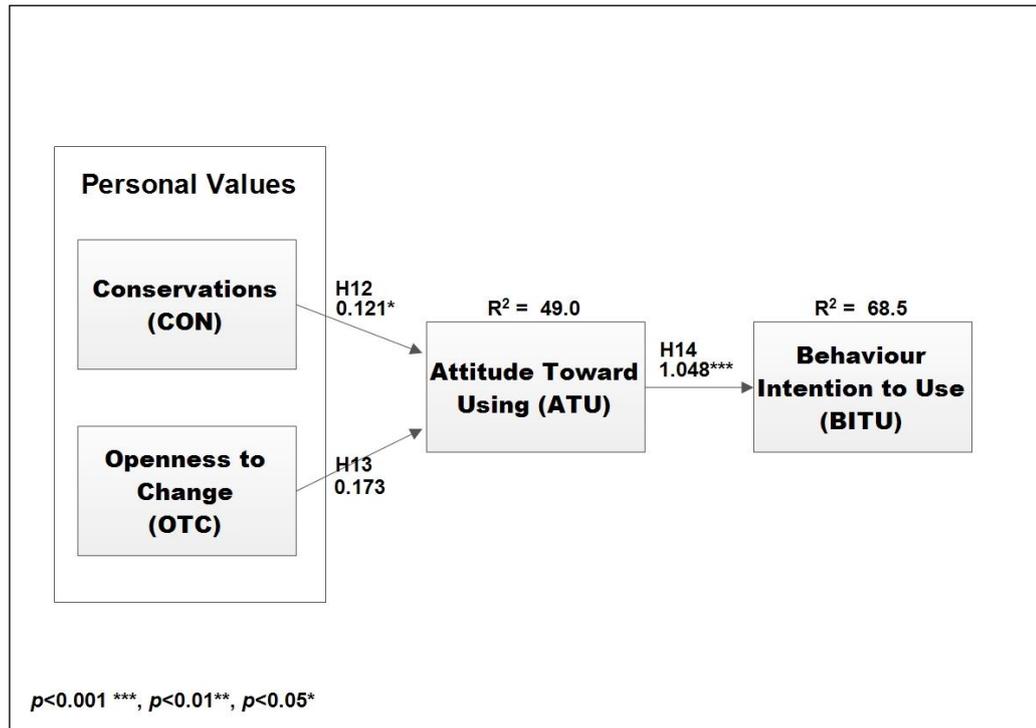


Figure 8.4: Hypotheses testing results of personal values-attitude-behaviour model

Table 8.16: Squared multiple correlations of personal values-attitude-behaviour model

Construct	R ²
ATU	49.0
BIRU	68.5

Abbreviations: ATT = Attitude towards using, BIRU = Behaviour intention to re-use

The result of hypotheses testing of personal values effects' model shows that, only one hypothesis is not supported: H13, OTC had no effect on ATT. CON had a weaker effect on ATT (H12, $\beta=0.121$, $CR=2.021$, $p < 0.05$). Lastly, ATT had a significant effect on NB (H13, $\beta=1.048$, $CR=12.458$, $p < 0.001$).

With regard to the variances of the constructs in personal values effects' model (Table 8.16), ATT explained 68.5% of the variances in BIRU. CON and OTC explained only 4.9% of the variance in ATT. CON had the strongest effects on ATT when compared to OTC.

8.4 Discussion

Having achieved the statistical analysis and produced the results, this section is dedicated to discussing the key factors that influence the e-government portals success.

This online survey based-study provides an extended framework based on the SEM approach that elucidates an individual perception towards e-government portals. The

accepted fit indices between both models and the collected data, as well as conformations of the hypothesised relationships, indicate the validity of both proposed models, which identify key factors that largely determine the success of e-government portals and explicate their causal relationships.

The following sub-sections address the key outcome of the empirical findings and discuss them in the light of previous studies together with the results of data analysis described in Section 8.3.

8.4.1 e-Government Portals' Success Model

This study demonstrates and validates a framework of e-government portals' success that captures the interdependent and multidimensional nature of e-government portals' success. Generally, the findings indicate that system quality, information quality, service quality, perceived risk, computer self-efficacy, perceived usefulness, perceived ease of use, attitude toward using, behaviour intention to re-use, actual use, user satisfaction and net benefits are valid measures of e-government portals' success. Apart from *H5a, H3b, H4b* and *H6b*, the other hypothesised relationships between variables were marginally or significantly supported (see Figure 8.3).

The following sections address the key outcomes of the empirical test of the e-government portals success model and discusses them in the light of the previous studies together with the assistance of the results of the statistical analysis.

8.4.1.1 Determinants of Perceived Usefulness

H1_b : System quality has a positive influence on the perceived usefulness of an e-government portal

H2_b : Information quality has a positive influence on the perceived usefulness of an e-government portal

System quality and information quality were found to have a strong positive effect on individuals' perceived usefulness. This result is consistent with Floropoulos et al. (2010) which was conducted in the context of e-government systems related to the Greek Taxation Information System (TAXIS), national information systems and financial services. They stated, "information quality and system quality are significant positive determinants of perceived usefulness" (Floropoulos et al., 2010). Further, Seddon and Kiew (2007) found the same results; information quality and system quality have a strong positive impact on perceived usefulness.

H3_b : Service quality has a positive influence on the perceived usefulness of an e-government portal

In the present study, service quality was found to have an insignificant effect on perceived usefulness. In contrast to this unpredicted result, Floropoulos et al. (2010) found the effect of service quality to be significant on perceived usefulness in the context of e-government systems.

The plausible explanation of having this contradictory finding represented by weak impact is that, participants in the present study were not impressed by the quality of services within the e-government portals they had assessed. This can be clearly verified by the lower value of the mean of service quality scored by respondents (see descriptive analysis in Table 8.10).

H4_a : Perceived risk has a negative influence on the perceived usefulness of an e-government portal

Perceived risk was found to have a significant negative effect on perceived usefulness. This finding is similar to what was revealed by (Featherman and Pavlou, 2003; Lee, 2009). Featherman and Pavlou (2003), found that perceived risk, which measures different facets of risk, negatively affects perceived usefulness. Lee (2009) found that performance risk negatively affects perceived usefulness, as was theorized in this study.

Actually, performance risk is one of the facets of perceived risk in the present study. Therefore, minimizing the risk associated with using e-government portals might increase the willingness of individuals to use those portals and conduct transactions online. This recommendation is built upon the suggestion of Lee (2009) to mitigate performance risk.

H5_b : Computer self-efficacy has a positive influence on the perceived usefulness of an e-government portal

As e-government portals are relatively new in Saudi Arabia, it is considered essential to understand the skills and capabilities of individuals in terms of their confidence to interact with those portals. Prior studies have constantly stressed the importance of considering self-efficacy in the computing environment (Chan et al., 2010).

The findings show that computer self-efficacy has a positive significant effect on perceived usefulness. The result generally confirms earlier research on TAM literature consistent with Igbaria and Iivari (1995). This implies that individuals who are confident in engaging with e-government portals are more likely to find them useful. It was confirmed by Shih and Fang (2004) who stated that, people with good skill in using computers and the Internet are more likely to be confident using the online banking.

H6_a : Perceived ease of use has a positive influence on the perceived usefulness of an e-government portal

Lastly, perceived ease of use was found to have a strong positive effect on perceived usefulness. This result is consistent with many related studies on the TAM (e.g. (Igarria and livari, 1995; Wang, 2003; Carter and Bélanger, 2005; Li et al., 2012)).

Ease of use is one of the variables theorized to be a fundamental determinant of perceived usefulness (Davis, 1989). The result indicates that individuals who perceived e-government portals to be easy to use are more likely to perceive them as useful.

8.4.1.2 Determinants of Perceived Ease of Use

H5_a : Computer self-efficacy has a positive influence on the perceived ease of use of an e-government portal

Computer self-efficacy was found to have an insignificant impact on perceived ease of use. This is contrary to what had been reported in many studies in the relevant literature of TAM (e.g. (Wang, 2003; Al-Somali et al., 2009)). However, this finding in the present study coincides with Wangpipatwong et al. (2008) which found computer self-efficacy had no effect on perceived ease of use.

According to Wangpipatwong et al. (2008), "A plausible explanation is that computer self-efficacy may diminish the significance when citizens gain increasing experience with e-Government websites". This also can be noticed from the demographic characteristics of participants in which it reflected the level of participants' experience of using the IT (i.e. experience of using computers and the Internet).

H1_a : System quality has a positive influence on the perceived ease of use of an e-government portal

H2_a : Information quality has a positive influence on the perceived ease of use of an e-government portal

H3_a : Service quality has a positive influence on the perceived ease of use of an e-government portal

The results also revealed that system quality, information quality and service quality positively and strongly affect perceived ease of use. Consistent with Chang et al. (2005), system quality was stronger in its impact on perceived ease of use than information quality. Moreover, service quality appears to be the second most influential variable on perceived ease of use and information quality was the last.

It is worth mentioning that Chang et al. (2005) did not include service quality in their research model. The reason was, the users of the Internet tax-filing system may emphasize service quality less in the context of their study (Chang et al., 2005). However, in the present study, service quality was found to be one of the essential quality antecedents of e-government portals usage which was adopted from DeLone and McLean's (2003) updated IS success model.

8.4.1.3 Determinants of Attitude toward Using e-Government Portals

H6_b : Perceived ease of use has a positive influence on the attitude toward using an e-government portal

The term 'perceived ease of use' reflects the extent to which users believe that using a particular system would be free of effort (Davis, 1989). Perceived ease of use is deemed to be the second strongest effect on attitude after perceived usefulness.

However, this study reveals an unpredicted finding. It states that perceived ease of use is insignificant and a weak component in determining individuals' attitude toward using e-government portals. However, this finding is consistent with Ha and Stoel (2009) and Jan and Contreras (2011). A plausible explanation of having this unexpected finding is due to the characteristics of the participants. The majority of them have advanced experience in using computers and the Internet. Consequently, this type of experience creates confidence which may lead to decrease in the impact of perceived ease of use on individuals' attitude toward using a system (Venkatesh and Morris, 2000).

H7_a : Perceived usefulness has a positive influence on the attitude toward using an e-government portal

This study found that perceived usefulness has a significant positive impact on individuals' attitude toward using e-government portals. The term 'attitude toward using' reflects individuals' general feeling of favourableness or unfavourableness as far as the use or not of a system is concerned (Fishbein and Ajzen, 1975). This result is consistent with many studies available in the technology acceptance literature (Taylor and Todd, 1995; Chen et al., 2002; Vijayasathy, 2004; Jan and Contreras, 2011). Among the salient beliefs, individuals' perceptions about usefulness of e-government portals appear to be the strongest determinant of attitude toward using e-government portals.

H4_b : Perceived risk has a negative influence on the attitude toward using an e-government portal

The findings also showed that there is no effect on attitude from perceived risk. In the context of e-government portals, perceived risk was defined earlier (see Chapter 6) as the e-government portal users' perception of the uncertainty and the negative effects of a desired result. It was theorised in this study that there is a direct link between perceived risk and attitude towards using e-government portals. Cocosila et al. (2009) highlighted the importance of conducting research on perceived risk to measure the different types of risk in order to mitigate it.

However, the unexpected result of having insignificant influence of perceived risk on attitude toward using e-government portals can be justified by the passion of individuals to use e-government portals even with some risk. Also, it can be justified that, respondents might sacrifice risk in return for receiving government information and services online. In the exploratory study (see Chapter 5), respondents exhibited the inconvenience to interact face-to-face with the employees of the government offices and they stressed their preference to avoid interacting with them.

8.4.1.4 Determinants of Behaviour Intention to Re-use

H8: Attitude toward using has a positive influence on the behavioural intention to re-use an e-government portal

The present study found that attitude toward using e-government portals has a significant positive effect on individuals' behavioural intention to re-use e-government portals. This finding is consistent with many studies in the literature of technology acceptance (e.g. Yu et al., 2005; Moon and Kim, 2001). According to Moon and Kim (2001), "[A]ttitude toward using the WWW [World Wide Web] has a strong significant influence on the behavioural intention". Also, according to the TAM (Davis et al., 1989), attitude toward using a system has a direct effect on behavioural intention to use. Behavioural intention to re-use is a measure of the strength of one's intention to perform a specified behaviour (Lean et al., 2009).

This result is not surprising since 54.2% of respondents have advanced experience in using computers and 59.8% of them have advanced experience in using the Internet. Therefore, participants' knowledge about how to use computers and the way the Internet works may encourage individuals to consider the idea of e-government portals favourably and superior to the traditional ways of visiting the government offices and waiting in queues to receive information and services. Consequently, individuals have the propensity to develop a positive attitude toward using e-government portals. The findings imply that individuals are most likely to re-use e-government portals based on favourable attitude towards such portals.

H7_b: Perceived usefulness has a positive influence on the behavioural intention to re-use an e-government portal

The term perceived usefulness means an individual's belief as to what extent using e-government portals is beneficial compared to the traditional ways of receiving government information and services. According to Venkatesh and Morris (2000), "A significant body of research supports the role of perceived usefulness as a strong determinant of user intentions and usage behaviour over time".

Perceived usefulness was found to have a significant positive influence on behavioural intention to re-use e-government portals. This result is consistent with previous research of IS acceptance (e.g. Moon and Kim, 2001; Park and Kim, 2014). According to the TAM (Davis et al. (1989), perceived usefulness has a direct effect on behavioural intention to use. Further, Park and Kim (2014), stated that perceived usefulness had the strongest effect on behavioural intention to re-use.

8.4.1.5 Determinant of Actual Use

H9 : Behavioural intention to re-use has a positive influence on the actual use of an e-government portal.

Behavioural intention was found to have a significant positive effect on individuals' actual use of e-government portals. This result actually coincides with previous studies found in the technology acceptance literature. TAM originally hypothesizes that, actual systems use is directly determined by behavioural intention to re-use (Davis et al., 1989; Lee, 2009). In the context of e-government learning, Shyu and Huang (2011) found that a behavioural intention to re-use is a significant determinant of the actual usage. e-Government learning refers to the use of web-based technologies by governments to facilitate learning about relatively new subjects which are relevant to citizens (Shyu and Huang, 2011). This finding is consistent with Lin et al.'s (2011) study which was conducted in the context of e-government in Gambia. Lin et al. (2011) stated, "[A] citizen's actual use of e-government system was influenced by their behavioural intentions to use".

8.4.1.6 Determinant of User Satisfaction

H10_a : Actual use has a positive influence on user satisfaction with an e-government portal

The findings show that actual use of e-government portals was found to have a significant positive effect on user satisfaction. This finding is in line with what has been reported in the literature of empirical testing of the DeLone and McLean (2003) updated IS success model. In fact, this IS success model originally hypothesises that, actual system use directly affects user satisfaction (DeLone and McLean, 2003). In the context of e-government websites, Wang and Liao (2008) found that actual use of e-government websites had a positive direct effect on user satisfaction. This is in line with the finding of the present study.

H1_c : System quality has a positive influence on user satisfaction with an e-government portal

H2_c : Information quality has a positive influence on user satisfaction with an e-government portal

H3_c : Service quality has a positive influence on user satisfaction with an e-government portal

Moreover, system quality, information quality and service quality are found to have a significant positive effect on user satisfaction. This result is consistent with many IS studies conducted in different contexts. In fact, DeLone and McLean (2003) theorize a direct link from system quality, information quality and service quality to user satisfaction. Almutairi and Subramanian (2005) found that system quality and information quality exhibited a significant positive effect on user satisfaction.

According to Schaupp et al. (2009), information quality is, “a prominent success factor when investigating overall IS success”. In the context of e-government, Wang and Liao (2008) and Floropoulos et al. (2010) found that information quality exhibited a stronger effect than system and service quality on user satisfaction. In the present study, system quality had a stronger effect than information and service quality.

8.4.1.7 Determinants of Net benefits

H10_b : Actual use has a positive influence on net benefits of an e-government portal

H11: User Satisfaction has a positive influence on net benefits of an e-government portal

Actual use of e-government portals is found to have a significant positive influence on net benefits. This finding is consistent with Wang and Liao (2008). The main purpose of Wang and Liao's (2008) study was to develop and examine a multidimensional e-government system success model using the IS success model of DeLone and McLean (2003). Indeed, there is a direct link from actual use and user satisfaction to net benefits as theorized by DeLone and McLean (2003) in the updated IS success model.

Wang and Liao (2008) found that actual use of e-government websites had a strong direct effect on the net benefits. The current study found that the effect of actual use on net benefits is stronger than the effect of user satisfaction on net benefits. This finding coincides with Wang and Liao's (2008) findings. According to Wang and Liao (2008), "use exerts a stronger direct effect than user satisfaction on perceived net benefit".

DeLone and McLean (2004) stated that net benefits is the most important measure in the IS success model. Net benefits is the overall impacts of a system in use (DeLone and McLean, 2003). The result is not surprising since e-government portals can deliver a wide range of advantages to individuals. These benefits range from saving time and money to protecting and preserving the environment.

8.4.2 Personal Values-Attitude-Behaviour Model

A personal values-attitude-behaviour model was adopted to examine the role of personal values in the context of e-government (see Figure 8.4). The SEM analysis results revealed that conservative values were significantly related to attitudes toward using e-government portals. Individuals' attitude toward using e-government portals was a strong and direct predictor of behaviour intention to re-use e-government portals and mediated the relationship between personal values (i.e. conservation and openness to change constructs) and behavioural intention to re-use.

As discussed in Chapter 6, the value-attitude-behaviour model was proposed by Homer and Kahle (1988) and is deemed to be part of the TAM which was introduced by (Davis Jr, 1986). The present study successfully re-specified and validated the value-attitude-behaviour model in the context of e-government portals in Saudi Arabia, using openness to change and conservation related personal values of Schwartz (1992), re-specifying the measures of some constructs within this model, and providing empirical support for the re-specified value-attitude-behaviour model.

In the personal values effects model, hypotheses *H12*, *H13* and *H14* were tested. *H12* and *H13* represent the relationship between conservation and openness to change which are directly linked to the attitude toward using e-government portals. *H14* represents the link between attitude and behaviour intention to re-use.

The findings revealed that e-government portals' users place stronger emphasis on conservation (i.e. tradition and security value types), which is more likely to lead to a favourable attitude toward using these portals. The findings confirm that the effect of openness to change (i.e. stimulation and self-direction) is not notable on attitude toward

using e-government portals. Further, behavioural intention to re-use is strongly affected by attitude in the context of the present model as well.

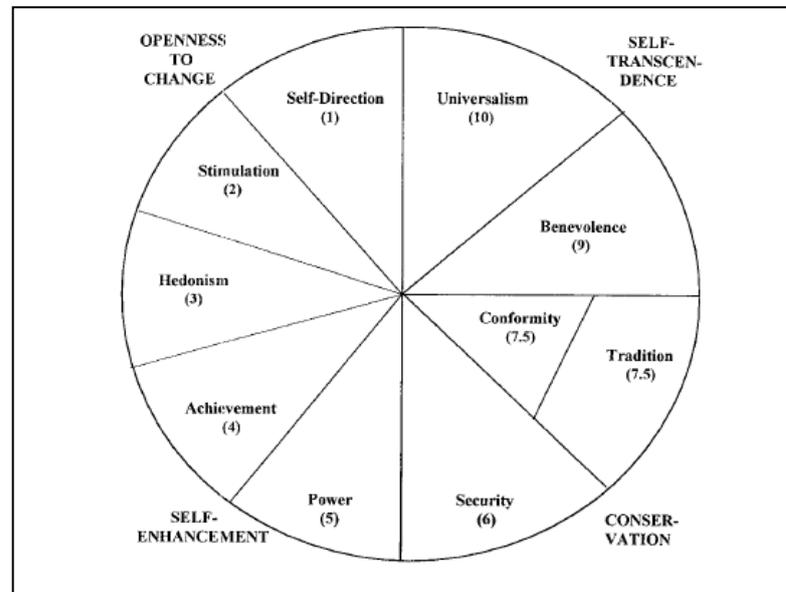


Figure 8.5: Theoretical model of circumplex structure of relations among 10 values of Schwartz (1992) (Source: (Schwartz et al., 2001))

The findings can be explained in two ways. First, Schwartz et al. (2001) stated, “the conflicts and congruities among all the values yield an integrated structure”. Conservatism versus openness to change opposes stimulation and self-direction values to tradition and security values (Schwartz et al., 2001). Schwartz et al. (2001) assume that value types that are presented at the opposite end of the theoretical model of the circumplex structure (see Figure 8.5 taken from (Schwartz et al., 2001)) are in conflicting relations to each other. To some extent, this finding supports the above assumption by Schwartz et al. (2001) that having an effect of conservation and non-effect of openness to change on attitude towards use.

Second, the positive effect of conservatism on individuals’ attitude towards using e-government portals can be justified in general and in particular perspectives. From a general perspective, conservative people will have a positive attitude towards using e-government portals. This is a generalized statement, which is based on the empirical evidence revealed by findings. The empirical evidence states that, Saudi individuals who seek security and stability in society, and commitment to religion and traditions have a positive attitude toward using e-government portals.

Actually, this finding contradicts with one of the comments made by an expert of the Delphi study (see Chapter 7). This expert envisaged that, a person who may score high

on the tradition value might not accept the use of e-government portals and prefer to receive government services in the traditional way by visiting their offices.

The reason for the positive link between conservation and attitude to use may still need further investigation, but it may be due to the fact that using and interacting with computers in general and the Internet in particular has become one of the traditions of Saudi society. The average age of the participants, the education level, the experience of using computers and the Internet is the strong evidence for positive attitude towards using e-government portals. This positive tendency towards e-government was indeed indicated earlier in the exploratory study (see Chapter 5). Many participants are in favour of receiving all e-services online and avoid visiting the government agencies' offices to complete transactions when possible.

In recent years, individuals' trust in the Internet technologies has increased remarkably (Srivastava and Teo, 2009). Srivastava and Teo (2009) indicated that trust in the Internet technologies is a major facilitator for the acceptance and usage of e-government portals by individuals. Most participants in (Srivastava and Teo, 2009) found the Internet to be trustworthy, although some of them show security concerns. However, these security concerns are not high in the context of e-government portals in Saudi Arabia. This can be interpreted as Saudi society believing that using e-government portals is relatively secure and there is no national threat to the security of the country when using them.

Also, as the e-government systems increase in the level of transparency (Irani et al., 2012), participants in the present study might believe that the transparency resulting from using e-government portals may stabilise the government and therefore increase the national security. Griffin and Halpin (2005) asked for, "improving the transparency of government, making it more accountable to its stake holders". Bannister and Connolly (2011) argued that transparency "leads to, or even is fundamental to, trust and/or trustworthiness". Trust in government affects citizens' compliance with the political order (Barber, 1983).

With regard to religion, Saroglou et al. (2004) stated "Clearly, religious people, across a variety of contexts, tend to attribute high importance to conservation values (Tradition and Conformity) as well as low importance to hedonistic and openness to change values (Hedonism, Stimulation, and Self-Direction)". This might be interpreted as the religiosity of Saudi society since they score high on conservation values and low on openness to change values. However, being religious and positive towards using the e-government portals means that religiosity does not contradict using beneficial technologies.

Further, Saroglou et al. (2004) identified a positive association between religion and benevolence. This might lead to an argument that using e-government portals is an act of benevolence or a tendency to help or do well to others. This is because the provision of e-government is an act by government agencies to help individuals, make their life easier and save them time, effort and money. Therefore, being religious will encourage the use of e-government portals to receive government services rather than old traditional services.

8.5 Summary

The main purpose of this chapter was to provide the empirical test of the proposed framework for understanding of e-government portals' success. The proposed framework consists of two models: e-government portals' success model and personal values-attitude-behaviour model. The empirical test of the proposed framework is a focal part of this research which was conducted in response to a call from many researchers for the continuous advancement of IS success research, especially within the context of e-government.

This chapter validated a comprehensive and multidimensional framework of e-government systems' success, which consists of two models. The e-government success model consists of twelve constructs: system quality, information quality, service quality, perceived risk, computer self-efficacy, perceived usefulness, perceived ease of use, attitude toward using, behavioural intention to re-use, actual use, user satisfaction and net benefits. The personal values effects' model consists of four constructs: openness to change, conservation, attitude toward using, behavioural intention to re-use.

The findings of hypothesis testing suggested that e-government portal success (net benefit) was directly affected by actual use and user satisfaction and indirectly affect by a number of factors concerning system quality, service quality, information quality, perceived risk, and computer self-efficacy. By combining IS success model and TAM, this study found system quality, information quality and service quality affected the perceived ease of use, but service quality had no effect on perceived usefulness. However, perceived risk seemed to have no effect on attitudes towards using, but very small negative effect on perceived usefulness. Users' computer skills was found to have no effect on perceived ease of use and very small effect on perceived usefulness. These indicate that risk and IT skills are playing less significant role in the context of e-government. The research findings confirmed that adoption was not equivalent to success, but it was the necessary precondition to success.

In the personal values-attitude-behaviour model, the empirical evidence suggested that conservation affects attitude towards use which, in turn, affects behavioural intention to re-use. Openness to change had no effect on attitude toward using.

This chapter presented the e-government success model and personal values effects' model with key determinants that influence e-government portals' success. In the light of the previous discussion, the next chapter re-visits the research objectives and discusses the research contribution to knowledge and implications for research and practice. The limitations and suggestions for future research are also provided.

9 Conclusion

This final chapter summarizes the main research findings derived from the previous discussions. It starts by providing an overview of research process and methodology. Then, research aim and objectives were revisited. It also highlights the original contribution to knowledge. After that, practical and academic implications are discussed. This is followed by discussing the limitations of the current research. Finally, directions for future research are presented.

9.1 Research Aim and Objectives Revisited

The study sought to develop a better understanding on e-government portals' success from the individual user's perspective with the following specific objectives:

1. To understand the current research and debate on IS success, e-government portals success, and other research fields that are relevant to this study, thus, to identify the research gaps.
2. To explore the perceptions, ideas and thoughts of individuals (i.e. e-government users) in Saudi Arabia to determine what factors/measures affect the success of e-government portals.
3. To develop a theoretical framework and hypothesis on e-government success that is established upon reviewing the literature and the exploratory study.
4. To understand the impact of personal values on e-government success.
5. To examine and validate the conceptual framework at the individual's level using large scale survey in the context of Saudi Arabia's e-government.
6. To provide implications for future research and practice.

9.2 Overview of Research Process and Methodology

To achieve the aims and objectives, this research commences with a literature review and continues with a gradual development of the conceptual framework. In total, the research process consisted of three main stages with regard to data collection. First, an exploratory study was carried out as the first stage towards accomplishing this research. The objective was to explore the main aspects and factors to understand e-government systems success. This exploratory study was conducted in the context of the Saudi government. Second, a Delphi study was conducted to investigate the correlation between e-government portals success and the ten distinct value types identified by Schwartz (1992). The objective of this Delphi study was to investigate which of the ten

value types are particularly relevant or have a significant impact on e-government portals' success. Third, a survey-based study was carried out to validate empirically the proposed theoretical framework. Figure 9.1 below illustrates how the three phases of data collection are linked with each other and how they led to the outcome of this research.

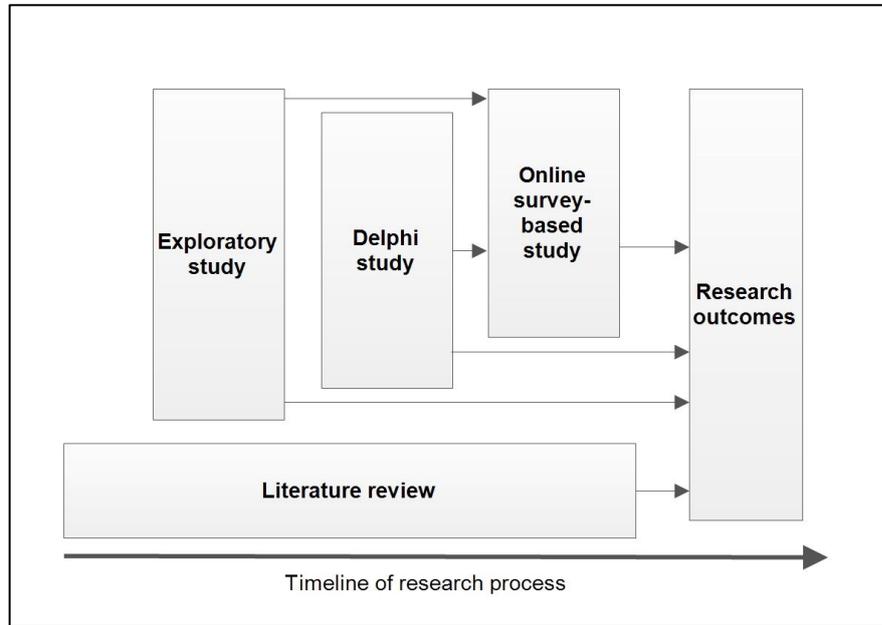


Figure 9.1: Timeline of research process

In the initial stages of reviewing the literature, the updated IS success model of DeLone and McLean (2003) and TAM of Davis (1989) were considered. However, it became clear, especially after conducting the exploratory study (see Chapter 5), that, some important aspects which arguably influence the success of e-government portals are missing. Examples of those aspects are: self-efficacy, perceived risk and culture. Thus, it was decided that the updated IS success model of DeLone and McLean (2003) is not sufficient and additional constructs need to be considered in the suggested conceptual framework to understand e-government success.

The exploratory study was conducted to explore the main aspects/issues and factors to evaluate e-government systems success. The study has been conducted in the context of the Saudi government. To achieve this aim, interviews were conducted with 49 Saudi citizens to explore their perceptions of e-government systems and their success.

The interviewees who participated in the exploratory study were varied in their demographic information. The responses of the interviewees helped to identify the factors and establish a preliminary framework for understanding e-government success. The study objectives have been achieved and the findings reveal many issues regarding the factors that affect e-government systems success. Furthermore, it is worth mentioning

that, many factors proposed by this study to influence the success of e-government systems converge with the core quality dimensions of DeLone and McLean's IS success model (2003). Information quality, system quality and service quality were among the top ten factors that affect e-government success, as identified by respondents (see Chapter 5 for more details).

Subsequently, a conceptual framework was proposed which uses different theories/models (see Chapter 6). This theoretical framework integrates the updated IS success model of DeLone and McLean (2003), Technology Acceptance Model (TAM) of (Davis et al., 1989), self-efficacy and perceived risk. Also, culture issues have been taken into consideration by using personal values theory introduced by Schwartz (1992).

The suggested framework consisted of two models. The first model is the e-government portals' success model, which comprised of twelve constructs: system quality, information quality, service quality, perceived risk, self-efficacy, perceived ease of use, perceived usefulness, attitude towards using, behaviour intention to use/re-use, user satisfaction, and perceived net benefit. The second model is personal values-attitude-behaviour model, which comprised of four constructs: openness to change, conservation, attitude toward using and behaviour intention to re-use (see Chapter 6 and Chapter 7 for more information).

Second, a Delphi study was conducted. This study aimed to explore the relevance of personal values to the e-government success from an individual's perspective. The ten basic values identified by Schwartz (1992) were used. A Delphi study was carried out with a group of experts from different fields to identify the most relevant personal values to e-government success. The findings suggest that four of the ten values, namely Self-direction, Security, Stimulation, and Tradition, most likely affect the intention to use/re-use. The findings provide a basis for finalizing the generated theoretical framework, for validation using a large-scale survey data gathered from Saudi Arabia (see Chapter 7 for more details).

Third, the survey-based study was conducted using large scale-survey data collected from e-government users in Saudi Arabia. The study aimed to validate the proposed framework. This framework is the output of reviewing literature and the studies conducted as the focal part of this research. The survey questionnaire served to achieve the aim of this study. It has been tested via 214 valid responses. Structural Equation Modelling (SEM) techniques were applied to the collected data. The findings suggest that combination of the updated IS success model of DeLone and McLean (2003) and TAM of Davis (1989) can be further extended by integrating other constructs (see Chapter 8 for more details).

This study arrived at the conclusion of asserting the applicability of the theories/models used and models to understand the success of e-government portals. The outcome from analysing the data collected in the online survey questionnaire can be used in enhancing existing e-government portals or when implementing a new e-government portal. The conclusion and recommendations drawn from this research will be useful to overcome the obstacles or mistakes facing the development of successful e-government portals. Also, it can be considered as reference for future development of e-government portals in Saudi Arabia.

9.3 Explanation on How the Study has met its Objectives

This research succeeded in achieving its aim and objectives as explained below.

- Objective 1 was to understand the current research and debate on IS success, e-government success, relevant theories/models, and other research fields that are relevant to this study, thus, to identify the research gaps. This objective is addressed first by reviewing the literature of IS and e-government success (see Chapter 2) and second, by reviewing the literature of culture and personal values (see Chapter 3).
- Objective 2 was to explore the perceptions, ideas and thoughts of individuals (i.e. e-government users) in Saudi Arabia to determine what factors/measures affect the success of e-government portals. This objective was met by conducting an exploratory study in which the e-government users were asked about their perceptions towards e-government systems in general and Saudi e-government in particular (see Chapter 5). The exploratory study investigates the citizens' perception about factors and measures affecting the success of e-government systems in Saudi Arabia. The findings reveal many issues regarding issues and the factors that influence e-government systems success.
- Objective 3 was to develop a conceptual framework and hypotheses that is established upon reviewing the literature and conducting the exploratory study. This objective was met by reviewing literature (see Chapters 2 and 3) and conducting an exploratory study (see Chapter 5). The framework integrates and extends theories and models from the traditional IS success theories/models and from other disciplines. The insights drawn from objectives one and two by synthesizing findings of the exploratory study with the previous theoretical and empirical research, lead to the development of conceptual framework (see Chapter 6).
- Objective 4 was to understand the impact of personal values on e-government portals success. This objective was investigated by a Delphi study. This study examines the

relevance of individual-level value types to the e-government success. It was carried out with a group of experts in two rounds to identify the most relevant personal values to the e-government success. The ten basic values identified by Schwartz (1992) were used. The Delphi study is explained in Chapter 7.

- Objective 5 was to examine and validate the conceptual framework at the individual's level using large-scale survey data. This objective was met through an online survey-based study that was conducted in the context of Saudi Arabia e-government. The survey-based study is presented in Chapter 8.
- Objective 6 was to provide implications and directions for future research and practice. This objective was met by discussing the findings of each stage in this study and by drawing the conclusion at the end of the body of this thesis. The conclusion is presented in this chapter.

9.4 Contributions to Knowledge

This study attempts to significantly add to the body of knowledge and practice of e-government in general and e-government in developing countries and the Arab world in particular. The research sheds light on e-government portals' success by considering the individuals' perspective. It mainly examined the literature of IS and e-government success around the world in order to better understand e-government success and the potential factors behind this success.

DeLone and McLean (1992) stress the importance of the contribution of well-defined measures in IS contexts, "If information systems research is to make a contribution to the world of practice, a well-defined outcome measure (or measures) is essential". As the e-government portals are a type of IS and a new application of IT, this argument might be applied to e-government research as this study provides a well-defined measure for understanding e-government portals' success. In summary, the originality of this research and its contributions can be highlighted in the following sections.

9.4.1 Generation of New Knowledge in the Field of e-Government

▪ Exploring factors Influencing e-Government Success in Saudi e-government context

Many factors that affect the success of e-government systems identified by the exploratory study converge with the core quality constructs of DeLone and McLean's IS success model (2003). System quality, information quality and service quality were among factors that affect e-government success, as nominated by participants. Other factors which were highly ranked by the respondents were: computer literacy, security,

privacy, ease of use, continuous update of contents, the online delivery of all services and the ability to complete e-government services online without the need to visit the government agency office at any stage of receiving services.

Moreover, as all participants regarded the online banking services as the best e-services that they interact with in Saudi Arabia, this study uses some of the measurement items that participants considered them success factors in online banking (i.e. All services have to be delivered online, users does not need to visit the office at any stage to complete the service, security and privacy).

The measurement items used in the proposed framework of this study combine new and existing ones in the literature (see Chapter 8, Table 8.3). The new items suggested by the conducted exploratory study. The existing items are borrowed from well-known theories/models that have gained strong theoretical and empirical support. Further, those measures might be useful for e-government and applicable to be validated in other societies or cultures.

▪ **Developing and validating a framework for e-government portals' success**

Reviewing the literature of IS success and e-government evaluation revealed that there is a need to consider some major IS theories/models along with other theories from different research areas in order to establish a framework that is better to assess e-government portals' success form individuals' perspective. This framework integrates the revised DeLone and McLean IS success model, Technology Acceptance Model (TAM), self-efficacy theory and perceived risk. Also, culture issues have been taken into consideration by using personal values theory introduced by Schwartz (Schwartz, 1992).

The development of the theoretical framework which integrates various theories/models drawn from the literature of IS, e-government and other disciplines is the main contribution to knowledge and practice (see Chapter 6 for more details). This contribution opens the floodgates to further investigations by other researchers to reach the level of comprehension of evaluating e-government portals' success from an individual level and to test the framework in different societies and cultures.

The framework has been modified with regard to the relevant personal values to e-government portal success (see Chapter 7). This framework was tested in the context of e-government portals in Saudi Arabia using Structural Equation Modelling (SEM) (see Chapter 8). The framework testing includes the validation the PVQ version of Schwartz et

al. (2001) (i.e. self-direction, stimulation, security and tradition) in the context of Saudi Arabia.

The findings of hypothesis testing suggested that e-government portal success (net benefit) was directly affected by actual use and user satisfaction and indirectly affect by a number of factors concerning system quality, service quality, information quality, perceived risk, and computer self-efficacy. By combining IS model and TAM, this study found system quality, information quality and service quality affected the perceived ease of use, but service quality had no effect on perceived usefulness. Perceived ease of use, perceived usefulness and attitudes towards using affected behaviour intention to use which in turn affected actual use. User satisfaction was affected by system quality, information quality and service quality. However, perceived risk seemed to have no effect on attitudes towards using, but very small negative effect on perceived usefulness. Users' computer skills was found to have no effect on perceived ease of use and very small effect on perceived usefulness. These indicate that risk and IT skills are playing less significant role in the context of e-government. The research findings confirmed that adoption was not equivalent to success, but it was the necessary precondition to success.

▪ **Knowledge on how the culture factor represented by personal values manifest themselves in e-government portals' success**

Although personal values are considered to be applicable across contexts (Schwartz and Bilsky, 1987) and relatively stable throughout time (Rokeach, 1973), Schwartz (2006) stated that they are varied in their salience and relative importance within contexts and situations.

A Delphi study was conducted to investigate the correlation between e-government portal success and the ten distinct value types identified by Schwartz (1992). The objective of this Delphi study was to investigate which of the ten value types are particularly relevant to success or have a significant impact in the context of e-government portals. The results of the Delphi study suggest that four of the ten values, namely self-direction, stimulation, security, and tradition, most likely affect e-government portal success. Then, the proposed framework has been modified accordingly (see Chapter 7 for more details).

Therefore, one of the potential contributions of this study to the knowledge of the research presented here is, to investigate which value types are particularly relevant for e-government portals' success or have a significant impact in the context of e-government portals. Moreover, those identified value types chosen as the result of this

Delphi study are used in the proposed theoretical framework to examine to what extent and how those identified value types affect e-government portals' acceptance.

In the personal values effects' model, the empirical evidence suggested that conservation affects attitude towards use which, in turn, affects behavioural intention to re-use. Openness to change had no effect on attitude toward using.

9.4.2 Academic Implications

To the best of the researcher's knowledge, this is the first study that investigates the development of a framework that integrates constructs of IS adoption and success, and dimensions from other disciplines. By using established theories/models from different disciplines, this study is an attempt to apply rigorous research to a practical problem. Most studies of e-government websites look at the evaluation of e-government portals only from one perspective (i.e. adoption, success and the effect of other factors on them). Further, this is the first research that investigates the effects of personal values of Schwartz (1992) -identified in Chapter 7- on e-government by adopting values-attitude-behaviour hierarchy model (see Chapter 8).

In terms of theory building, the present study attempts to develop a framework by integrating different theories and models originated from different disciplines. The proposed framework –composed of two models– makes an important contribution to the emerging literature on e-government systems in general and portals in particular. The first model (i.e. government portals success model) consists of: system quality, information quality, service quality perceived risk, computer self-efficacy, perceived ease of use, perceived usefulness, attitude toward using, behavioural intention to re-use, actual use, user satisfaction and net benefits. The second model (i.e. personal values-attitude-behaviour on e-government model) consists of: openness to change, conservation, attitude toward using, and behaviour intention to re-use.

The first model aimed to understand the e-government portals success and the second model aimed to understand the influence of personal values on e-government. The models developed provide a foundation for further research in the region. Moreover, the validated research measurement items can serve as a base for further studies in e-government research, particularly in the context of the Middle East and Arab countries.

The present study contributes to the e-government adoption and success theories by understanding the extent to which some of the IS, e-government, culture and other disciplines' theories/models, can be adopted and empirically tested in developing countries such as Saudi Arabia. It has been shown, indeed, that the e-government

adoption and success attributes may not be regarded as equally important by e-government users in different countries.

The study findings revealed that, most of the hypotheses derived from various theories, are supported by the current study. The empirical results indicate that service quality is the only quality dimension that did not influence perceived usefulness. Other quality dimensions (i.e. information quality and system quality) are shown to be significant influential factors on perceived usefulness.

9.4.3 Practical Implications

The findings of this research shed light on some important issues related to e-government portals' success and effects of personal values on intention to reuse e-government. The results have several important implications for practitioners.

First, the quality antecedents (i.e. system quality, information quality and service quality) have shown strong influence on government portals' success. In recent years, government agencies work in open computing environments. In such environments, content, technical, aesthetic, and service quality characteristics have become important elements of the e-government systems, hence, deserving the concerns of government agencies interested to have presence online. In fact, the web revolution has encouraged many governments to implement and launch their portals to interact with their native citizens and expatriates. This triggers the need for government agencies to place extra emphasis on portals' attributes pertaining to these three dimensions.

Nonetheless, as can be evidenced from the results of the present research, it is not possible to develop successful e-government portals while ignoring one of its main contributing quality antecedents. The present study can offer guidelines and recommendations to managers seeking to enhance the quality of their e-government portals to align well with the preferences of the widest portion of users who look for ever-higher quality services. It has been illustrated that, it is crucial that developers should pay attention to the features of quality dimensions to gain individuals' positive impression toward these portals.

Second, the results indicate that user satisfaction is a valid measure of e-government portals success. In IS research, user satisfaction is generally considered to be a surrogate measure of success (Gatian, 1994). In the findings of this study, the three quality dimensions (i.e. system quality, information quality and service quality) show significant influence on user satisfaction. This means that positive experience with these quality dimensions will lead to greater user satisfaction. It suggests that e-government

agencies should consider achieving high user satisfaction by professionally implementing and updating e-government portals that provide high quality of systems, information, and services.

Third, findings indicate the importance of having systems, information and services that are easy to use. e-Government portal developers should make learning to operate portals easy for normal users. Also, getting to e-government portals to seek information or services should be an easy experience and there should be no difficulties to face users in such processes. Also, interaction with any service provided throughout a portal should be clear, easy to understand and flexible. The developers should also consider designing the portals in a way that enables users to become skillful easily when using those portals and the use of them should be easy to remember as well. Overall, portals should be designed to be easy to use.

Furthermore, government agencies should not only develop useful portals but they should also improve ease of use. Actually, ease of use is a very important aspect to all e-government users and particularly to those with lower computer self-efficacy. Also, as the findings revealed the importance of perceived usefulness as the most significant factor in e-government success, government agencies should continue developing their portals to have a competitive advantage (i.e. easier and quicker to do things with government than traditional services).

Forth, issues relating to personal values of Saudi members should be addressed very carefully to attract more participation in using e-government portals. As the findings revealed that Saudi society is conservative and its members positively tend to use e-government portals, government agencies should consider this characteristic of society when designing portals. For instance, e-government portals should be free of any act or information that might be understood as abusing traditions of Saudi society. Avoiding such things will positively influence more individuals to use e-government portals.

Finally, e-government users' awareness about e-government portals and its great benefits need to be publicized. Therefore, the Saudi e-government initiative program (i.e. the Yesser programme) and all government agencies that have launched their e-government portals online are required to conduct a comprehensive campaign about e-government benefits. This campaign shall promote and raises the importance of e-government to the nation and highlights its benefits and advantages. Media such as TV, radios and newspapers as well as the new generation of media such as social networks (e.g. Facebook and Twitter) can be used to promote and advertise e-government services. The e-government agencies should focus on the technical side, as well, to

enable these benefits. Net benefits will be acquired by individuals by implementing easy-to-use, risk-free and high quality websites.

9.5 Research Limitations

This research developed a framework to understand an e-government portals success and the effects of personal values on e-government portals acceptance. The proposed framework was drawn upon well-known theories and models from different disciplines. The framework has been validated using large-scale survey data collected from individuals in Saudi Arabia. However, like any other research, there are some limitations that should be acknowledged.

The first limitation is related to the sample of the exploratory study (see Chapter 5). The selection of respondents was not random, as convenience sampling was adopted due to the time constraints for collecting data, and thus the findings of the exploratory study may not be representative. Conducting interviews with employees in their workplaces in Saudi Arabia need some special permissions and this may take a long time to prepare. Therefore, participants with easy access to conduct interviews with them were selected. Also, the objective of the exploratory study in this research was not to derive population generalizability. This is, indeed, in line with Cai and Shannon's (2012) study as it employed convenience sampling because the objective of the study was not to derive population generalizability, but to derive theoretical generalizability.

The second limitation is related to the digital divide. The exploratory study elicited data from knowledgeable e-government users. However, there are other individuals who have weaker computer self-efficacy and lower levels of education who lack access to the Internet and e-government websites. Actually, it is beneficial to know the differences among these groups of individuals and these differences should be further explored. Also, digitally disadvantaged individuals may propose other factors that influence e-government success.

The third limitation is the usage of a relatively small sample size for conducting the SEM-based approach in the survey-based study. The overall model-fit would have benefited from a larger sample size. Also, it is worth mentioning that the high number of male respondents compared to female ones is one of the limitations. However, as Saudi society is built upon gender segregation, the percentage 28% of female participants is considered relatively good. This limitation might be due to the numbers of females who work in different sectors in Saudi Arabia being less than for males. It is recommended that further research be conducted to increase this figure, and consequently examine any differences from the results.

The fourth limitation is that, the impact of demographic variables: such as: age, gender, etc. , were not examined in this study. Actually, studies that adopt TAM or the updated D&M IS success model do not do so. However, Venkatesh et al. (2003) showed that social influences (e.g. subjective norms, voluntariness, performance and effort expectancy) and demographic variables have strong influences on user attitude and intention toward using a particular technology. Future studies may consider to investigating the effects of these variables on the research model.

The fifth limitation is the validation of the proposed framework in the context of Saudi Arabia only. However, the previous studies in the literature validate different models of e-government success or acceptance in the context of one specific country. This research thus follows what has been conducted previously and validates the proposed framework in the context of Saudi e-government. Nevertheless, it is important to validate this framework in other countries and employ diverse samples. Such countries can be one of the Gulf Cooperation Council (GCC) which has the same culture and values as Saudi Arabia. Also, it can be validated in different Middle Eastern Countries, Islamic countries, and Eastern and Western countries. According to Park and Kim (2014) commenting on selecting the sample for their study from South Korea only, “users from Western societies are likely to have individual and social experiences that may lead to different adoption patterns”. Therefore, the findings can be compared and greater generalizability can be achieved.

9.6 Directions for Future Research

The limitations of the study discussed above lead to some suggestions for future research. Although the findings of this study provide meaningful insights into the phenomenon under investigation, it might be useful to include other factors in the models to enhance our understanding of e-government portals' success and the personal values-attitude-behaviour. For instance, demographic information is suggested to be examined in future research. Individual differences such as age, gender, education and other demographic characteristics might be considered for investigation. The differences among different groups of e-government users should be further explored. This will contribute to better and clearer understanding of what how the respondents' characteristics moderate effects in both models.

Moreover, in regard of the aspect of the digital divide, future research should elicit perceptions from those individuals who are elderly people and persons who have lower levels income, lower levels of education, and poor knowledge about using computers and the Internet. It would be also interesting to conduct additional comparative studies that cover larger populations including remote and rural areas. In the future, it is important to

study e-government portals from different countries, varying in their quality and users' perceptions to allow for a richer cross-cultural investigation. To enhance the generalizability of the results, future research should consider respondents to be spread across Gulf Cooperation Council (GCC) and other Arab and Islamic countries in the Middle East. Further, it may be appropriate to validate the proposed framework in the present research in the context of various other countries.

Users' perceptions of e-government portals' quality may change significantly in the long-term, but not in the short-term. The current study investigation did not address this possibility. As the current research adopts a cross-sectional design, longitudinal research is recommended to examine the perceptions of e-government users at more than one time. Therefore, in future research endeavours, there may be a need to replicate similar investigations over time to understand e-government portals' success and effects of personal values on e-government intention to reuse. Future research should consider using longitudinal design to examine the hypothesis proposed for both models.

The proposed framework mainly focuses on e-government portals. Although e-government portals are the core of e-government systems, it would be recommended for future research to develop a more comprehensive framework suitable for assessing a wider range of e-government systems, such as: m-government systems.

The findings confirm that perceived ease of use has no effect on attitude toward using. Future research could explain and assure why perceived ease of use has no influence on attitude toward using e-government portals in the context of Saudi Arabia. Moreover, regarding the perceived risk factor, despite the findings revealing that perceived risk in the context of e-government portals success is an insignificant element; perceived risk in the Internet plays significant and important role. As mentioned earlier in Chapter 8, perceived risk has found to negatively affect perceived usefulness but not to influence attitude toward using e-government portals. Therefore, there is a need for further research to investigate and validate this result.

In a conservative society, such as Saudi society, it is crucial to know the role that gender plays in e-government portals adoption and success. Due to the social order of the country, which is based on gender segregation, and the under-representation of females in the current study, there is a need to consider gender issues in such studies. This will contribute to deeper understanding of acceptance and success of e-government portals by gender-type.

Finally, regarding the research methodology, the main study in the current research (i.e. the survey-based study) is a positivist quantitative approach. It would be suggested to

conduct further exploratory studies that adopt interpretive qualitative approaches to shed some light on the unexpected results and to increase understanding. These studies will extend knowledge about the phenomenon under investigation from a qualitative perspective. Such an approach may help to overcome some limitations and complement the findings of the present study. They may also reveal other factors that have been not presented by the current study.

Appendices

Appendix A: Research Ethics Scrutiny

UNIVERSITY OF BEDFORDSHIRE

Research Ethics Scrutiny (Annex to RS1 form)

SECTION A To be completed by the candidate

Registration No: 0925857

Candidate: Obaid Almalki

Degree of: PhD

Research Institute: BMRI/IRAC

Research Topic: Developing a Framework for Evaluating e-Government Portals' Success

External Funding: N/A

The candidate is required to summarise in the box below the ethical issues involved in the research proposal and how they will be addressed. In any proposal involving human participants the following should be provided:

- clear explanation of how informed consent will be obtained,
- how will confidentiality and anonymity be observed,
- how will the nature of the research, its purpose and the means of dissemination of the outcomes be communicated to participants,
- how personal data will be stored and secured
- if participants are being placed under any form of stress (physical or mental) identify what steps are being taken to minimise risk

If protocols are being used that have already received University Research Ethics Committee (UREC) ethical approval then please specify. Roles of any collaborating institutions should be clearly identified. Reference should be made to the appropriate professional body code of practice.

- ❖ Data will be gathered from e-government portals' users in the context of Saudi Arabia.
- ❖ Potential participants will be contacted via their organizations by emails which include the link for the online survey questionnaire.
- ❖ Collected data on questionnaires will be used for the purpose of this research only, saved securely and not be disclosed to anyone.
- ❖ The purpose of the study will be explained clearly to participants. Consent will be obtained from participants as they agree voluntarily to participate to the survey.
- ❖ Participants will not be requested to provide their identity neither any personal information. Also, the gathered data will be kept anonymously.
- ❖ Participants will not be placed under any form of stress and they will be clearly informed that their participation is voluntary and they can withdraw anytime throughout the study.
- ❖ Participation will remain confidential and the results will be used anonymously in aggregation form.
- ❖ All data will not be kept longer than it is needed. After the analysis and once the collected data is not needed, it will be deleted permanently

RECEIVED
10 JUN 2013
Signed by Dayou

Answer the following question by deleting as appropriate:

1. Does the study involve vulnerable participants or those unable to give informed consent (e.g. children, people with learning disabilities, your own students)?

No

If YES: Have/will Researchers be CRB checked?

Yes No

2. Will the study require permission of a gatekeeper for access to participants (e.g. schools, self-help groups, residential homes)?

No

3. Will it be necessary for participants to be involved without consent (e.g. covert observation in non-public places)?

No

4. Will the study involve sensitive topics (e.g. sexual activity, substance abuse)?

No

5. Will blood or tissue samples be taken from participants?

No

6. Will the research involve intrusive interventions (e.g. drugs, hypnosis, physical exercise)?

No

7. Will financial or other inducements be offered to participants (except reasonable expenses)?

No

8. Will the research investigate any aspect of illegal activity?

No

9. Will participants be stressed beyond what is normal for them?

No

10. Will the study involve participants from the NHS (e.g. patients) or participants who fall under the requirements of the Mental Capacity Act 2005?

No

If you have answered yes to any of the above questions or if you consider that there are other significant ethical issues then details should be included in your summary above. If you have answered yes to Question 1 then a clear justification for the importance of the research must be provided.

*Please note if the answer to Question 10 is yes then the proposal should be submitted through **NHS research ethics approval procedures** to the appropriate **NRES**. The UREC should be informed of the outcome.

Checklist of documents which should be included:

Project proposal (with details of methodology) & source of funding	√
Documentation seeking informed consent (if appropriate)	
Information sheet for participants (if appropriate)	
Questionnaire (if appropriate)	√

(Tick as appropriate)

Signature of Applicant: Signature hidden for reason of privacy Date: 7/5/2013

Signature of Director of Studies: Signature hidden for reason of privacy Date: 07-05-2013

This form together with a copy of the research proposal should be submitted to the Research Institute Director for consideration by the Research Institute Ethics Committee/Panel

Note you cannot commence collection of research data until this form has been approved

SECTION B To be completed by the Research Institute Ethics Committee:

Comments: *No Ethical Issue Identified.*

Approved

Signature Chair of Research Institute Ethics Committee:

Signature hidden for reason of privacy

Date: *10 June 2013*

Signature hidden for reason of privacy

This form should then be filed with the RS1 form

If in the judgement of the committee there are significant ethical issues for which there is not agreed practice then further ethical consideration is required before approval can be given and the proposal with the committees comments should be forwarded to the secretary of the UREC for consideration.

There are significant ethical issues which require further guidance

Signature Chair of Research Institute Ethics Committee:

Date:

This form together with the recommendation and a copy of the research proposal should then be submitted to the University Research Ethics Committee

Appendix B.1: Delphi Study Invitation Email

Invitation Email

Delphi Study–First Round

Dear [Expert Name],

Many governments around the world have invested heavily into the e-government systems. They have been making significant efforts to provide information and services online. However, previous research shows that countries are varied in the rate of adoption and success of e-government portals.

In this Delphi study, I am going to investigate the correlation between e-government portals' success and the ten distinct value types identified by Schwartz (1992). This Delphi study is one the main stages of my PhD research. The success of e-government portals in this PhD research is discussed from individuals' perspective in terms of use, user satisfaction, and perceived net benefits.

Having reviewed the literature on e-government, websites evaluation, culture and personal values, you have been selected one of the experts for this survey. Your views and feedback on this important issue will be crucial and could contribute to the understanding of relevance of the personal values to the e-government portals' success. I would be very grateful for your support.

This Delphi study might be conducted in one or few rounds until the group of experts will converge towards consensus. I would be grateful if you participate in this whole process. If, for any reason, you can not participate, please could you forward this email to another person who may also be in a suitable position to participate in this study?

Please complete the form in one of the following ways no later than 6th January 2013:

1. Fill the attached questionnaire to this email, or:
2. Fill the online questionnaire at:

<https://docs.google.com/spreadsheet/viewform?formkey=dE45d1J3eHZiUzhKWjJ3Zmt5Nm5xbUE6MA>

Your participation will remain confidential and the results will be used anonymously in aggregation form. The summary report of this first round of the Delphi study will be sent to you by email.

If you need any additional information or have questions, please do not hesitate to contact me at the email mentioned below. Thank you very much for your time and cooperation.

Sincerely,

Obaid Almalki
PhD student at BMRI/IRAC
University of Bedfordshire
Email: obaid.almalki@beds.ac.uk



Appendix B.2: Delphi Study Questionnaire - First Round

Relevance of the Personal Values to e-Government Portals' Success Delphi Study - First Round

1. Instructions:

This section provides information on how to participate in this Delphi study. Please read it before proceeding to the other sections of this questionnaire. The following explains what other sections of this questionnaire is intended to be:

- Section 2 - provides details about this Delphi study.
- Section 3 - requires some basic information about you as participant.
- Section 4 - requires you to tick **no more than five value types**. These selected values by you, should be:
 - **particularly relevant**
 - **may have a significant impact on:**
e-government portals' success.
- Section 5 - gives explanation about value types under investigation. Please refer to this section while you are filling this questionnaire.

Thank you very much for your time and effort. I really appreciate your participation to this research. I would be grateful ***if you return this questionnaire before 6th January 2013***. If you have any questions, please do not hesitate to contact me at my email address: obaid.almalki@beds.ac.uk



University of
Bedfordshire

2. Study background:

Electronic government (e-government) is broadly defined by Srivastava and Teo (2007) as, “the use of information and communication technologies (ICTs) and the Internet to enhance the access to and delivery of all facets of government services and operations for the benefit of citizens, businesses, employees, and other stakeholders”.

In this Delphi study, the investigation of the correlation between e-government portals success and the ten distinct value types identified by Schwartz (1992) is one of the focal points in my PhD research at the University of Bedfordshire, United Kingdom. The success of e-government portals in this PhD research is discussed from individuals’ perspective in terms of individuals’ use, user satisfaction, and perceived net benefits.

Values were defined by Rokeach (1973) and Schwartz (1992) as cognitive representations of desirable, abstract goals. Personal values can influence the behaviours of individuals in various aspects of life. The ten basic values identified by Schwartz (1992) have the strength of including all the core values that are widely recognized in various cultures in the world (Schwartz, 2009).

The aim of this Delphi study is to investigate which value types are particularly relevant for e-government portals’ success or have a significant impact in the context of e-government portals; those values which will be decided as the result of this Delphi study will be used later in my PhD research to examine to what extent and how those identified value types affect e-government portals’ success.

The Delphi method is used when the researcher might have reached a point where there is no historical data or knowledge about the researched topic. This method can be conducted by designing a questionnaire and distribute it to a panel of experts in the relevant field/(s). It could be done in more than one round. After each round, the responses from experts in questionnaires are analysed by the researcher and sent back to them for the reconsideration of their opinions in the light of the analysis of all responses. This goes on a loop until the experts reach acceptable degree of consensus. In the field of information systems (IS) research, the Delphi method has been widely used by researchers and proven to be popular (Brancheau et al., 1996; Holsapple and Joshi, 2002).

3. Respondent Information:

Please check that your name and email address are correctly listed here and update them where necessary. Please also state your job title and select your areas of expertise and the type of organization/employment you are working in:

Your Name	<input type="text"/>
Job title	<input type="text"/>
Type of organization/employment	<input type="checkbox"/> Universities <input type="checkbox"/> Other types of educational institutions <input type="checkbox"/> e-Government providers/practitioners/consultants <input type="checkbox"/> Other (Please specify: <input type="text"/>)
Area of expertise	<input type="checkbox"/> Information systems and related areas <input type="checkbox"/> e-government and related areas <input type="checkbox"/> Culture/values and related areas <input type="checkbox"/> Other (Please specify: <input type="text"/>)
Email	<input type="text"/>

Table1. Respondent information

**4. Relevance of value types to e-government portals' success:**

Value type	Particularly relevant to/ having an impact on e-government portals success <u>(PLEASE TICK NO MORE THAN FIVE VALUES)</u>	Explanation <i>(Justify your selection of the value type)</i>
Power	<input type="checkbox"/>	
Achievement	<input type="checkbox"/>	
Hedonism	<input type="checkbox"/>	
Stimulation	<input type="checkbox"/>	
Self-direction	<input type="checkbox"/>	
Universalism	<input type="checkbox"/>	
Benevolence	<input type="checkbox"/>	
Tradition	<input type="checkbox"/>	
Conformity	<input type="checkbox"/>	
Security	<input type="checkbox"/>	

Table2. Relevance of value types to e-government portals success



5. Basic Value Types Definitions

This section is included as a reference for the respondent to get the required knowledge about what value types are. The following table lists the ten individual-level values types identified by Schwartz (1992) in the first column and its definition and explanation in the second column. These definitions have been taken from Schwartz and Boehnke (2004) and the explanations are taken from Changingminds.org (2012). The third column lists and defines the value instruments of each value taken from the survey of Schwartz (1992):

Value type	Definition/Explanation	Measurement Items
Power	<p>Definition: Social status and prestige, control or dominance over people and resources.</p> <p>Explanation: “This takes value from social status and prestige. The ability to control others is important and power will be actively sought through dominance of others and control over resources.”</p>	<ul style="list-style-type: none"> ▪ Social Power: control over others, dominance ▪ Authority: the right to lead or command ▪ Wealth: material possessions, money ▪ Preserving my Public Image: protecting my “face” ▪ Social Recognition: respect approval by others
Achievement	<p>Definition: Personal success through demonstrating competence according to social standards.</p> <p>Explanation: “Value here come from setting goals and then achieving them. The more challenge, the greater the sense of achievement. When others have achieved the same thing, status is reduced and greater goals are sought.”</p>	<ul style="list-style-type: none"> ▪ Successful: achieving goals ▪ Capable: competent, effective, efficient ▪ Ambitious: hardworking, aspiring ▪ Influential: having an impact on people or events ▪ Intelligent: logical, thinking ▪ Self-Respect: belief in one’s own worth
Hedonism	<p>Definition: Pleasure or sensuous gratification for oneself.</p> <p>Explanation: “Hedonist simply enjoy themselves. The seek pleasure above all things and may, according to the view of others, sink into debauchery.”</p>	<ul style="list-style-type: none"> ▪ Pleasure: gratification of desires ▪ Enjoying life: enjoying food, sex, leisure, etc.
Stimulation	<p>Definition: Excitement, novelty, and challenge in life.</p> <p>Explanation: “The need for stimulation is close to hedonism, though the goal is slightly different. Pleasure here come more specifically from excitement and thrills and a person with this driver is more likely to be found doing extreme sports than propping up a bar.”</p>	<ul style="list-style-type: none"> ▪ Daring: seeking adventure, risk ▪ a Varied Life: filled with challenge, novelty, and change ▪ an Exciting Life: stimulating experiences
Self-direction	<p>Definition: Independent thought and action—choosing, creating, exploring.</p> <p>Explanation: “Those who seek self-direction enjoy being independent and outside the control of others. They prefer freedom and may have a particular creative or artistic bent, which they seek to indulge whenever possible.”</p>	<ul style="list-style-type: none"> ▪ Creativity: uniqueness, imagination ▪ Freedom: freedom of action and thought ▪ Independent: self-reliant, self sufficient ▪ Curious: interested in everything, exploring ▪ Choosing own goals: selecting own purposes ▪ Self-respect: belief in one’s own worth

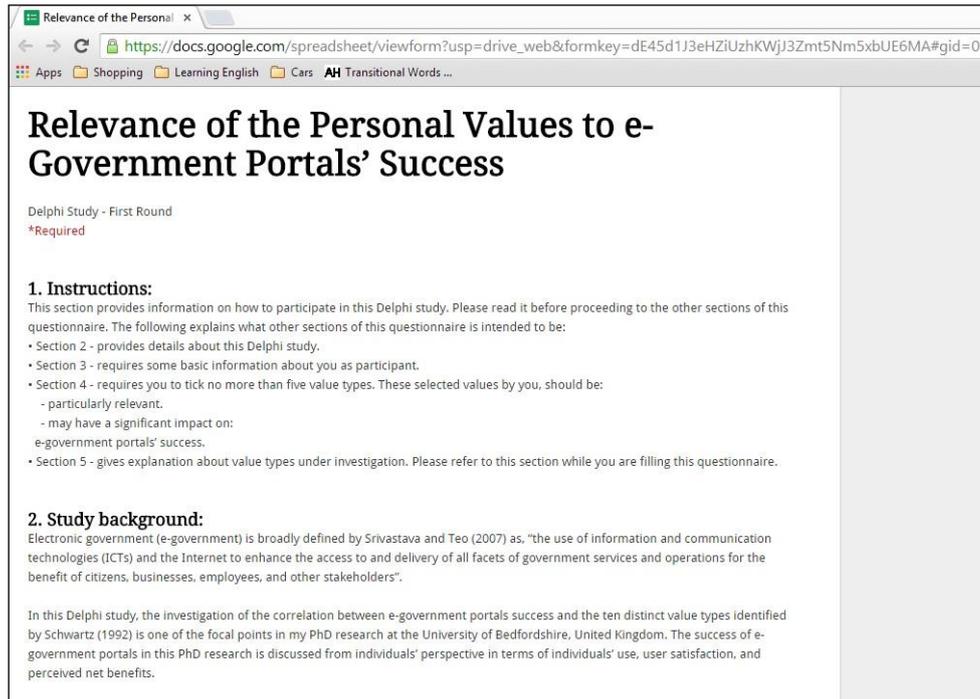
Continued		
Value type	Definition/Explanation	Measurement Items
Universalism	<p>Definition: Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.</p> <p>Explanation: “The universalist seeks social justice and tolerance for all. They promote peace and equality and find war anathema except perhaps in pursuit of lasting peace.”</p>	<ul style="list-style-type: none"> ▪ Broadminded: tolerant of different ideas and beliefs ▪ Wisdom: a mature of understanding life ▪ Social justice: correcting injustice, care for the weak ▪ Equality: equal opportunity for all ▪ A World of peace: free of war and conflict ▪ A World of beauty: beauty of nature and the arts ▪ Unity with nature: fitting into nature ▪ Protecting the environment: preserving nature
Benevolence	<p>Definition: Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.</p> <p>Explanation: “These who tend towards benevolence are very giving, seeking to help others and provide general welfare. They are the ‘earth mothers’ who nurture all.”</p>	<ul style="list-style-type: none"> ▪ Helpful: working for the welfare of others ▪ Honest: genuine, sincere ▪ Forgiving: willing to pardon others ▪ Loyal: faithful to my friends, groups ▪ Responsible: dependable, reliable ▪ True friendship: close, supportive friends ▪ Mature love: deep emotional & spiritual intimacy
Tradition	<p>Definition: Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide.</p> <p>Explanation: “The traditionalist respects that which has gone before, doing things simply because they are customary. They are conservatives in the original sense, seeking to preserve the world order as is. Any change makes them uncomfortable.”</p>	<ul style="list-style-type: none"> ▪ Humble: modest, self-effecting ▪ Accepting my portion in life: submitting to life circumstances ▪ Devout: holding to religious faith and belief ▪ Respect for tradition: preservation of time-honoured customs ▪ Moderate: avoiding extremes of feeling and action
Conformity	<p>Definition: Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.</p> <p>Explanation: “The person who values conformity seeks obedience to clear rules and structures. They gain a sense of control through doing what they are told and conforming to agreed laws and statutes.”</p>	<ul style="list-style-type: none"> ▪ Politeness: courtesy, good manners ▪ Obedience: dutiful, meeting obligations ▪ Self-discipline: self-restrain, resistance to temptation ▪ Honouring parents and elders: showing respect
Security	<p>Definition: Safety, harmony, and stability of society, of relationships, and of self.</p> <p>Explanation: “Those who seeks security seek health and safety to a greater degree than other people (perhaps because of childhood woes). Though they may worry about the potential of military force, they welcome the comfort that their existence brings.”</p>	<ul style="list-style-type: none"> ▪ Family security: safety for loved ones ▪ National security: protection of my nations from enemies ▪ Social order: stability of society ▪ Clean: neat, tidy ▪ Reciprocation of favours: avoidance of indebtedness ▪ Sense of belonging: feeling that others care about me ▪ Healthy: not being sick physically or mentally

Table3. Explanation of basic value types

**References:**

- Brancheau, J. C., Janz, B. D. & Wetherbe, J. C. 1996. Key issues in information systems management: 1994-95 sim delphi results. *MIS quarterly*, 20, 225-242.
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- Holsapple, C. W. & Joshi, K. D. 2002. Knowledge manipulation activities: Results of a delphi study. *Information & Management*, 39, 477.
- Rokeach, M. 1973. *The nature of human values*, New York: Free press.
- Schwartz, S. H. 1992. *Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries*, New York:, Academic Press.
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Appendix B.3: Screenshots of the Online Questionnaire - First Round



Relevance of the Personal Values to e-Government Portals' Success

Delphi Study - First Round
*Required

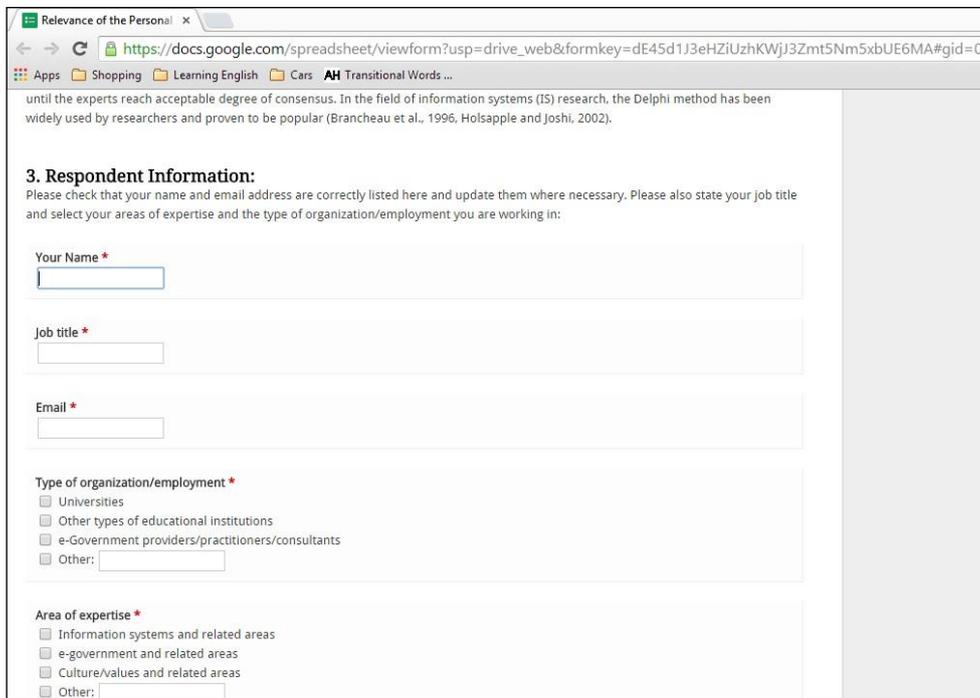
1. Instructions:
This section provides information on how to participate in this Delphi study. Please read it before proceeding to the other sections of this questionnaire. The following explains what other sections of this questionnaire is intended to be:

- Section 2 - provides details about this Delphi study.
- Section 3 - requires some basic information about you as participant.
- Section 4 - requires you to tick no more than five value types. These selected values by you, should be:
 - particularly relevant.
 - may have a significant impact on: e-government portals' success.
- Section 5 - gives explanation about value types under investigation. Please refer to this section while you are filling this questionnaire.

2. Study background:
Electronic government (e-government) is broadly defined by Srivastava and Teo (2007) as, "the use of information and communication technologies (ICTs) and the Internet to enhance the access to and delivery of all facets of government services and operations for the benefit of citizens, businesses, employees, and other stakeholders".

In this Delphi study, the investigation of the correlation between e-government portals success and the ten distinct value types identified by Schwartz (1992) is one of the focal points in my PhD research at the University of Bedfordshire, United Kingdom. The success of e-government portals in this PhD research is discussed from individuals' perspective in terms of individuals' use, user satisfaction, and perceived net benefits.

Screenshot of the online questionnaire for the first round -1-



until the experts reach acceptable degree of consensus. In the field of information systems (IS) research, the Delphi method has been widely used by researchers and proven to be popular (Brancheau et al., 1996, Holsapple and Joshi, 2002).

3. Respondent Information:
Please check that your name and email address are correctly listed here and update them where necessary. Please also state your job title and select your areas of expertise and the type of organization/employment you are working in:

Your Name *

Job title *

Email *

Type of organization/employment *

Universities

Other types of educational institutions

e-Government providers/practitioners/consultants

Other: _____

Area of expertise *

Information systems and related areas

e-government and related areas

Culture/values and related areas

Other: _____

Screenshot of the online questionnaire for the first round -2-

Appendix B.4: Delphi Study Reminder Email – First Round

First Reminder Email

Delphi Study–First Round

Dear [Expert Name],

I am writing this email to kindly remind you about the voluntary participation in this Delphi study. Your response will contribute to the success of my PhD study and I will be grateful if you would participate. The deadline for participation has been extended to 21st January 2013.

Thank you very much in advance for your cooperation.

Kind regards

Obaid Almalki
PhD student at BMRI/IRAC
University of Bedfordshire
United Kingdom

Last Reminder Email

Delphi Study–First Round

Dear [Expert Name],

This is only a kind reminder to participate in this Delphi Study. Please accept my apologies for sending you this last reminder.

However, I have received very low response rate and would appreciate your response very much. Participation in this Delphi study may take about 15-20 minutes.

I will be very grateful if you can participate. Your participation will contribute to the success of this Delphi study and to my PhD research.

Please complete the questionnaire in one of the following ways no later than 7th February 2013:

1. Fill the attached questionnaire to this email, or:
2. Fill the online questionnaire at:

<https://docs.google.com/spreadsheet/viewform?formkey=dE45d1J3eHZiUzhKWjJ3Zmt5Nm5xbUE6M>
[A](#)

Thank you very much in advance for your cooperation and may I take this opportunities to thank you for your time.

Kind regards,

Obaid Almalki
PhD student at BMRI/IRAC
University of Bedfordshire

Appendix B.5: Delphi Study Invitation Email - Second Round

Dear [Expert Name],

Many thanks for your time and contribution to the first round Delphi survey. I have received 11 responses and I am grateful for your valuable feedback.

Now I have compiled all the responses and I am presenting you with the summary results. I would be very grateful if you could fill in the second round (and very likely the final round) of the survey.

The short questionnaire of the second round requires you to re-consider your choice by comparing your opinions with other experts in Table 1 below. **It will only take you less than 5 minutes and I would be grateful if you reply before 22 February 2012**. Table 1 provides a summary of the results obtained from the first round.

Value type	Selecting value types as particularly relevant to/ having an impact of e-government portal's success		Your first round selection
	Total number of respondents: 11		
	No. of responses	Percentage	
Self-direction	9	82%	√
Stimulation	7	64%	√
Security	7	64%	
Tradition	5	45%	√
Conformity	5	45%	
Achievement	4	36%	
Hedonism	4	36%	
Power	4	36%	
Universalism	3	26%	These two value types will be removed from the second round of this Delphi study
Benevolence	1	9%	

Table1. The first round results

Please click on the link below and **RANK NO MORE THAN FIVE VALUES from (1 - 5)**, where 1 = least relevant, and 5 = most relevant:

https://docs.google.com/forms/d/1_TMjpEAU4dWetBgaPmYGjR7wlWe8zv2j566WU0pjoTo/viewform

These selected values should be:

- particularly relevant to (either positively or negatively)
- may have a significant impact on:
e-government portals' success.

For your information, an explanation about value types under investigation is provided at the end.

Please note that it is essential to receive responses from all experts participated in the first round. Otherwise, the Delphi results may not be valid.

○ Basic Value Types Definitions:

This section is included as a reference for the respondent to get the required knowledge about what value types are. The following table lists the ten individual-level values types identified by Schwartz (1992) in the first column and its definition and explanation in the second column. These definitions have been taken from Schwartz and Boehnke (2004) and the explanations are taken from Changingminds.org (2012). The third column lists and defines the value instruments of each value type taken from the survey of Schwartz (1992):

Value type	Definition/Explanation	Measurement Items
Power	<p>Definition: Social status and prestige, control or dominance over people and resources.</p> <p>Explanation: “This takes value from social status and prestige. The ability to control others is important and power will be actively sought through dominance of others and control over resources.”</p>	<ul style="list-style-type: none"> ▪ Social Power: control over others, dominance ▪ Authority: the right to lead or command ▪ Wealth: material possessions, money ▪ Preserving my Public Image: protecting my “face” ▪ Social Recognition: respect approval by others
Achievement	<p>Definition: Personal success through demonstrating competence according to social standards.</p> <p>Explanation: “Value here come from setting goals and then achieving them. The more challenge, the greater the sense of achievement. When others have achieved the same thing, status is reduced and greater goals are sought.”</p>	<ul style="list-style-type: none"> ▪ Successful: achieving goals ▪ Capable: competent, effective, efficient ▪ Ambitious: hardworking, aspiring ▪ Influential: having an impact on people or events ▪ Intelligent: logical, thinking ▪ Self-Respect: belief in one’s own worth
Hedonism	<p>Definition: Pleasure or sensuous gratification for oneself.</p> <p>Explanation: “Hedonist simply enjoy themselves. The seek pleasure above all things and may, according to the view of others, sink into debauchery.”</p>	<ul style="list-style-type: none"> ▪ Pleasure: gratification of desires ▪ Enjoying life: enjoying food, sex, leisure, etc.
Stimulation	<p>Definition: Excitement, novelty, and challenge in life.</p> <p>Explanation: “The need for stimulation is close to hedonism, though the goal is slightly different. Pleasure here come more specifically from excitement and thrills and a person with this driver is more likely to be found doing extreme sports than propping up a bar.”</p>	<ul style="list-style-type: none"> ▪ Daring: seeking adventure, risk ▪ a Varied Life: filled with challenge, novelty, and change ▪ an Exciting Life: stimulating experiences
Self-direction	<p>Definition: Independent thought and action—choosing, creating, exploring.</p> <p>Explanation: “Those who seek self-direction enjoy being independent and outside the control of others. They prefer freedom and may have a particular creative or artistic bent, which they seek to indulge whenever possible.”</p>	<ul style="list-style-type: none"> ▪ Creativity: uniqueness, imagination ▪ Freedom: freedom of action and thought ▪ Independent: self-reliant, self sufficient ▪ Curious: interested in everything, exploring ▪ Choosing own goals: selecting own purposes ▪ Self-respect: belief in one’s own worth

Universalism	<p>Definition: Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.</p> <p>Explanation: “The universalist seeks social justice and tolerance for all. They promote peace and equality and find war anathema except perhaps in pursuit of lasting peace.”</p>	<ul style="list-style-type: none"> ▪ Broadminded: tolerant of different ideas and beliefs ▪ Wisdom: a mature of understanding life ▪ Social justice: correcting injustice, care for the weak ▪ Equality: equal opportunity for all ▪ A World of peace: free of war and conflict ▪ A World of beauty: beauty of nature and the arts ▪ Unity with nature: fitting into nature ▪ Protecting the environment: preserving nature
Benevolence	<p>Definition: Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.</p> <p>Explanation: “These who tend towards benevolence are very giving, seeking to help others and provide general welfare. They are the ‘earth mothers’ who nurture all.”</p>	<ul style="list-style-type: none"> ▪ Helpful: working for the welfare of others ▪ Honest: genuine, sincere ▪ Forgiving: willing to pardon others ▪ Loyal: faithful to my friends, groups ▪ Responsible: dependable, reliable ▪ True friendship: close, supportive friends ▪ Mature love: deep emotional & spiritual intimacy
Tradition	<p>Definition: Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide.</p> <p>Explanation: “The traditionalist respects that which has gone before, doing things simply because they are customary. They are conservatives in the original sense, seeking to preserve the world order as is. Any change makes them uncomfortable.”</p>	<ul style="list-style-type: none"> ▪ Humble: modest, self-effecting ▪ Accepting my portion in life: submitting to life circumstances ▪ Devout: holding to religious faith and belief ▪ Respect for tradition: preservation of time-honoured customs ▪ Moderate: avoiding extremes of feeling and action
Conformity	<p>Definition: Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.</p> <p>Explanation: “The person who values conformity seeks obedience to clear rules and structures. They gain a sense of control through doing what they are told and conforming to agreed laws and statutes.”</p>	<ul style="list-style-type: none"> ▪ Politeness: courtesy, good manners ▪ Obedience: dutiful, meeting obligations ▪ Self-discipline: self-restrain, resistance to temptation ▪ Honouring parents and elders: showing respect
Security	<p>Definition: Safety, harmony, and stability of society, of relationships, and of self.</p> <p>Explanation: “Those who seeks security seek health and safety to a greater degree than other people (perhaps because of childhood woes). Though they may worry about the potential of military force, they welcome the comfort that their existence brings.”</p>	<ul style="list-style-type: none"> ▪ Family security: safety for loved ones ▪ National security: protection of my nations from enemies ▪ Social order: stability of society ▪ Clean: neat, tidy ▪ Reciprocation of favours: avoidance of indebtedness ▪ Sense of belonging: feeling that others care about me ▪ Healthy: not being sick physically or mentally

**Appendix B.6: Delphi Study Questionnaire - Second Round****Relevance of the Personal Values to e-Government Portals' Success
Delphi Study - Second Round**

Dear [Participant]

Many thanks for your time and contribution to the first round Delphi survey. I have received 11 responses and I am grateful for your valuable feedback.

Now I have compiled all the responses and I am presenting you with the summary results. I would be very grateful if you could fill in the second round (and very likely the final round) of the survey. The short questionnaire of the second round requires you to re-consider your choice by comparing your opinions with other experts in Table 1 below. **It will only take you less than 5 minutes.** Table1 provides a summary of the results obtained from the first round.

Value type	Selecting value types as particularly relevant to/ having an impact of e-government portal's success		Your first round selection
	Total number of respondents: 11		
	No. of responses	Percentage	
Self-direction	9	82%	
Stimulation	7	64%	
Security	7	64%	
Tradition	5	45%	
Conformity	5	45%	
Achievement	4	36%	
Hedonism	4	36%	
Power	4	36%	
Universalism	3	26%	These two value types will be removed from the second round of this Delphi study
Benevolence	1	9%	

Table1. The first round results

Please click on the link below and **RANK NO MORE THAN FIVE VALUES from (1 - 5), where 1 = least relevant, and 5 = most relevant:**

https://docs.google.com/forms/d/1_TMjpEAU4dWetBgaPmYGjR7wWe8zv2j566WU0pjoTo/viewform

These selected values should be:

- particularly relevant to (either positively or negatively)
- may have a significant impact on:

e-government portals' success.

For your information, an explanation about value types under investigation is provided at the end.

Please note that it is essential to receive responses from all experts participated in the first round. Otherwise, the Delphi results may not be valid.

○ **Basic Value Types Definitions:**

This section is included as a reference for the respondent to get the required knowledge about what value types are. The following table lists the ten individual-level values types identified by Schwartz (1992) in the first column and its definition and explanation in the second column. These definitions



have been taken from Schwartz and Boehnke (2004) and the explanations are taken from Changingminds.org (2012). The third column lists and defines the value instruments of each value type taken from the survey of Schwartz (1992):

Value type	Definition/Explanation	Measurement Items
Power	<p>Definition: Social status and prestige, control or dominance over people and resources.</p> <p>Explanation: “This takes value from social status and prestige. The ability to control others is important and power will be actively sought through dominance of others and control over resources.”</p>	<ul style="list-style-type: none"> ▪ Social Power: control over others, dominance ▪ Authority: the right to lead or command ▪ Wealth: material possessions, money ▪ Preserving my Public Image: protecting my “face” ▪ Social Recognition: respect approval by others
Achievement	<p>Definition: Personal success through demonstrating competence according to social standards.</p> <p>Explanation: “Value here come from setting goals and then achieving them. The more challenge, the greater the sense of achievement. When others have achieved the same thing, status is reduced and greater goals are sought.”</p>	<ul style="list-style-type: none"> ▪ Successful: achieving goals ▪ Capable: competent, effective, efficient ▪ Ambitious: hardworking, aspiring ▪ Influential: having an impact on people or events ▪ Intelligent: logical, thinking ▪ Self-Respect: belief in one’s own worth
Hedonism	<p>Definition: Pleasure or sensuous gratification for oneself.</p> <p>Explanation: “Hedonist simply enjoy themselves. The seek pleasure above all things and may, according to the view of others, sink into debauchery.”</p>	<ul style="list-style-type: none"> ▪ Pleasure: gratification of desires ▪ Enjoying life: enjoying food, sex, leisure, etc.
Stimulation	<p>Definition: Excitement, novelty, and challenge in life.</p> <p>Explanation: “The need for stimulation is close to hedonism, though the goal is slightly different. Pleasure here come more specifically from excitement and thrills and a person with this driver is more likely to be found doing extreme sports than propping up a bar.”</p>	<ul style="list-style-type: none"> ▪ Daring: seeking adventure, risk ▪ a Varied Life: filled with challenge, novelty, and change ▪ an Exciting Life: stimulating experiences
Self-direction	<p>Definition: Independent thought and action—choosing, creating, exploring.</p> <p>Explanation: “Those who seek self-direction enjoy being independent and outside the control of others. They prefer freedom and may have a particular creative or artistic bent, which they seek to indulge whenever possible.”</p>	<ul style="list-style-type: none"> ▪ Creativity: uniqueness, imagination ▪ Freedom: freedom of action and thought ▪ Independent: self-reliant, self sufficient ▪ Curious: interested in everything, exploring ▪ Choosing own goals: selecting own purposes ▪ Self-respect: belief in one’s own worth

<p>Universalism</p>	<p>Definition: Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.</p> <p>Explanation: “The universalist seeks social justice and tolerance for all. They promote peace and equality and find war anathema except perhaps in pursuit of lasting peace.”</p>	<ul style="list-style-type: none"> ▪ Broadminded: tolerant of different ideas and beliefs ▪ Wisdom: a mature of understanding life ▪ Social justice: correcting injustice, care for the weak ▪ Equality: equal opportunity for all ▪ A World of peace: free of war and conflict ▪ A World of beauty: beauty of nature and the arts ▪ Unity with nature: fitting into nature ▪ Protecting the environment: preserving nature
<p>Benevolence</p>	<p>Definition: Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.</p> <p>Explanation: “These who tend towards benevolence are very giving, seeking to help others and provide general welfare. They are the ‘earth mothers’ who nurture all.”</p>	<ul style="list-style-type: none"> ▪ Helpful: working for the welfare of others ▪ Honest: genuine, sincere ▪ Forgiving: willing to pardon others ▪ Loyal: faithful to my friends, groups ▪ Responsible: dependable, reliable ▪ True friendship: close, supportive friends ▪ Mature love: deep emotional & spiritual intimacy
<p>Tradition</p>	<p>Definition: Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide.</p> <p>Explanation: “The traditionalist respects that which has gone before, doing things simply because they are customary. They are conservatives in the original sense, seeking to preserve the world order as is. Any change makes them uncomfortable.”</p>	<ul style="list-style-type: none"> ▪ Humble: modest, self-effecting ▪ Accepting my portion in life: submitting to life circumstances ▪ Devout: holding to religious faith and belief ▪ Respect for tradition: preservation of time-honoured customs ▪ Moderate: avoiding extremes of feeling and action
<p>Conformity</p>	<p>Definition: Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.</p> <p>Explanation: “The person who values conformity seeks obedience to clear rules and structures. They gain a sense of control through doing what they are told and conforming to agreed laws and statutes.”</p>	<ul style="list-style-type: none"> ▪ Politeness: courtesy, good manners ▪ Obedience: dutiful, meeting obligations ▪ Self-discipline: self-restrain, resistance to temptation ▪ Honouring parents and elders: showing respect
<p>Security</p>	<p>Definition: Safety, harmony, and stability of society, of relationships, and of self.</p> <p>Explanation: “Those who seeks security seek health and safety to a greater degree than other people (perhaps because of childhood woes). Though they may worry about the potential of military force, they welcome the comfort that their existence brings.”</p>	<ul style="list-style-type: none"> ▪ Family security: safety for loved ones ▪ National security: protection of my nations from enemies ▪ Social order: stability of society ▪ Clean: neat, tidy ▪ Reciprocation of favours: avoidance of indebtedness ▪ Sense of belonging: feeling that others care about me ▪ Healthy: not being sick physically or mentally

Table2. Explanation of the basic value types



University of
Bedfordshire

○ **References:**

Changingminds.org. 2012. *Schwartz's value inventory* [Online]. Available: http://changingminds.org/explanations/values/schwartz_inventory.htm#so [Accessed 09 November 2012 2012].

Schwartz, S. H. 1992. *Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries*, New York:, Academic Press.

Schwartz, S. H. & Boehnke, K. 2004. Evaluating the structure of human values with confirmatory factor analysis. *Journal of Research in Personality*, 38, 230-255.

Appendix B.7: Screenshots of the Online Questionnaire - Second Round

A screenshot of a Google Forms questionnaire titled "Relevance of the Personal Values to e-Government Portals' Success". The form is part of a "Delphi Study - Second Round" and is marked as "*Required". The first section, "1. Respondent Information", contains a "Your Name:" label and an empty text input field. The second section, "2. Relevance of value types to e-government portals' SUCCESS:", includes a note: "Please RANK NO MORE THAN FIVE VALUES from (1 - 5), where 1 = least relevant, and 5 = most relevant". Below this, there are two labels, "Self-direction" and "Stimulation", each followed by an empty text input field. The browser's address bar shows the URL: "https://docs.google.com/forms/d/1_TMjpEAU4dWetBgaPmYGjR7wlWe8zv2j566WU0pjoTo/viewform".

Screenshot of the online questionnaire for the second round -1-

A screenshot of the same Google Forms questionnaire, showing the bottom section. It features five labels: "Security", "Tradition", "Conformity", "Achievement", and "Hedonism", each with an empty text input field. Below these is a "Power" label with an empty text input field. A blue "Submit" button is positioned below the "Power" field. A warning message reads: "Never submit passwords through Google Forms." At the bottom, it states "Powered by Google Forms" and includes a disclaimer: "This content is neither created nor endorsed by Google." with links for "Report Abuse", "Terms of Service", and "Additional Terms". The browser's address bar shows the same URL as the previous screenshot.

Screenshot of the online questionnaire for the second round -2-

Appendix B.8: Delphi Study Reminder Email – Second Round

Dear [Expert Name],

I am writing this email to kindly remind you about the participation in this second round (and very likely the final round) of the Delphi study. The deadline for participation has been extended to 1st March 2013.

Please note that, it is essential to receive responses from all experts participated in the first round. Otherwise, the Delphi results may not be valid.

Thank you very much in advance for your cooperation.

Kind regards,

Obaid Almalki

Appendix C.1: Pre-notification Email for the Online-Survey Questionnaire

مدير إدارة الحاسب الآلي/تقنية المعلومات

السلام عليكم ورحمة الله وبركاته

أود إفادتكم بأنني حاليا أقوم بتطوير إطار (Framework) لتقييم البوابات الإلكترونية (مواقع الإنترنت) للحكومة الإلكترونية. وسيتم اختبار هذا الإطار في سياق دراسة لتقييم البوابات الإلكترونية للجهات الحكومية بالمملكة العربية السعودية. وهذه الدراسة هي جزء من بحثي بمرحلة الدكتوراه بجامعة بدفوردرشير بالمملكة المتحدة.

وسوف أقوم خلال الأيام القليلة القادمة بمشيئة الله بدعوتكم للمشاركة في هذه الدراسة وذلك بطلب تعبئة الاستبيان من قبل جميع منسوبي هذه الجهة الحكومية الراغبين في المشاركة. وسيتم تحليل هذه البيانات بأحدث الطرق العلمية باستخدام البرامج الإحصائية المعده لذلك لمعرفة العوامل التي تؤثر في نجاح البوابات الإلكترونية للحكومة الإلكترونية. وستعود هذه الدراسة بالفائدة على الجهات الحكومية بالمملكة وذلك بتقييم بواباتها الإلكترونية ومعرفة العوامل التي تؤدي إلى نجاحها.

وفي حالة وجود اي استفسارات لديكم، أرجو التواصل معي على اي من عناوين الاتصال الموضحة ادناه.

أشكر لكم مقدما تعاونكم لإنجاح هذه الدراسة وتقبلوا مني خالص التقدير والاحترام،،

والسلام عليكم،،

الباحث/ عبيد بن علي المالكي
جامعة بدفوردرشير - المملكة المتحدة

بريد إلكتروني: obaid.almalki@study.beds.ac.uk

Appendix C.2: Invitation Email for the Online-Survey Questionnaire

السلام عليكم ورحمة الله وبركاته

أود إفادتكم بأنني حاليا اقوم بتطوير إطار (Framework) لتقييم البوابات الإلكترونية (مواقع الإنترنت) للحكومة الإلكترونية. وسيتم اختبار هذا الإطار في سياق دراسة لتقييم البوابات الإلكترونية للجهات الحكومية بالمملكة العربية السعودية. وهذه الدراسة هي جزء من بحثي بمرحلة الدكتوراه بجامعة بدفوردشير بالمملكة المتحدة.

وأود دعوتكم للمشاركة في هذه الدراسة وذلك بطلب تعبئة الاستبيان من قبل جميع منسوبي هذه المنشأة وذلك على أحد الروابط التالية:

- لتعبئة الاستبيان باللغة العربية:

https://bedsbusiness.eu.qualtrics.com/SE/?SID=SV_bEDlypHPazmBlkh

- أو لتعبئة الاستبيان باللغة الانجليزية:

https://bedsbusiness.eu.qualtrics.com/SE/?SID=SV_4Pfr4g8XtbWJVaj

وسيتم تحليل هذه البيانات بأحدث الطرق العلمية باستخدام البرامج الإحصائية المعده لذلك لمعرفة العوامل التي تؤثر في نجاح البوابات الإلكترونية للحكومة الإلكترونية. وستعود هذه الدراسة بالفائدة على الجهات الحكومية بالمملكة وذلك بتقييم بواباتها الإلكترونية ومعرفة العوامل التي تؤدي إلى نجاحها.

وفي حالة وجود اي استفسارات لديكم، أرجو التواصل معي على اي من عناوين الاتصال الموضحة ادناه.

أشكر لكم مقدما تعاونكم لإنجاح هذه الدراسة وتقبلوا مني خالص التقدير والاحترام،،

والسلام عليكم،،

الباحث/ عبيد بن علي المالكي
جامعة بدفوردشير - المملكة المتحدة

بريد إلكتروني: obaid.almalki@study.beds.ac.uk

Appendix C.3: Survey Questionnaire – Female (English Version)

Evaluating e-Government Portals in Saudi Arabia from Individuals' Perspective Survey

Thank you very much for taking time to participate in this study. The main purpose of this questionnaire is to evaluate the e-government portals in Saudi Arabia from the individuals' perspective which is one of the focal points in my PhD research at the University of Bedfordshire, United Kingdom.

If you are a Saudi national or if you currently reside in Saudi Arabia and have used one of the e-government portals before, then you are invited to complete this questionnaire.

This questionnaire will require approximately 15-20 minutes to complete. The data given will provide useful information for the researcher, literature review and Saudi Arabia government organisations and private sector companies who develop e-government systems.

Participants will remain anonymous since no personal information or IP addresses will be collected. Also, the information collected in this survey will remain confidential and will be only reported in an aggregated form. Participation is strictly voluntary and you may choose to withdraw at any time. Completion and submission of the questionnaire will indicate your willingness to participate in this study.

If you require additional information or have questions, please contact me at one of the contact details below. Thank you again and I appreciate your cooperation.

Obaid Almalki
PhD researcher
University of Bedfordshire
United Kingdom
Email: obaid.almalki@study.beds.ac.uk

Personal Values (PV)	Not like me at all 1	Not like me 2	A little like me 3	Some-what like me 4	Like me 5	Very much like me 6
5. It is important to her to make her own decisions about what she does. She likes to be free to plan and to choose her activities for herself.	<input type="checkbox"/>					
6. It is very important to her that her country be safe. She thinks the state must be on watch against threats from within and without.	<input type="checkbox"/>					
7. She likes to take risks. She is always looking for adventures.	<input type="checkbox"/>					
8. Religious belief is important to her. She tries hard to do what her religion requires.	<input type="checkbox"/>					
9. It is important to her that things be organized and clean. She really does not like things to be a mess.	<input type="checkbox"/>					
10. She thinks it's important to be interested in things. She likes to be curious and to try to understand all sorts of things.	<input type="checkbox"/>					
11. She thinks it is best to do things in traditional ways. It is important to her to keep up the customs she has learned.	<input type="checkbox"/>					
12. She likes surprises. It is important to her to have an exciting life.	<input type="checkbox"/>					
13. She tries hard to avoid getting sick. Staying healthy is very important to her.	<input type="checkbox"/>					
14. It is important to her to be independent. She likes to rely on herself.	<input type="checkbox"/>					
15. Having a stable government is important to her. She is concerned that the social order be protected.	<input type="checkbox"/>					
16. It is important to her to be humble and modest. She tries not to draw attention to herself.	<input type="checkbox"/>					

Part 3. Evaluating e-government portals in Saudi Arabia from individuals' perspective

In this part, the purpose is to understand your perception about one of the e-government portals in Saudi Arabia. Use the provided scale of 1 to 5, where 1 means that you strongly disagree and 5 means that you strongly agree (i.e. 1- strongly disagree, 2- disagree, 3- neither agree or disagree, 4-

Appendix C.4: Survey Questionnaire – Male (English Version)

Evaluating e-Government Portals in Saudi Arabia from Individuals' Perspective Survey

Thank you very much for taking time to participate in this study. The main purpose of this questionnaire is to evaluate the e-government portals in Saudi Arabia from the individuals' perspective which is one of the focal points in my PhD research at the University of Bedfordshire, United Kingdom.

If you are a Saudi national or if you currently reside in Saudi Arabia and have used one of the e-government portals before, then you are invited to complete this questionnaire.

This questionnaire will require approximately 15-20 minutes to complete. The data given will provide useful information for the researcher, literature review and Saudi Arabia government organisations and private sector companies who develop e-government systems.

Participants will remain anonymous since no personal information or IP addresses will be collected. Also, the information collected in this survey will remain confidential and will be only reported in an aggregated form. Participation is strictly voluntary and you may choose to withdraw at any time. Completion and submission of the questionnaire will indicate your willingness to participate in this study.

If you require additional information or have questions, please contact me at one of the contact details below. Thank you again and I appreciate your cooperation.

Obaid Almalki
PhD researcher
University of Bedfordshire
United Kingdom
Email: obaid.almalki@study.beds.ac.uk

Personal Values (PV)	Not like me at all 1	Not like me 2	A little like me 3	Some-what like me 4	Like me 5	Very much like me 6
5. It is important to him to make his own decisions about what he does. He likes to be free to plan and to choose his activities for himself.	<input type="checkbox"/>					
6. It is very important to him that his country be safe. He thinks the state must be on watch against threats from within and without.	<input type="checkbox"/>					
7. He likes to take risks. He is always looking for adventures.	<input type="checkbox"/>					
8. Religious belief is important to him. He tries hard to do what his religion requires.	<input type="checkbox"/>					
9. It is important to him that things be organized and clean. He really does not like things to be a mess.	<input type="checkbox"/>					
10. He thinks it's important to be interested in things. He likes to be curious and to try to understand all sorts of things.	<input type="checkbox"/>					
11. He thinks it is best to do things in traditional ways. It is important to him to keep up the customs he has learned.	<input type="checkbox"/>					
12. He likes surprises. It is important to him to have an exciting life.	<input type="checkbox"/>					
13. He tries hard to avoid getting sick. Staying healthy is very important to him.	<input type="checkbox"/>					
14. It is important to him to be independent. He likes to rely on herself.	<input type="checkbox"/>					
15. Having a stable government is important to him. He is concerned that the social order be protected.	<input type="checkbox"/>					
16. It is important to him to be humble and modest. He tries not to draw attention to himself.	<input type="checkbox"/>					

Part 3. Evaluating e-government portals in Saudi Arabia from individuals' perspective

In this part, the purpose is to understand your perception about one of the e-government portals in Saudi Arabia. Use the provided scale of 1 to 5, where 1 means that you strongly disagree and 5 means that you strongly agree (i.e. 1- strongly disagree, 2- disagree, 3- neither agree or disagree, 4-

Appendix C.5: Survey Questionnaire – Female (Arabic Version)**استبيان تقييم بوابات الحكومة الإلكترونية للجهات الحكومية بالمملكة العربية السعودية
(من وجهة نظر المستخدمين)**

السلام عليكم ورحمة الله وبركاته

في البداية أود أن أشكرك لإعطاء جزء من وقتك لتعبئة هذا الاستبيان. إن الغرض من الاستبيان هو تقييم البوابات الإلكترونية (مواقع الإنترنت للجهات الحكومية) بالمملكة العربية السعودية وذلك من وجهة نظر المستخدم. وتعد هذه الدراسة جزء مهم من بحثي بمرحلة الدكتوراه في جامعة بدفوردشير بالمملكة المتحدة.

سواء كنت مواطنة أو مقيمة بالمملكة العربية السعودية و سبق لك استخدام أحد مواقع الإنترنت للجهات الحكومية فأنت مدعوه للمشاركة في هذه الدراسة و تعبئة الاستبيان. تستغرق تعبئة هذا الاستبيان **15-20** دقيقة تقريباً، وستكون البيانات المدخلة ذات أهمية كبيرة بالنسبة للباحث، والدراسات التي تخص الحكومة الإلكترونية وأيضاً الجهات الحكومية و مؤسسات القطاع الخاص المهتمة بتطوير أنظمة الحكومة الإلكترونية.

وستبقى هوية المشاركين غير معروفه حيث أنه لن يتم جمع اي بيانات شخصية او عناوين IP. و ستحفظ جميع البيانات بشكل آمن و سنتم عرضها بشكل اجمالي فقط. وتعتبر المشاركة في هذه الدراسة اختيارية ويعتبر اكمال وتسليم هذا الاستبيان رغبة منك للمشاركة في هذه الدراسة.

وفي حالة وجود اي استفسارات لديك، أرجو التواصل معي على اي من عناوين الاتصال الموضحة ادناه.

أشكر لكي مقدما تعاونكي لإنجاح هذه الدراسة وتقبلي مني خالص التقدير والاحترام،،
والسلام عليكم،،

الباحث/ عبید بن علی المالکی
جامعة بدفوردشير – المملكة المتحدة

بريد إلكتروني: obaid.almalki@study.beds.ac.uk

الجزء الأول: المعلومات الديموغرافية:

1. العمر <input type="text"/>	4. المستوى التعليمي <input type="checkbox"/> الثانوي فأقل <input type="checkbox"/> دبلوم (بعد الشهادة الثانوية) <input type="checkbox"/> بكالوريوس <input type="checkbox"/> ماجستير فأعلى
2. أي من المستويات التالية هي أقرب الي وصف خبرتك في استخدام الكمبيوتر؟ <input type="checkbox"/> لم استخدم الكمبيوتر مطلقاً من قبل <input type="checkbox"/> مبتدئة <input type="checkbox"/> متوسطة <input type="checkbox"/> متقدمة	4. المهنة <input type="checkbox"/> طالبة <input type="checkbox"/> موظفة حكومية <input type="checkbox"/> موظفة قطاع خاص <input type="checkbox"/> متقاعدة <input type="checkbox"/> بدون وظيفة
2. أي من المستويات التالية هي أقرب الي وصف خبرتك في استخدام الإنترنت؟ <input type="checkbox"/> لم استخدم الإنترنت مطلقاً من قبل <input type="checkbox"/> مبتدئة <input type="checkbox"/> متوسطة <input type="checkbox"/> متقدمة	

الجزء الثاني: القيم الشخصية: في ما يلي أوصاف لأشخاص مختلفين. ندعوك للتمعن في هؤلاء الأشخاص ثم لترين إلى أي حد كل شخص يتطابق أو لا يتطابق معك. ضعي علامة (x) في المربع المناسب:

1	2	3	4	5	6	1. القيم الشخصية (Personal Values)
أبدا لا تتشابه معي	لا تتشابه معي	تقريبا تتشابه معي	تتشابه معي بصورة كافية	تتشابه معي كثيرا	تتشابه معي كثيرا	
<input type="checkbox"/>	من المهم لها أن تأتي بأفكار جديدة وأن تكون مبدعة. هي تحب أن تعمل أشياء بأسلوب مبتكر لها					
<input type="checkbox"/>	بهمها العيش في أماكن آمنة. هي تتجنب جميع الأشياء التي من الممكن أن تهدد أمنها					
<input type="checkbox"/>	مهم لها أن تفعل أشياء كثيرة مختلفة في الحياة. هي تبحث دائما عن أشياء جديدة					
<input type="checkbox"/>	هي تعتقد بأنه على المرء أن لا يطلب أكثر مما يملك. هي تؤمن بأنه يجب على الناس أن يرضوا بما لديهم					
<input type="checkbox"/>	مهم بالنسبة لها أن تقرر بنفسها كيف تتصرف. هي تحب أن تكون لديها الحرية لتخطط وتختار بنفسها ما تريد أن تفعل.					
<input type="checkbox"/>	بهمها كثيرا أن يكون شعبها محميا. حسب رأيها يجب عليهم أن يكونوا على استعداد للتهديدات الداخلية و الخارجية.					
<input type="checkbox"/>	هي تحب المخاطرة. هي تبحث دائما عن المغامرات.					
<input type="checkbox"/>	مهم لها أن تكون متدينة. هي تحاول كثيرا أن تتصرف حسب ما يفرضه الدين.					
<input type="checkbox"/>	بهمها أن تكون الأشياء نظيفة ومرتبه. هي لا تحب الفوضى مطلقا.					
<input type="checkbox"/>	هي تعتقد انه من المهم الاهتمام بالأشياء التي حولنا. هي تحب أن تكون محبة للاستطلاع وتحاول فهم أشياء متعددة.					
<input type="checkbox"/>	حسب رأيها من الأفضل فعل الأشياء على النهج التقليدي. مهم بالنسبة لها المحافظة على العادات التي تعلمتها.					
<input type="checkbox"/>	تحب المفاجآت. مهم لها أن تعيش حياة مليئة بالأحاسيس.					
<input type="checkbox"/>	تجتهد لكي تحافظ على نفسها معافاة من الأمراض. مهم جدا لها أن تكون معافاة.					

تتشابه معي كثيراً	تتشابه معي	تتشابه معي بصورة كافية	تقريباً تتشابه معي	لا تتشابه معي	أبداً لا تتشابه معي	1. القيم الشخصية (Personal Values)
6	5	4	3	2	1	
<input type="checkbox"/>	يهما أن تكون مستقلة. هي تحب أن تعتمد على نفسها.					
<input type="checkbox"/>	يهما أن تكون الدولة مستقرة. يههما كثيراً الحفاظ على النظام الاجتماعي.					
<input type="checkbox"/>	مهم بالنسبة لها أن تكون متواضعة. هي تحاول أن لا تثير الانتباه إلى نفسها.					

■ **الجزء الثالث: تقييم نجاح أحد مواقع الإنترنت لأحد الجهات الحكومية بالمملكة العربية السعودية (من وجهة نظر المستخدم):**
 أن الغرض من هذا الجزء من الاستبيان هو فهم تصورك الخاص لأحد مواقع الإنترنت التابعة لأحد الجهات الحكومية بالمملكة العربية السعودية. استخدم المقياس من 1 إلى 5 بحيث أن 1 يعني أنك تعارضين العبارة بشدة و 5 تعني أنك توافقين على العبارة بشدة: (1- تعارضين بشدة، 2- تعارضين ، 3- محايدة، 4- توافقين، 5- توافقين بشدة). إذا لم تعرفي الجواب أو لست متأكدة إختاري "لا أعلم"

الآن اختاري أحد مواقع البوابات الالكترونية التي سبق وأن استخدمتها خلال الفترة القربية الماضية ومن ثم أجبني على كل الأسئلة بعد ذلك:

1. اسم هذه الجهة الحكومية:

2. رابط موقع الإنترنت للجهة الحكومية الذي تنوين تقييمه هو:

لأي درجة توافقين أو تعارضين العبارات التالية حول استخدام موقع الإنترنت الخاص بالجهة الحكومية الذي اخترتي ان تقييميه؟

لا أعلم	أوافق بشده	أوافق	محايدة	أعارض	أعارض بشده	3. جودة نظام الموقع (System Quality)
	5	4	3	2	1	
<input type="checkbox"/>	هذه البوابة للحكومة الالكترونية هي سهلة الاستخدام (User-friendly)					
<input type="checkbox"/>	أجد هذه البوابة للحكومة الالكترونية متاحة في كل مرة احتاجها (24 ساعة يوميا/ 7 ايام بالأسبوع)					
<input type="checkbox"/>	خريطة الموقع لهذه البوابة منظمة بشكل جيد (من السهل التنقل بين صفحات الموقع)					
<input type="checkbox"/>	أستطيع تسجيل الدخول لهذه البوابة للحكومة الالكترونية باستخدام نفس حساب الدخول لبوابات المواقع الحكومية الأخرى					
<input type="checkbox"/>	كنت قادراً على التأقلم بسهولة مع استخدام هذه البوابة للحكومة الالكترونية					
<input type="checkbox"/>	الوصول لهذه البوابة للحكومة الالكترونية جيد (استطيع ايجاد الموقع والوصول له بسرعة)					
<input type="checkbox"/>	تقوم هذه البوابة للحكومة الالكترونية بتحميل جميع النصوص والرسومات بسرعة					
<input type="checkbox"/>	تعد هذه البوابة للحكومة الالكترونية موثوقة					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	4. جودة المعلومات (Information Quality)
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات مفهومة					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات كاملة (وبمعنى آخر كل المعلومات التي أتوقع وجودها متوفرة في هذا الموقع)					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات دقيقة					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات وثيقة الصلة بهدف الموقع					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية أحدث المعلومات					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية المعلومات بكلا اللغتين: العربية والانجليزية					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات موثوقة					
<input type="checkbox"/>	تقدم هذه البوابة للحكومة الالكترونية معلومات مفيدة					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	5. جودة الخدمة (Service Quality)
<input type="checkbox"/>	كل الخدمات التي أتوقع أن أتلقاها من هذه الجهة الحكومية متوفرة على موقعهم بشكل الكتروني					
<input type="checkbox"/>	كل الخدمات المتوفرة في البوابة الإلكترونية لهذه الجهة الحكومية يمكن اتمامها دون الحاجة لزيارتهم بمقرهم في أي مرحلة من مراحل الحصول على الخدمة					
<input type="checkbox"/>	هذه البوابة للحكومة الإلكترونية شفافة في إيصال خدمات الحكومة الالكترونية للمستخدمين					
<input type="checkbox"/>	تسمح هذه البوابة للحكومة الالكترونية بالتواصل بشكل تفاعلي بين المستخدمين والجهة الحكومية					
<input type="checkbox"/>	تستجيب هذه الجهة الحكومية بسرعة لطلبات المستخدمين عبر بوابتهم الالكترونية (استجابة سريعة للطلبات والقدرة على الحصول على مساعدة اذا كان هناك مشكلة او استفسار)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يجعلني على ثقة بأنني سأحصل على المعلومات/الخدمات كما تعهدت به هذه الجهة الحكومية					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	5. جودة الخدمة (Service Quality)
<input type="checkbox"/>	تظهر هذه الجهة الحكومية التعاطف عند التواصل معهم عن طريق بوابتهم الالكترونية					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	6. تصور المخاطر (Perceived Risk)
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية قد ينطوي على مخاطر بسبب اداء الموقع (بمعنى أنه قد لا يتمكن من الحصول على الخدمة في الموعد المحدد بسبب أن البوابة لا تعمل)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية قد ينطوي على مخاطر مالية (فقدان المال عند الدفع الكترونياً عبر البوابة نتيجة خطأ في إتمام عملية الدفع)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية قد ينطوي على مخاطر أمنية (فقدان حساب الدخول للبوابة بسبب القرصنة الالكترونية)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية قد ينطوي على مخاطر تتعلق بالخصوصية (فقدان المعلومات الشخصية التي تم ادخالها)					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	7. الكفاءة الذاتية (Self-Efficacy)
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية حتى لو لم يسبق لي ان استخدمتها من قبل					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية حتى لو لم يكن هناك شخص ما يقربي يخبرني ماذا يجب علي ان افعل					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية إذا كان هناك شخص قد ساعدني لأبدأ في الاستخدام					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية إذا توفر دليل ارشادات المستخدم (user guides) على موقع البوابة					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية إذا توفرت وسيلة المساعدة المدمجة والمزودة من داخل الموقع (built-in help)					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية اذا كنت قد استخدمت بوابة حكومية أخرى من قبل وذلك لتلقي خدمات مشابهة					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	7. الكفاءة الذاتية (Self-Efficacy)
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية اذا استطعت التواصل مع الجهة الحكومية عبر البوابة للحصول على الدعم الفني (Technical Support)					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	8. سهولة الاستخدام (Ease of Use)
<input type="checkbox"/>	كان من السهل بالنسبة لي تعلم كيفية استخدام هذه البوابة للحكومة الالكترونية					
<input type="checkbox"/>	وجدت ان الدخول لهذه البوابة للحكومة الالكترونية سهلاً للقيام بما احتاج إليه من الحصول على معلومات أو خدمات					
<input type="checkbox"/>	وجدت أن التفاعل مع هذه البوابة للحكومة الالكترونية واضح ومفهوم					
<input type="checkbox"/>	وجدت أن التفاعل مع هذه البوابة للحكومة الالكترونية مرن					
<input type="checkbox"/>	كان من السهل علي أن أصبح ماهراً في التعامل مع هذه البوابة للحكومة الالكترونية					
<input type="checkbox"/>	من السهل تذكر كيفية استخدام هذه البوابة للحكومة الالكترونية					
<input type="checkbox"/>	عموماً، هذه البوابة للحكومة الالكترونية سهلة الاستخدام					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	9. تصور الفوائد (Perceived Usefulness)
<input type="checkbox"/>	تلقي الخدمات عن طريق هذه البوابة للحكومة الالكترونية يمكن أن يكون أسرع من التقدم بطلب لنفس الخدمات بالطريقة التقليدية (أي زيارة الجهة الحكومية في مقرهم)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يمكنني من الوصول للكثير من المعلومات					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يمكنني من التعامل مع الجهة الحكومية التابعة لها بشكل أسهل					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	9. تصور الفوائد (Perceived Usefulness)
<input type="checkbox"/>	عموماً، إن استخدام هذه البوابة للحكومة الالكترونية مفيد					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	10. الموقف تجاه الاستخدام (Attitude Towards Using)
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية هو فكرة جيدة					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية هي تجربة ممتعة					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية هي فكرة حكيمة					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية هي فكرة ايجابية					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية فيه منفعة لي					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	11. النية لإعادة الاستخدام (Behavior Intention to Re-use)
<input type="checkbox"/>	أنوي استخدام هذه البوابة للحكومة الالكترونية مستقبلا					
<input type="checkbox"/>	أنوي استخدام هذه البوابة للحكومة الالكترونية للحصول على المعلومات والخدمات عندما احتاج اليها					
<input type="checkbox"/>	أنوي أن أعيد استخدام هذه البوابة للحكومة الالكترونية بدلاً من زيارة الجهة الحكومية في مقرهم عندما احتاج للمعلومات أو لتقديم طلب للحصول على خدمات					
<input type="checkbox"/>	أنوي استخدام هذه البوابة للحكومة الالكترونية للقيام بأشياء مختلفة (مثل الحصول على معلومات والتقدم بطلب للحصول على خدمات ... الخ) متى كان ذلك ممكنا					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	12. الاستخدام الفعلي (Actual Use)
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للحصول على المعلومات					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للتقدم بطلب الحصول على خدمات					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية لدفع مبالغ رسوم الخدمات الحكومية					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للتواصل هذه مع الجهة الحكومية					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للتواصل مع الآخرين (مثل المسؤولين الحكوميين و المواطنين)					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للتحقق من المتطلبات قبل زيارة الجهة الحكومية في مقرهم					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية لمتابعة آخر اخبار هذه الجهة الحكومية					

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	13. رضا المستخدم (User Satisfaction)
<input type="checkbox"/>	تلبي هذه البوابة للحكومة الالكترونية توقعاتي					
<input type="checkbox"/>	هذه البوابة للحكومة الالكترونية ذات كفاءة عاليه					
<input type="checkbox"/>	هذه البوابة للحكومة الالكترونية فعالة					
<input type="checkbox"/>	أنصح باستخدام هذه البوابة للحكومة الالكترونية بدلاً من زيارة الجهة الحكومية في مقرهم					
<input type="checkbox"/>	عموماً، أنا راضٍ عن مستوى هذه البوابة للحكومة الالكترونية					
<input type="text"/>						إذا كنت غير راضٍ عن هذه البوابة، فما هي الأسباب باختصار؟

لا أعلم	أوافق بشده 5	أوافق 4	محايدة 3	أعارض 2	أعارض بشده 1	14. المنافع العامه (Net Benefits)
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية للحصول على المعلومات او التقدم بطلب للحصول على خدمات يوفر علي تكاليف مالية					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يوفر علي الوقت					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يجعل الحياة سهلة بالنسبة لي					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يقلل من الزحمة المرورية بالطرق					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يزيد الشفافية					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يقلص الفساد الإداري والمالي					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الإلكترونية تعزز من كفاءة استهلاك الطاقة (تقلل من استخدام الوقود بوسائل المواصلات ومقر العمل)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الإلكترونية يقلل من استخدام الورق					
<input type="checkbox"/>	تعد هذه البوابة للحكومة الإلكترونية صديقة للبيئة (تقلل من نسبة التلوث)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يؤدي إلى بيئة أكثر اخضراراً					

Appendix C.6: Survey Questionnaire – Male (Arabic Version)

استبيان تقييم بوابات الحكومة الإلكترونية للجهات الحكومية بالمملكة العربية السعودية (من وجهة نظر المستخدمين)

السلام عليكم ورحمة الله وبركاته

في البداية أود أن أشكر لإعطاء جزء من وقتك لتعبئة هذا الاستبيان. إن الغرض من الاستبيان هو تقييم البوابات الإلكترونية (مواقع الإنترنت للجهات الحكومية) بالمملكة العربية السعودية وذلك من وجهة نظر المستخدم. وتعد هذه الدراسة جزء مهم من بحثي بمرحلة الدكتوراه في جامعة بدفوردشير بالمملكة المتحدة.

سواء كنت مواطن أو مقيم بالمملكة العربية السعودية و سبق لك استخدام أحد مواقع الإنترنت للجهات الحكومية فأنت مدعو للمشاركة في هذه الدراسة و تعبئة الاستبيان. تستغرق تعبئة هذا الاستبيان **15-20** دقيقة تقريباً، وستكون البيانات المدخلة ذات أهمية كبيرة بالنسبة للباحث، والدراسات التي تخص الحكومة الإلكترونية وأيضاً الجهات الحكومية و مؤسسات القطاع الخاص المهتمة بتطوير أنظمة الحكومة الإلكترونية.

وستبقى هوية المشاركين غير معروفه حيث أنه لن يتم جمع اي بيانات شخصية او عناوين IP. و ستحفظ جميع البيانات بشكل آمن و سنتم عرضها بشكل اجمالي فقط. وتعتبر المشاركة في هذه الدراسة اختيارية ويعتبر اكمال وتسليم هذا الاستبيان رغبة منك للمشاركة في هذه الدراسة.

وفي حالة وجود اي استفسارات لديك، أرجو التواصل معي على اي من عناوين الاتصال الموضحة ادناه.

أشكر لك مقدماً تعاونك لإنجاح هذه الدراسة وتقبل مني خالص التقدير والاحترام،،
والسلام عليكم،،

الباحث/ عبيد بن علي المالكي
جامعة بدفوردشير – المملكة المتحدة

بريد إلكتروني: obaaid.almalki@study.beds.ac.uk

■ الجزء الأول: المعلومات الديموغرافية:

4. المستوى التعليمي <input type="checkbox"/> الثانوي فأقل <input type="checkbox"/> دبلوم (بعد الشهادة الثانوية) <input type="checkbox"/> بكالوريوس <input type="checkbox"/> ماجستير فأعلى	1. العمر <input type="text"/>
	2. أي من المستويات التالية هي أقرب الي وصف خبرتك في استخدام الكمبيوتر؟ <input type="checkbox"/> لم استخدم الكمبيوتر مطلقاً من قبل <input type="checkbox"/> مبتدئ <input type="checkbox"/> متوسط <input type="checkbox"/> متقدم
4. المهنة <input type="checkbox"/> طالب <input type="checkbox"/> موظف حكومي <input type="checkbox"/> موظف قطاع خاص <input type="checkbox"/> متقاعد <input type="checkbox"/> بدون وظيفة	2. أي من المستويات التالية هي أقرب الي وصف خبرتك في استخدام الإنترنت؟ <input type="checkbox"/> لم استخدم الإنترنت مطلقاً من قبل <input type="checkbox"/> مبتدئ <input type="checkbox"/> متوسط <input type="checkbox"/> متقدم

■ الجزء الثاني: القيم الشخصية: في ما يلي أوصاف لأشخاص مختلفين. ندعوك للتمعن في هؤلاء الأشخاص ثم لترى إلى أي حد كل شخص ينطبق أو لا ينطبق معك. ضع علامة (x) في المربع المناسب:

يتشابه معي كثيراً	يتشابه معي	يتشابه معي بصورة كافية	تقريباً يتشابه معي	لا يتشابه معي	أبداً لا يتشابه معي	القيم الشخصية (Personal Values)
6	5	4	3	2	1	
<input type="checkbox"/>	من المهم له أن يأتي بأفكار جديدة وأن يكون مبدعاً. هو يحب أن يعمل أشياء بأسلوب مبتكر له.					
<input type="checkbox"/>	يهمه العيش في أماكن آمنة. هو يتجنب جميع الأشياء التي من الممكن أن تهدد أمنه.					
<input type="checkbox"/>	مهم له أن يفعل أشياء كثيرة مختلفة في الحياة. هو يبحث دائماً عن أشياء جديدة.					
<input type="checkbox"/>	هو يعتقد بأنه على المرء أن لا يطلب أكثر مما يملك. هو يؤمن بأنه يجب على الناس أن يرضوا بما لديهم.					
<input type="checkbox"/>	مهم بالنسبة له أن يقرر بنفسه كيف يتصرف. هو يحب أن تكون لديه الحرية ليخطط ويختار بنفسه ما يريد أن يفعل.					
<input type="checkbox"/>	يهمه كثيراً أن يكون شعبه محمياً. حسب رأيه يجب عليهم أن يكونوا على استعداد للتهديدات الداخلية و الخارجية.					
<input type="checkbox"/>	هو يحب المخاطره. هو يبحث دائماً عن المغامرات.					
<input type="checkbox"/>	مهم له أن يكون متديناً. هو يحاول كثيراً أن يتصرف حسب ما يفرضه الدين.					
<input type="checkbox"/>	يهمه أن تكون الأشياء نظيفة ومرتبته. هو بالمره لا يحب الفوضى.					
<input type="checkbox"/>	حسب رأيه مهم الاهتمام بالأشياء. هو يحب ان يكون محب للاستطلاع ويحاول فهم أشياء متعددة.					
<input type="checkbox"/>	حسب رأيه من الأفضل فعل الأشياء على النهج التقليدي. مهم بالنسبة له المحافظة على العادات التي تعلمها.					
<input type="checkbox"/>	يحب المفاجآت. مهم له أن يعيش حياه مليئة بالأحاسيس					
<input type="checkbox"/>	يجتهد لكي يحافظ على نفسه معافى من الأمراض. مهم جدا له أن يكون معافى					

القيم الشخصية (Personal Values)						
يتشابه معي كثيراً	يتشابه معي	يتشابه معي بصورة كافية	تقريباً يتشابه معي	لا يتشابه معي	أبداً لا يتشابه معي	
6	5	4	3	2	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	يهمه أن يكون مستقلاً. هو يحب ان يعتمد على نفسه
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	يهمه ان تكون الدولة مستقرة. يهمله كثيراً الحفاظ على النظام الاجتماعي.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	مهم بالنسبة له أن يكون متواضعاً. هو يحاول أن لا يثير الانتباه إلى نفسه.

■ **الجزء الثالث: تقييم نجاح أحد مواقع الإنترنت لأحد الجهات الحكومية بالمملكة العربية السعودية (من وجهة نظر المستخدم):**
 أن الغرض من هذا الجزء من الاستبيان هو فهم تصورك الخاص لأحد مواقع الإنترنت التابعة لأحد الجهات الحكومية بالمملكة العربية السعودية. استخدم المقياس من 1 إلى 5 بحيث أن 1 يعني أنك تعارض العبارة بشدة و 5 تعني أنك توافق على العبارة بشدة: (1- تعارض بشدة، 2- تعارض ، 3- محايد، 4- توافق، 5- توافق بشدة). إذا لم تعرف الجواب أو لست متأكد اختر "لا أعلم"

الآن اختر أحد مواقع البوابات الالكترونية التي سبق وأن استخدمتها خلال الفترة القريبة الماضية ومن ثم أجب على كل الأسئلة بعد ذلك:

1. اسم هذه الجهة الحكومية:

2. رابط موقع الإنترنت للجهة الحكومية الذي تنوي تقييمه هو:

www.

لأي درجة توافق أو تعارض العبارات التالية حول استخدام موقع الإنترنت الخاص بالجهة الحكومية الذي اخترت ان تقيمه؟

3. جودة نظام الموقع (System Quality)						
لا أعلم	أوافق بشده	أوافق	محايد	أعارض	أعارض بشده	
	5	4	3	2	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	هذه البوابة للحكومة الالكترونية هي سهلة الاستخدام (User-friendly)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أجد هذه البوابة للحكومة الالكترونية متاحة في كل مرة احتاجها (24 ساعة يوميا/7 ايام بالأسبوع)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	خريطة الموقع لهذه البوابة منظمة بشكل جيد (من السهل التنقل بين صفحات الموقع)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أستطيع تسجيل الدخول لهذه البوابة للحكومة الالكترونية باستخدام نفس حساب الدخول لبوابات المواقع الحكومية الأخرى
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	كنت قادراً على التأقلم بسهولة مع استخدام هذه البوابة للحكومة الالكترونية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	الوصول لهذه البوابة للحكومة الالكترونية جيد (استطيع ايجاد الموقع والوصول له بسرعة)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	تقوم هذه البوابة للحكومة الالكترونية بتحميل جميع النصوص والرسومات بسرعة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	تعد هذه البوابة للحكومة الالكترونية موثوقة

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	4. جودة المعلومات (Information Quality)
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات مفهومة					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات كاملة (وبمعنى آخر كل المعلومات التي أتوقع وجودها متوفرة في هذا الموقع)					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات دقيقة					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات وثيقة الصلة بهدف الموقع					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية أحدث المعلومات					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية المعلومات بكل اللغتين: العربية والانجليزية					
<input type="checkbox"/>	توفر هذه البوابة للحكومة الالكترونية معلومات موثوقة					
<input type="checkbox"/>	تقدم هذه البوابة للحكومة الالكترونية معلومات مفيدة					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	5. جودة الخدمة (Service Quality)
<input type="checkbox"/>	كل الخدمات التي أتوقع أن أتلقاها من هذه الجهة الحكومية متوفرة على موقعهم بشكل الكتروني					
<input type="checkbox"/>	كل الخدمات المتوفرة في البوابة الإلكترونية لهذه الجهة الحكومية يمكن اتمامها دون الحاجة لزيارتهم بمقرهم في أي مرحلة من مراحل الحصول على الخدمة					
<input type="checkbox"/>	هذه البوابة للحكومة الإلكترونية شفافة في إيصال خدمات الحكومة الالكترونية للمستخدمين					
<input type="checkbox"/>	تسمح هذه البوابة للحكومة الالكترونية بالتواصل بشكل تفاعلي بين المستخدمين والجهة الحكومية					
<input type="checkbox"/>	تستجيب هذه الجهة الحكومية بسرعة لطلبات المستخدمين عبر بوابتهم الالكترونية (استجابة سريعة للطلبات والقدرة على الحصول على مساعدة اذا كان هناك مشكلة او استفسار)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يجعلني على ثقة بأنني سأحصل على المعلومات/الخدمات كما تعهدت به هذه الجهة الحكومية					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	5. جودة الخدمة (Service Quality)
<input type="checkbox"/>	تظهر هذه الجهة الحكومية التعاطف عند التواصل معهم عن طريق بوابتهم الالكترونية					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	6. تصور المخاطر (Perceived Risk)
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية قد ينطوي على مخاطر بسبب اداء الموقع (بمعنى أنه قد لا يتمكن من الحصول على الخدمة في الموعد المحدد بسبب أن البوابة لا تعمل)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية قد ينطوي على مخاطر مالية (فقدان المال عند الدفع الكترونياً عبر البوابة نتيجة خطأ في إتمام عملية الدفع)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية قد ينطوي على مخاطر أمنية (فقدان حساب الدخول للبوابة بسبب القرصنة الالكترونية)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية قد ينطوي على مخاطر تتعلق بالخصوصية (فقدان المعلومات الشخصية التي تم ادخالها)					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	7. الكفاءة الذاتية (Self-Efficacy)
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية حتى لو لم يسبق لي ان استخدمتها من قبل					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية حتى لو لم يكن هناك شخص ما يقربي يخبرني ماذا يجب علي ان افعل					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية إذا كان هناك شخص قد ساعدني لأبدأ في الاستخدام					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية إذا توفر دليل ارشادات المستخدم (user guides) على موقع البوابة					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية إذا توفرت وسيلة المساعدة المدمجة والمزودة من داخل الموقع (built-in help)					
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية اذا كنت قد استخدمت بوابة حكومية أخرى من قبل وذلك لتلقي خدمات مشابهة					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	7. الكفاءة الذاتية (Self-Efficacy)
<input type="checkbox"/>	أستطيع اكمال تلقي الخدمة مستخدماً هذه البوابة للحكومة الالكترونية اذا استطعت التواصل مع الجهة الحكومية عبر البوابة للحصول على الدعم الفني (Technical Support)					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	8. سهولة الاستخدام (Ease of Use)
<input type="checkbox"/>	كان من السهل بالنسبة لي تعلم كيفية استخدام هذه البوابة للحكومة الالكترونية					
<input type="checkbox"/>	وجدت ان الدخول لهذه البوابة للحكومة الالكترونية سهلاً للقيام بما احتاج اليه من الحصول على معلومات أو خدمات					
<input type="checkbox"/>	وجدت أن التفاعل مع هذه البوابة للحكومة الالكترونية واضح ومفهوم					
<input type="checkbox"/>	وجدت أن التفاعل مع هذه البوابة للحكومة الالكترونية مرن					
<input type="checkbox"/>	كان من السهل علي أن أصبح ماهراً في التعامل مع هذه البوابة للحكومة الالكترونية					
<input type="checkbox"/>	من السهل تذكر كيفية استخدام هذه البوابة للحكومة الالكترونية					
<input type="checkbox"/>	عموماً، هذه البوابة للحكومة الالكترونية سهلة الاستخدام					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	9. تصور الفوائد (Perceived Usefulness)
<input type="checkbox"/>	تلقي الخدمات عن طريق هذه البوابة للحكومة الالكترونية يمكن أن يكون أسرع من التقدم بطلب لنفس الخدمات بالطريقة التقليدية (أي زيارة الجهة الحكومية في مقرهم)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يمكنني من الوصول للكثير من المعلومات					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يمكنني من التعامل مع الجهة الحكومية التابعة لها بشكل أسهل					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	9. تصور الفوائد (Perceived Usefulness)
<input type="checkbox"/>	عموماً، إن استخدام هذه البوابة للحكومة الالكترونية مفيد					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	10. الموقف تجاه الاستخدام (Attitude Towards Using)
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية هو فكرة جيدة					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية هي تجربة ممتعة					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية هي فكرة حكيمة					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية هي فكرة ايجابية					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية فيه منفعة لي					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	11. النية لإعادة الاستخدام (Behavior Intention to Re-use)
<input type="checkbox"/>	أنوي استخدام هذه البوابة للحكومة الالكترونية مستقبلا					
<input type="checkbox"/>	أنوي استخدام هذه البوابة للحكومة الالكترونية للحصول على المعلومات والخدمات عندما احتاج اليها					
<input type="checkbox"/>	أنوي أن أعيد استخدام هذه البوابة للحكومة الالكترونية بدلاً من زيارة الجهة الحكومية في مقرهم عندما احتاج للمعلومات أو لتقديم طلب للحصول على خدمات					
<input type="checkbox"/>	أنوي استخدام هذه البوابة للحكومة الالكترونية للقيام بأشياء مختلفة (مثل الحصول على معلومات والتقدم بطلب للحصول على خدمات ... الخ) متى كان ذلك ممكنا					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	12. الاستخدام الفعلي (Actual Use)
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للحصول على المعلومات					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للتقدم بطلب الحصول على خدمات					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية لدفع مبالغ رسوم الخدمات الحكومية					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للتواصل هذه مع الجهة الحكومية					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للتواصل مع الآخرين (مثل المسؤولين الحكوميين و المواطنين)					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية للتحقق من المتطلبات قبل زيارة الجهة الحكومية في مقرهم					
<input type="checkbox"/>	استخدم هذه البوابة للحكومة الالكترونية لمتابعة آخر اخبار هذه الجهة الحكومية					

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	13. رضا المستخدم (User Satisfaction)
<input type="checkbox"/>	تلبي هذه البوابة للحكومة الالكترونية توقعاتي					
<input type="checkbox"/>	هذه البوابة للحكومة الالكترونية ذات كفاءة عالية					
<input type="checkbox"/>	هذه البوابة للحكومة الالكترونية فعالة					
<input type="checkbox"/>	أنصح باستخدام هذه البوابة للحكومة الالكترونية بدلاً من زيارة الجهة الحكومية في مقرهم					
<input type="checkbox"/>	عموماً، أنا راضٍ عن مستوى هذه البوابة للحكومة الالكترونية					
<input type="text"/>						إذا كنت غير راضٍ عن هذه البوابة، فما هي الأسباب باختصار؟

لا أعلم	أوافق بشده 5	أوافق 4	محايد 3	أعارض 2	أعارض بشده 1	14. المنافع العامة (Net Benefits)
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية للحصول على المعلومات او التقدم بطلب للحصول على خدمات يوفر علي تكاليف مالية					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يوفر علي الوقت					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يجعل الحياة سهلة بالنسبة لي					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يقلل من الزحمة المرورية بالطرق					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يزيد الشفافية					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يقلص الفساد الإداري والمالي					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الإلكترونية تعزز من كفاءة استهلاك الطاقة (تقلل من استخدام الوقود بوسائل المواصلات ومقر العمل)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الإلكترونية يقلل من استخدام الورق					
<input type="checkbox"/>	تعد هذه البوابة للحكومة الإلكترونية صديقة للبيئة (تقلل من نسبة التلوث)					
<input type="checkbox"/>	استخدام هذه البوابة للحكومة الالكترونية يؤدي إلى بيئة أكثر اخضراراً					

Appendix C.7: Screenshots of the Survey-online Questionnaire

University of Bedfordshire

Evaluating e-Government Portals' Success in Saudi Arabia from Individuals' Perspective Survey

Part 1. Demographic Information

Gender

Male

Female

Age

How can you best describe your experience of using computers?

I have never used computers before

Beginner

Intermediate

Advanced

Screenshot of the survey-online questionnaire (English version)

University of Bedfordshire

استبيان تقييم بوابات الحكومة الإلكترونية للجهات الحكومية بالمملكة العربية السعودية - من وجهة نظر المستخدمين

الجزء الأول: المعلومات الديموغرافية

1. العمر

2. أي من المستويات التالية هي أقرب الى وصف خبرتك في استخدام الكمبيوتر؟

لم استخدم الكمبيوتر مطلقاً من قبل

مبتدئة

متوسطة

متقدمة

3. أي من المستويات التالية هي أقرب الى وصف خبرتك في استخدام الإنترنت؟

لم استخدم الإنترنت مطلقاً من قبل

مبتدئة

Screenshot of the survey-online questionnaire (Arabic version)

Appendix C.8: Reminder Email for the Online-Survey Questionnaire

مدير إدارة الحاسب الآلي/تقنية المعلومات

السلام عليكم ورحمة الله وبركاته

أفيدكم بأنه قد سبق دعوتكم للمشاركة في دراسة لتطوير اطار لتقييم البوابات الإلكترونية (مواقع الإنترنت) للجهات الحكومية وذلك بطلب تعبئة الاستبيان من قبل جميع منسوبي هذه الجهة الحكومية الراغبين في المشاركة.

وحيث انه لم يتم الحصول على عدد كافي من الاستبيانات للبدء في التحليل، لذا ارجو منكم اعادة ارسال هذا الإيميل لجميع منسوبيكم ودعوة كل من لم يسبق له المشاركة ان يقوم بتعبئة الإستبيان على احد الروابط التالية:

- لتعبئة الاستبيان باللغة العربية:

https://bedsbusiness.eu.qualtrics.com/SE/?SID=SV_bEDlYpHPazmBlkh

- أو لتعبئة الاستبيان باللغة الانجليزية:

https://bedsbusiness.eu.qualtrics.com/SE/?SID=SV_4PFr4q8XtbWJVvJ

وستعود هذه الدراسة بالفائدة على جميع الجهات الحكومية وذلك بتقييم بواباتها الإلكترونية ومعرفة العوامل التي تؤدي إلى نجاحها.

وفي حالة وجود اي استفسارات لديكم، أرجو التواصل معي على اي من عناوين الاتصال الموضحة ادناه. أشكر لكم مقدما تعاونكم لإنجاح هذه الدراسة وتقبلوا مني خالص التقدير والاحترام. والسلام عليكم،،

الباحث/ عبيد بن علي المالكي
جامعة بدفورديشير – المملكة المتحدة

بريد إلكتروني: obaid.almalki@study.beds.ac.uk

Appendix C.9: List of e-Government Portals Evaluated by Participants

Org. Code	Organization Name	Organization Website Address	Freq.	%
1	Saudi Arabian General Investment Authority	www.sagia.gov.sa	2	0.9
2	Ministry of Interior	www.moi.gov.sa	63	29.4
3	Cultural Bureau	www.uksacb.org	2	0.9
4	Ministerial Agency of Civil Affairs	www.moi.gov.sa/wps/portal/civilaffairs	24	11.2
5	Ministry of Labour	www.mol.gov.sa	8	3.7
6	Princess Nourah Bint Abdulrahman University	www.pnu.edu.sa	3	1.4
7	Royal Commission for Jubail and Yanbu (RCJU)	www.rcjy.gov.sa	1	0.5
8	General Directorate of Passports	www.gdp.gov.sa	14	6.5
9	Saudi Credit and Savings Bank	www.scb.gov.sa	2	0.9
10	Ministry of education	www.moe.gov.sa	3	1.4
11	General Department of Traffic	www.rt.gov.sa	2	0.9
12	General Directorate of Borders Guards	www.fg.gov.sa	3	1.4
13	Ministry of Civil Service	www.mcs.gov.sa	8	3.7
14	Technical and Vocational Training Corporation	www.tvtc.gov.sa	1	0.5
15	General Organization for Social Insurance	www.gosi.gov.sa	9	4.2
16	Ministry of Higher Education	www.mohe.gov.sa	10	4.7
17	Saudia Airlines	www.saudiairlines.com	2	0.9
18	Department of Zakat and Income Tax	www.dzit.gov.sa	1	0.5
19	Ministry of Foreign Affairs	www.mofa.gov.sa	4	1.9
20	NOOR program	www.noor.moe.sa	2	0.9
21	Prince Sultan Military Medical City	www.rmh.med.sa	1	0.5
22	Saudi Industrial Property Authority	www.modon.gov.sa	1	0.5
23	Deanship of e-learning and distance education - Imam Mohammed Ibn Saud Islamic University	elearn.imamu.edu.sa	1	0.5
24	King Saud University	www.ksu.edu.sa	3	1.4
25	General Directorate of Civil Defence	www.998.gov.sa	2	0.9
26	King Fahd Security College	www.kfsc.edu.sa	1	0.5
27	Ministry of Culture and Information	www.info.gov.sa	1	0.5
28	Jeddah Municipality	www.jeddah.gov.sa	1	0.5
29	Ministry of Justice	www.moj.gov.sa	4	1.9
30	Jouf University	www.edug.ju.edu.sa	1	0.5
31	National Centre for Assessment in Higher Education	qiyas.com.sa	1	0.5
32	Ministry of Health	www.moh.gov.sa	2	0.9
33	King Abdulaziz City for Science and Technology	www.kacst.edu.sa	2	0.9
34	King Abdulaziz University	www.kau.edu.sa	3	1.4
35	Taif University	www.tu.edu.sa	5	2.3
36	Albaha University	www.bu.edu.sa	1	0.5
37	Ministry of Defence	www.moda.gov.sa	1	0.5
38	Ministry of Housing	www.redf.gov.sa	1	0.5
39	Umm Al-qura University	www.uqu.edu.sa	1	0.5
40	Saudi Development Fund	www.redf.gov.sa	1	0.5
41	Electronic Integration Portal	tkml.moe.gov.sa	1	0.5
42	King Khalid University	www.kku.edu.sa	1	0.5
43	General Directorate of Hasa Education	www.hasaedu.gov.sa	1	0.5
44	Hafiz	www.hafiz.gov.sa	1	0.5
45	Ministry of Commerce and Industry	www.mci.gov.sa	1	0.5
46	Saudi	www.saudi.gov.sa	1	0.5
47	Yesser Program	www.yesser.gov.sa	1	0.5
48	Ministry of Communication and Information Technology	www.sts.sa.com	4	1.9
49	Saudi Council of Engineers	www.saudieng.sa	1	0.5
50	The Bureau of Investigation and Public Prosecution	www.bip.gov.sa	1	0.5
51	Imam Muhammad bin Saud Islamic University	www.imamu.edu.sa	1	0.5
52	Makkah Province Imarah	www.makkah.gov.sa	1	0.5
53	Municipal Council of Riyadh City	www.rmc.gov.sa	1	0.5
Total			214	100%

Assessing Normality - Personal Values-Attitude-Behaviour Model

Variable	skew	kurtosis
PV7	0.389	-1.067
PV1	-0.268	-0.557
PV11	-0.046	-0.982
PV4	-0.148	-1.147
PV12	-0.198	-0.722
PV3	-0.356	-0.765
PV14	-0.89	0.491
PV10	-0.88	0.244
PV5	-0.731	-0.323
PV2	-1.043	0.494
PV6	-0.975	0.177
PV9	-0.906	0.039
PV13	-0.575	-0.38
PV15	-1.486	2.064
PV8	-0.639	-0.512
PV16	-0.9	0.104
BIRU1	-1.145	1.85
BIRU4	-1.206	1.098
BIRU3	-1.189	0.844
BIRU2	-1.365	1.953
ATU5	-1.578	2.781
ATU4	-1.527	2.813
ATU3	-1.22	1.953
ATU2	-1.017	0.901
ATU1	-1.665	3.528
Multivariate		25.99

Appendix D.1: ECEG 2012: Exploratory Study on e-Government

Almalki, O., Duan, Y. & Frommholz, I. (2012) An Exploratory Study on eGovernment Systems Success in Saudi Arabia. *In: 12th European Conference on e-Government, Barcelona, Spain, 14th -15th June 2012, pp. 38-46.*

An Exploratory Study on e-Government Systems Success in Saudi Arabia

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Abstract: The evaluation of information systems (IS) has been of great interest to researchers in the last few decades. However, a limited number of studies have been conducted on the assessment of e-government systems success. e-Government improves services and efficiency and assists in building trust between governments and the public. The importance of evaluating e-government systems comes from the need of governments to ascertain what investments in the delivery of services using e-government systems via Information and Communication Technology (ICT) are appropriate. The aim of this research is to explore the main aspects and factors for evaluating e-government systems success. The study has been conducted in the context of the Saudi government. This government has invested heavily in ICT infrastructure and e-government systems in the last decade. This huge investment reflects the ambition of the government to exploit the advantages of using e-government systems to deliver government services to the public via ICT. Accordingly, the Yesser Program was established in 2005 as an e-government initiative in conjunction with the Communication and Information Technology Commission (CITC) and the Ministry of Finance (MoF). To achieve the aim of this study, interviews were conducted with 49 Saudi citizens to explore their perceptions of e-government systems and their success. The interviewees who participated in our study were varied in their demographic information. The responses of the interviewees will help to identify the success factors of e-governments systems and establish a preliminary framework for evaluating e-government success. The study objectives have been achieved and the findings reveal many issues regarding the factors that affect e-government systems success.

Keywords: e-Government, ICT, Saudi Arabia, e-government evaluation, e-government success factors

1. Introduction

In the last ten years, most governments have invested heavily in e-government services to be delivered electronically to beneficiaries (Vintar and Nograšek, 2010). However, levels of acceptance by users are still low and not satisfactory (Hung et al., 2006). e-Government improves services, and efficiency and assists in building trust between citizens and governments (Lee et al., 2005; Department of Economic and Social Affairs, 2010). It is natural that governments need to know how well they invest in e-government systems and what the perceptions of the beneficiaries might be of these systems.

The Saudi government has invested heavily in ICT infrastructure and e-government systems in the last decade. This huge investment reflects the ambition of the government to exploit the advantages of using e-government systems to deliver government services to the public via ICT. Accordingly, the Yesser program was established in 2005 as an e-government initiative in conjunction with the Communication and the Information Technology Commission (CITC) and Ministry of Finance (MoF).

The aim of this research is to explore the main factors for evaluating e-government systems success. To achieve this aim, semi-structured interviews were conducted with 49 Saudi citizens to explore their perceptions of e-government systems and their success. The interviewees who participated in our study were varied in their demographic information. The responses of the interviewees will help to identify the success factors of e-government systems and establish a preliminary framework for evaluating e-government success.

This paper is divided into six main parts: the first part is the introduction. The second part provides some background information about our study. The third part presents the research methodology followed in this study. The fourth part analyses and discusses our findings. The final part concludes.

Research Background

e-Government is a type of information system (IS) developed using Information Technology (IT). In the field of IS research, IS success as a concept is accepted widely and agreed to be the principal criterion to evaluate IS (Rai et al., 2002). However, academic researchers are struggling to develop a comprehensive framework which best evaluates IS success. DeLone and MacLean (2003) provide in depth insights into the problem of IS success by stating “The multidimensional and interdependent nature of IS success requires careful attention to the definition and measurement of each aspect of this dependent variable. It is important to measure the possible interactions among the success dimensions in order to isolate the effect of various independent variables with one or more of these dependent success dimensions”. Researchers have conducted many studies to tackle the multi-disciplinary problem in the context of IS. Irani *et al.* (2005) encourage organisations to develop interpretivist models for IS evaluation rather than using only financially-based ones.

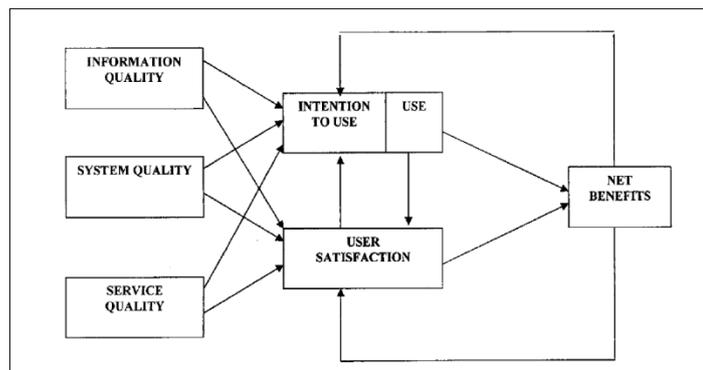


Figure1: Updated IS Success Model (DeLone and McLean, 2003)

The number of internet users in the Gulf Commission Countries (GCC), and particularly in Saudi Arabia, has increased dramatically in the last decade. The number of users in Saudi Arabia in 2000 was 200,000 (0.9% of the population), whereas this number has steeply increased in 2010 to 9,800,000 users which is 38.1% of the population (Internet World Stats, 2010). This leads to a fertile environment for Saudi Arabia and other GCC governments to invest and promote e-government services to the public.

This is tangible when looking at the number of e-government services that are currently offered by Saudi government agencies and are available at the hub of Saudi government sites (www.saudi.gov.sa). Users can load up and instantly get access to all the government e-services and websites. The number of these e-government services has reached around 1000 e-services, delivered by 126 government agencies in accordance with the Yesser Program's Assistant Director General (Alriyadh Information Technology, 2010).

The Saudi government has already invested about \$800 million in developing e-government systems (AMEinfo, 2006). This huge investment is a strong indicator of their commitment towards e-government. For this reason, evaluation of e-government systems can be a crucial aspect in the return of this huge investment. In addition, there is a necessity for a comprehensive framework to enforce standards in order to evaluate and measure the advantages that e-government can provide to the citizens, agencies, and society (Hu et al., 2005). Given the huge investments, more attention is being paid to learning whether these investments deserve the value of that money (Irani et al., 2008).

A literature review reveals that limited theoretical and empirical studies have been carried out to systematically evaluate the success of e-government systems. In particular, only a limited number of studies have been carried out in the context of developing countries, Middle East countries, and in particular GCC. Therefore, the goal of this study is to enhance our understanding of factors that influence the success of e-government systems.

2. Research Methodology

In our study, the qualitative data was collected using the semi-structured interview method. The participants in this study are all Saudi nationals. They have been encouraged to be honest in referring to their personal experiences, opinions, and insights about e-government systems in Saudi Arabia. The responses have been quantified to capture the frequency of different factors (Ghauri and Gronhaug, 2010). Responses to the interview questions will help to reshape Delone and McLean's (2003) model; alternative models can also be deployed as constructs and measures for establishing a comprehensive framework to evaluate e-government systems success.

The main purpose is to elicit answers to a variety of questions related to the issues of developing a framework for evaluating e-government success. These questions seek demographic information, attitudes, personal experiences, and opinions of the targeted interviewees towards e-government portals in Saudi Arabia.

The data have been collected from different interviewees who vary demographically and have different backgrounds and qualifications. These interviewees are all employees, ranging from normal internet users to advanced developers, and of different managerial levels. They all work in the private and public sectors in Saudi Arabia. The main issues that have been discussed in this exploratory study were the perception of citizens towards e-government in Saudi Arabia, and what factors are most important to the interviewees when they critically evaluate the e-government systems. The participants provided their insights regarding these issues and how they conceptualise the success of e-government.

3. Research Design

This exploratory study intends to provide a better understanding about e-government in Saudi Arabia in general and to address what factors can be used to evaluate e-government systems success. Exploratory research can be conducted for different reasons: to better understand the problem, to examine if future research is feasible by exploring various aspects related to research in detail, and to further highlight the problem (Hart, 2006).

The interviewees are persons who live in Saudi Arabia and work in different positions in public or private sector organisations. These interviewees have fair knowledge about e-government in Saudi Arabia and they have experience of using electronic services of e-government systems.

The aim of this exploratory study is to investigate the citizens' perception about factors and measures affecting the success of e-government systems in Saudi Arabia. The following objectives were formed to achieve the aim of this study:

9. To extract demographic information of interviewees.
10. To better learn how well the e-government initiative program in Saudi Arabia is known by citizens.
11. To elicit the impression of the interviewees towards e-government services and how they rate them (highly successful/ less successful), and why.
12. To know what the factors of "e-government success" are from the perspective of the users.
13. To learn how to measure the proposed dimensions of e-government success.
14. To find out what advantages/ benefits users are expecting when using e-government portal services.
15. How to make government portals beneficial and worthy of usage.
16. How to measure user satisfaction when using e-government portal services, and how to enhance this satisfaction.

In order to achieve the above objectives, the following questions were proposed to elicit the opinions, personal experiences, and insights/ thoughts. Each question is related to one or more objective(s). Table 1 lists the questions and relevant objectives.

Table1: Interview questions related to the study objectives

Interview Question No.	Question	Objective/(s)
1,2,3 and 4	Age, degree, job category, and sector?	1
5	Do you have an idea when the Yesser programme (Saudi Arabian e-government initiative) was founded? Which commission did the Yesser programme report to?	2
6	What is the most successful e-services sector in Saudi Arabia (i.e. e-government, e-banking, e-commerce, e-learning)? Why is it a success?	3
7	How would you rate e-government portals in Saudi Arabia? (In a few words, what makes it highly successful or less successful?)	3
8	Can you give an example of one of the e-government portals in Saudi Arabia that you think is highly successful? Why?	4
9	Can you give an example of an e-government portal that you think is less successful? Why?	4
10	From personal experience and also your opinion, what are the factors that may lead to successful e-government portals in Saudi Arabia?	4, 5
11	As a citizen, what do you imagine that e-government can facilitate to you in the near future? What are the benefits you expect to gain?	6
12	Currently, do you prefer to use the available e-government services provided by government portals or to visit them in their offices? Why?	3
13	What things make you confident about and give you the incentive to re-use e-government portals?	7
14	How can the e-government services in Saudi Arabia enhance users' satisfaction?	8

4. Data Analysis and Discussion

The following sections highlight the findings and interpretations based on respondents' answers. Qualitative data analysis software, NVivo 8.0, has been used to analyse the interview data. We analyse the data and discuss findings in the following sections.

4.1 Overview of the Interviews

As described above in Table 1, the interview questions were based on certain objectives set to achieve the aim of this study. The questions that were asked of the interviewees were translated into the Arabic language, the native language of all participants. Using the native language in interviews confirms clarity of understanding questions and ensures that accurate responses are received. The participants in this study agreed to be interviewed voluntarily, considering that their names will not be requested and their employers' details will not be published.

4.2 Demographic Information

Table 2 shows the interviewees' demographic information based on their answers to the first four interview questions. All the interviewees are Saudi nationals. They are all employees, working in various organisations. This will enrich our study with a wealth of information since these interviewees are all of the legal age to request e-government services and directly interact with the government via their portals.

Table 2: Demographic information of interviewees

Characteristic	Group	Percentage (n=49)
Age	20-29	28.57%
	30-39	40.90%
	40-49	18.37%
	50 years and more	8.16%
Qualification	Diploma	20.41%
	Bachelor	69.39%
	Master	10.20%
Job Category	Administrator	16.33%
	Budget Analyst	2.04%
	Financial Analyst	2.04%
	Engineer	14.29%
	IT Specialist	34.69%
	Teacher	4.08%
	Technician	2.04%
Sector	Manager	24.49%
	Private	42.86%
	Public	57.14%

4.3 e-Government Awareness in Saudi Arabia

Similar to other developing countries, Saudi Arabia established their national e-government programme in 2005 and named it "Yesser". "Yesser" is an Arabic word that means "to simply facilitate". The main goal for this programme is to enhance the delivery of services and increase the participation of the public through the utilisation of ICT.

The interview findings showed that 86% had no idea of when the Yesser programme was introduced by the government to the public or to which government agency this programme belongs. The majority of this number replied that they did not know. A few of them gave incorrect answers or said they had some information but were not sure. This may imply that there was a lack of introduction of this programme via the local media to the public. This may also affect the knowledge of the public about the benefits and advantages of utilising e-government services. In addition, the Yesser programme may need to widely promote and advertise itself in cross-media advertisements.

One of our interviewees commented on the e-government programme in Saudi Arabia: "I have only an idea through one of my friends who is interested in the matters of e-government, but not via media or journalism". Introducing e-government services and their advantages to the public is an essential step for any e-government initiative to be successful. This should be part of the e-government strategy under the development of a marketing and communications plan (Lowery, 2001).

4.4 Perceptions Towards Saudi e-Government Systems

Only 84% of respondents answered our question about rating e-government portals in Saudi Arabia. 43% of the participants expressed negative views towards e-government systems in Saudi Arabia. They commented that e-government portals are not good and are below the average of their expectations. 14% of respondents rated e-government systems as average, 12% rated them as good, 4% were neutral, 8.16% said that e-government portals vary in the level of development, and only 2.04% expressed a very positive view and said that they are very good.

In answer to the question about what makes Saudi e-government portals highly successful, participants gave many replies. Most of the frequent answers were related to completeness and communication. 29% of participants commented that e-government portals should include all services provided by government agencies. 22% pointed out that good information quality will lead to greater success of e-government portals in Saudi

Arabia, and 20% said that ease of use is an important factor for greater success. In addition, providing interactive services and having good system quality were proposed by some other interviewees.

The Saudi Ministry of Interior was appointed by 33% of our participants as the most successful e-government portal. Participants stated different reasons for their selection. The delivery of a variety of e-services through the Ministry of Interior portal was one of the repeated answers given by the participants. According to one participant commenting about this reason, "They provide many e-services that you can receive where you sit in your home/ office".

On the contrary, opinions varied about the least successful e-government system. Many organisations were given as examples of less successful portals. However, it was agreed by 11% of participants that most e-government portals are less successful, and another 11% agreed that the Ministry of Civil Affairs is less successful than the others. Different reasons were given for the latter selection: ineffective e-services, clients needing to visit the office to receive the services, poor quality of feedback/ reply when interacting with this agency and poor system quality.

Despite the fact that many respondents expressed negative views, 73% of participants preferred to use the current available e-government services. The frequent reason for this preference was to save time and effort. Other reasons given were that the cost of receiving e-services is cheaper than receiving traditional services, users can apply from anywhere and avoid transportation congestion, and the possibility of corruption when visiting offices to receive services face-to-face can be avoided.

4.5 The Best e-Services Provider in Saudi Arabia

It was found that 100% of interviewees nominated banks as the best e-services provider in Saudi Arabia. An indication for the banks' success was captured by this participant: "In Saudi Arabia, I would consider the banks to be the best in providing e-services. They provide most of their services online. The user does not need to visit the branch at any stage to complete the service. Banks' e-services are featured with good security and they assure their customers that no one will be able to impersonate their identities. However, Banks' e-services may need further development and improvements to reach the level that some e-services can be 100% delivered online (e.g. pay regular invoices, transfer regularly fixed amounts of money automatically)". Another participant commented: "Banks are pioneers in providing e-services in Saudi Arabia. Their success has accumulated for more than ten years. Other sectors such as public sector have failed to provide e-services with the same good quality as the banks and as we may see and experience in other advanced countries".

4.6 Factors to Evaluate e-Government Success

Participants demonstrated various opinions regarding the factors to evaluate the success of e-government systems. In response to question (10), participants explained the factors which may lead to successful e-government systems in Saudi Arabia.

It is noteworthy that interviewees provided their answers without distinguishing between dimensions, factors and measures as they have been identified in the literature. For example, "ease of use" is a measure of "system quality" (Petter et al., 2008). Information quality, system quality, and service quality, as the three quality dimensions of DeLone and MacLean's (2003) model, have been ranked highly by the participants. Moh'd Al-adaileh (2009) used user's technical capability, which is consistent with computer literacy, as one of the dimensions and found that it has a significant impact on the evaluation of IS success. Privacy and security issues are crucial and repeated issues that have been studied in e-government research (Belanger and Hiller, 2006). In the US, the e-Government Act of 2002 considers the maintenance of security and privacy as important pillars of e-government (Lee et al., 2005). Availability and ease of use are two validated measures that belong to information quality and system quality accordingly (Sedera and Gable, 2004). All of these factors and measures will be considered in our future study when establishing a comprehensive framework for e-government evaluation. Table 3 lists the proposed factors that may result in e-government systems success.

Table 3: Factors to evaluate e-government systems success

No.	Factor	Frequency (n=49)
1	Good information quality	63.27%
2	Computer literacy	57.14%
3	Good system quality	55.10%
4	Maintaining security	48.98%
5	Maintaining privacy	46.94%
6	Good service quality	44.90%
7	Ease of use	30.61%
8	All services have to be delivered online	16.33%
9	Continuous update of content	12.24%
10	Receive the e-government service completely online	10.20%
11	Good feedback and quick response to users	10.20%
12	Transparency	8.16%
13	Continuous system upgrade	8.16%
14	Unified signing-up/ in for all government agencies	6.12%
15	Good website design	6.12%
16	Accessibility	6.12%
17	Availability	4.08%
18	Help should be provided interactively when receiving e-government services	4.08%
19	Technical support	4.08%
20	Dual language – native language and English	4.08%
21	Staff who develop/ support e-government services should have good experience	4.08%
22	Obtain the requirements of beneficiaries regularly	4.08%
23	Other factors	8.16%

4.7 Net benefits of Using e-Government

e-Government systems, like any other type of IS, have certain impacts on users. Net benefits as one of the IS success dimensions was first introduced by DeLone and MacLean in 2003. They argue that, instead of complicating their proposed model in that year, combining all the net benefits into one dimension was a good idea. Plenty of reasons were given by interviewees to express the benefit of using e-government systems. 69.39% of participants supported that using e-government systems will make their life easier, saving them time and money. One participant commented about the benefits of using e-government systems: “using e-government systems will enhance the quality of our life by saving us effort, time and money”. 18.37% of respondents found it is an advantage when clients do not need to visit the public sector offices to receive services. One comment was: “the crucial thing is to enable clients to receive e-services completely without visiting public sector offices”. 18.37% of interviewees believed that using e-government systems will mitigate the problem of traffic jams and will make the transportation systems less congested.

4.8 Factors Affecting User Satisfaction

Various reasons and aspects were given by our interviewees regarding user satisfaction. The factor which was mentioned most often is that all services provided by government agency have to be delivered online in the electronic portal. This means that users would

prefer to receive services while they sit at home or in the office and they do not want to visit governmental offices. 39% of participants assured that delivering all services that belong to a particular government agency to their electronic portal on the web will lead to user satisfaction. One of the participants commented: "All the services have to be transformed to electronic form and have to be delivered to clients online". 27% nominated "ease of use" to be one of the factors that will result in user satisfaction.

24.49% mentioned that e-services have to be completed online throughout e-government portals. Precisely, they meant that users of e-government services should not be in a situation which requires them to visit the office to complete receipt of the service. According to one of the respondents, "The e-government service has to be completely achieved via the portal. The user should not at any stage need to visit the office. For instance, the delivery of national identification cards requires the user to visit the office of Department of Civil Affairs to receive it. However, this card can be posted by mail".

22.45% of participants believed that having interactive e-services will increase the satisfaction of users. Various interpretations of having interactive e-services were given by the interviewees. One participant interpreted interaction as: "increasing the number of staff to support the clients or developing an intelligent system to respond to clients requests and intelligently interact with them online". Another interviewee had different views about interaction: "There must be some means to interact with clients by sending them confirmations about the status of their requests. Clients should also be capable to trace the status of their requests online or by mobile phones". Interaction was also understood by one participant as receiving responses to inquiries and being able to send feedback to governmental agencies: "The e-government portal has to act as a governmental agency office. There should be interaction means to facilitate inquiry and feedback".

4.9 Factors Affecting Intention to Use

Wu and Wang (2006) identify Intention to use as "a measure of the likelihood a person will employ the application". Intention to use is a significant dimension as well as a quality dimension since the latter affects attitudes of IS users (Wu and Wang, 2006). Participants gave different responses as to the reason for their intention to use e-government systems. Table 4 shows the factors that interviewees felt influenced their intention to re-use e-government services. It reveals that these factors are similar to the factors mentioned in Section 5.6, "Factors to Evaluate e-Government Success". This means that the responses are consistent to some extent and there is a good level of agreement towards the applicability of using these factors to evaluate e-government success.

Table 4: Factors influencing the intention to re-use e-government services

No.	Factor	Frequency (n=49)
1	All e-services are available online. No need to visit the office to complete transactions	51.02%
2	Good service quality	30.61%
3	Ease of use	30.61%
4	Save time and effort	22.45%
5	Good information quality	14.29%
6	Good response to clients	12.24%
7	Good system quality	12.24%
8	Credibility in providing e-services	10.20%
9	Mechanisms to trace the status of requests	6.12%
10	Interaction	6.12%
11	Careful consideration of user requirements	6.12%
12	Security	6.12%
13	Others	8.16%

5. Conclusion

This research paper explored the main aspects and factors for evaluating e-government systems success. Findings from this exploratory study can help future researchers to develop a better understanding of the success of e-government systems. Many factors proposed by this study to influence the success of e-government systems converge with the core quality dimensions of DeLone and McLean's IS success model (2003). Information quality, system quality and service quality were among the top ten factors that affect e-government success, as nominated by respondents. In previous studies the IS success model of DeLone and McLean (2003) has proven to be a useful theoretical framework to help understand and explain IS success. This model has been examined in many empirical studies on IS success using various instruments which have proven to produce reliable results.

Other factors which were highly ranked by the participants were: computer literacy, security, privacy, ease of use, continuous update of contents, the online delivery of all services and the ability to complete e-government services online without the need to visit the government agency office at any stage of receiving services. These factors have been widely discussed in the literature surrounding IS and its application (i.e. e-commerce, e-learning, etc).

All participants regarded the online banking services as the best e-services that they interact with in Saudi Arabia. This does not necessarily mean that online banking in Saudi Arabia has reached perfection. However, it may be worth conducting future research to investigate what makes online banking in Saudi Arabia the best e-service. Other e-service providers, such as e-commerce and e-learning, may be also considered, to investigate all the possible success dimensions that are applicable to e-government. The findings of such research into online banking and other IS applications may assist e-government researchers and practitioners to examine such factors in the context of e-government.

Despite negative views being expressed by 43% of participants towards e-government services in Saudi Arabia, 73% of participants still said they would prefer to receive e-government services rather than visit the government agency office to receive the service in a traditional way. Governments should exploit this thirst for e-government systems by enhancing online services, and could base the evaluation of these services on comprehensive frameworks such as the IS success model.

This study has other limitations. Firstly, the selection of participants was not random, as convenience sampling was used due to the time restrictions for collecting data, and thus the findings may not be representative. However, it is a good basis for future research. The production of more general findings would need a systematic sampling procedure with a larger sample. Secondly, the factors proposed in this study are related to a particular culture. Further cross-cultural research using samples from different GCC/Middle East countries would be required for concrete generalisations of findings.

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Appendix D.2: ECEG 2013: Developing a Conceptual Framework

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Developing a Conceptual Framework to Evaluate e-Government Portals' Success

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Abstract: Many governments around the world have invested heavily into the e-government systems. They have been making significant efforts to provide information and services online. However, previous research shows that countries are varied in the rate of adoption and success of e-government systems. Some countries stand in better positions than the others in terms of success that is defined in this research as individual's level of use, satisfaction, and their perceived net benefits. In fact, drawing a clear picture of how and why individuals use e-government portals is the way to know the factors that lead to their success. A review of the literature shows that much of the research on e-government in developing countries focuses on the issues of the acceptance and the adoption of this emerging technology by individuals. Also, with the limited reported studies on e-government systems success, most of these studies focus on certain specific issues (e.g. trust) rather than looking at further global and contextual factors which will lead to success. It is difficult to make a judgment regarding what findings and results exist in the literature of Information Systems (IS) success or its applications that are applicable to fully understand e-government portal's success. Therefore, this paper proposes a conceptual framework which uses different theories/models for evaluating e-government portals' success from individual's point of views. The proposed framework will be tested in a future study in the context of e-government portals in Saudi Arabia. This framework integrates the updated DeLone and McLean IS success model, Technology Acceptance Model (TAM), self-efficacy theory and perceived risk. Also, culture issues have been taken into consideration by using personal values theory introduced by Schwartz (Schwartz 1992). The framework consists of thirteen constructs including: system quality, information quality, service quality, perceived risk, self-efficacy, personal values, perceived ease of use, perceived usefulness, attitude towards using, behaviour intention to use, use, user satisfaction, and perceived net benefit.

Keywords: e-Government, Saudi Arabia, e-government evaluation, e-government portals success, e-government success factors, e-government systems success

1. Introduction

Governments all over the world have invested hugely in the ICT in general and e-government systems in particular. For example, Canadian government has allocated \$880 million to invest in the e-government technologies in more than six years (2000-2005) (Arrivals et al. 2007). Another example from the eastern world is the South Korean government. It invested \$5 billion in ICT within five years, between 1996 and 2001 (Lee et al. 2005). Saudi Arabia as one of the Middle Eastern and developing economic countries has invested about \$800 million in e-government (AMEinfo 2006). This big spending on e-government technologies is, however, offset by the great fear of failure. As a matter of fact, it was found that 35% of e-government initiatives were total failures (i.e. "the initiative was never implemented or was implemented but immediately abandoned"), 50% were partial failure (i.e. "major goals for the initiative were not attained and/or there were significant undesirable outcomes"), and only 15% of e-government initiatives have been reported successful (i.e. "most stakeholder groups attained their major goals and did not experience significant undesirable outcomes") (Heeks et al. 2003).

Therefore, this research paper aims to develop a comprehensive framework for evaluating e-government success. The study is important to the e-government research and practice. A review of the literature on IS success and e-government evaluation reveals that there is very limited research on evaluating e-government success from both: adoption and impacts from individuals' perspectives. This research will respond to this

need by developing a comprehensive framework for evaluating e-government portal success based on major IS success theories, perceived risk theory and values theory.

The proposed framework will be tested in a future study in the context of e-government portals in Saudi Arabia. As e-government portal's success is relatively new phenomenon, a multifaceted outcome tends to be highly contextual. Therefore, it is not proper to decide what findings and outcomes reported in the literature are applicable in understanding the e-government portals' success in the context of Saudi e-government. This proposed future study will be consistent with (Agourram 2009) argument regarding IS success and its applications; It will contribute to the literature by conducting specific research that deals with how people in different cultures absorb and operationalize the success of particular e-government portals.

2. e-Government research and relevance issues

The research on e-government has a relatively short history (Dwivedi 2009). Governments all over the world have started launching their e-government initiatives since the late 1990s (Torres et al. 2005;Meijer et al. 2009), which aim at delivering their information and services in electronic forms to their citizens, residents, and businesses (Torres et al. 2005). e-Government, like any other applications of IS, has been researched since it has emerged. However, its short research history brings up a lot of crucial issues such as e-government success has not been well investigated and needs to be discussed from various angles to understand it.

Analysing the most cited articles published since 2008 to date in the Government Information Quarterly Journal reveals that what e-government research themes have attracted researchers nowadays. The most cited paper in the list was about assessing the e-government success. This study was conducted by Wang and Liao (2008). The authors of this study argue that it was the first study in the context of e-government systems that empirically tested and validated the updated IS success model of DeLone and McLean (2003). The motivation for this study was to test to what extent the traditional IS success theories/models can fit in the e-government context. The main finding was that, the constructs of DeLone and McLean (2003) are valid measures for e-government systems success.

When considering e-government evaluation research, in 2005, a study that has been conducted by Griffin and Halpin (2005) gives a glance at the specific themes of e-government evaluation: evaluation of the stages of e-government growth, evaluation of the delivery of electronic services via the internet, evaluation of the involvement of e-government stakeholders, and the evaluation of the costs and benefits of e-government. In addition, looking at the recent leading issues in e-government research (Worrall 2011), reveals that: to some extent the evaluation of e-government in general is still one of the leading issues under investigation by researchers.

Generally, studies on e-government have focused on a variety of issues, such as its adoption and acceptance (Shareef et al. 2011;Ozkan and Kanat 2011;Arrivals et al. 2007;Srivastava and Teo 2009;Tung and Rieck 2005), its evaluation (Barnes and Vidgen 2006;Papadomichelaki and Mentzas 2012;Karunasena and Deng 2012;Irani et al. 2005) and success (Wang and Liao 2008;Floropoulos et al. 2010;Gil-García and Pardo 2005). The aforementioned studies within their classified groups look at the e-government from different angles. For instance, the trust of e-government has been investigated from different perspectives (e.g. trust about governments and trust about e-government technology in use). Another important theme of e-government research is the impact of e-government systems on individuals (Irani et al. 2012;Chan et al. 2010).

3. Theoretical background and research model

The proposed framework of this research integrates TAM, the updated IS success model, self efficacy theory, perceived risk theory and value theory. This was based on what the literature revealed as well as what has been confirmed and suggested in the exploratory study conducted by Almalki et al. (2012) as part of this PhD research. The proposed framework was used to inform the establishment of a research hypothesis. The following sections present each of these theories/models and highlight strengths and limitations in the context of the discussion.

3.1. The updated DeLone and McLean IS success model

In this research, the framework utilised by DeLone and Mclean (2003) IS success model with six dimensions portrayed in Figure 1. In fact, DeLone and MacLean's original model was proposed in 1992 based on their in-depth insight and comprehensive review of IS success literature (Wu and Wang 2006; DeLone and McLean 2003). DeLone and MacLean's (1992) original model was a crucial milestone in research measuring IS success since it was introduced based on the critical analysis of 180 research articles relevant to the field (Hu et al. 2005). Also, it has been validated, tested and cited by many researchers.

According to DeLone and McLean (1992): "in searching for IS success measures, rather than finding none, there are nearly as many measures as there are studies". Sedera and Gable (2004) cited in (Petter et al. 2008), tested different success models including the DeLone and McLean and Seddon models, finding that the DeLone and McLean model is the best model to measure the success of enterprise systems. The main purpose of DeLone and McLean (1992) review was to synthesise IS research into coherent knowledge. Also, the previous attempts to address IS success were not properly addressed (Petter et al. 2008). This was due to the complexity, interdependency, and multidimensionality of the IS success problem (Petter et al. 2008).

According to DeLone and McLean (2003), their model, which was first proposed in 1992, has been cited by many researchers in their studies. The validation and the use of the model in different applications of IS are strong indicators of the strength of this model (Petter et al. 2008; DeLone and McLean 2004). Also, the proposed model by DeLone and McLean can be applied and used for both the individual and at organisational level (Petter et al. 2008).

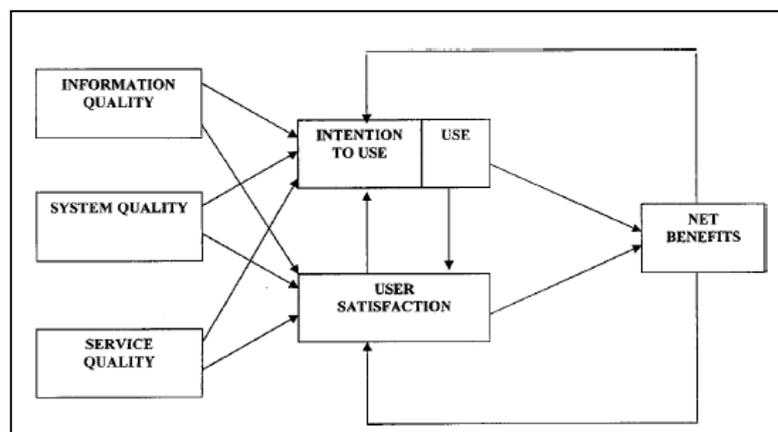


Figure 1: Updated DeLone and Mclean IS success model (DeLone and McLean 2003)

3.2. TAM

Acceptance of technology by users has become an important subject in the field of IS over the last three decades. Many studies attempted to propose models that can interpret and predict system use. TAM is among those models that were widely used and it remains well known by the IS researchers. Thus, it becomes essential in this study to consider TAM when intending to understand the acceptance of e-government technology by users. The first theory that was proposed in the context of understanding human behaviours that influence IT adoption was the Theory of Reasoned Action (TRA) (Compeau and Higgins 1995; Arrivals et al. 2007). This theory was introduced by Fishbein and Ajzen (1975) and it gained attention of researchers in this field (Compeau and Higgins 1995). Figure 2 shows TAM proposed by Davis (1989).

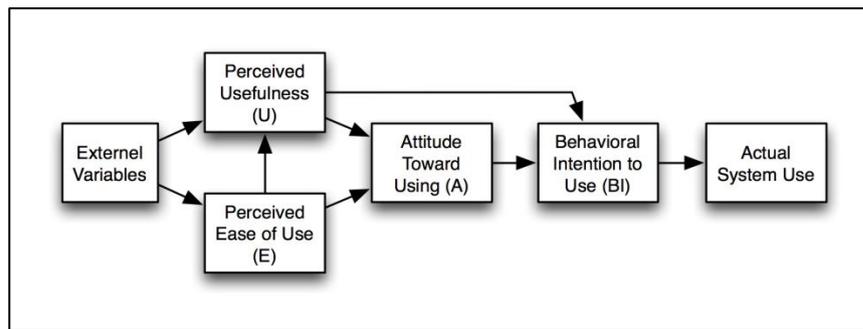


Figure 2: TAM proposed by Davis (1989)

The TAM was proposed by Fred Davis in 1985 with the main purpose of investigating the mediating role of perceived usefulness and perceived ease of use and their relation to other external variables and the extent to which they affect system use (Legris et al. 2003). Recently, Davis has suggested a new version of TAM and named it TAM2 with a new construct: 'subjective norms' (Legris et al. 2003).

3.3. Self-efficacy theory

Bandura (1986) defined self-efficacy as: "People's judgements of their capabilities to organise and execute courses of actions required to attain designated types of performances. It is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses". The term 'self-efficacy' originated from psychology. In the context of computing, computer self-efficacy is defined as: "a judgement of one's capability to use a computer" (Compeau and Higgins 1995). Self-efficacy has become commonly used by researchers in the field of IT to understand individual behaviours towards IT (e.g. (Kim et al. 2010; Reid 2009; Li et al. 2012)). Thus, it has been decided to include it in the theoretical framework of this research and it has been emphasised by some of the interviewees in the conducted exploratory study by Almalki et al. (2012). Furthermore, it is based on a call by (Bandura 1986; Compeau and Higgins 1995) to tailor the measurements of self-efficacy to the specific domain which is undergoing testing to increase prediction accuracy. This study considered computer-self efficacy and adapted the measures proposed by Compeau and Higgins (1995) with some modifications to make it applicable to the context of e-government.

3.4. Perceived Risk

Featherman and Pavlou (2003) argued that past research on technology adoption has primarily focused on the positive utility gains which can be attributed to technology adoption. Perceived risk is considered as negative utility or potential losses that can be attributed to e-services adoption (Featherman and Pavlou 2003). They call it "Perceived Risk Theory" in their study, integrate it with TAM, and empirically test it which results in a proposed model for e-services adoption. It is interpreted as to feel uncertain regarding potential negative consequences/results of utilizing a service or a product (Featherman and Pavlou 2003). It is defined in the marketing discipline as "the expectation of losses associated with purchase and acts as inhibitor to purchase behaviour" (Peter and Ryan 1976).

In the world of online services (e.g. e-commerce), consumers have demonstrated reluctance to accomplish purchase in the form of simple on-line transaction (Hoffman et al. 1999). The reason which makes them reluctance to interact with online services is: "consumers simply do not trust most Web providers enough to engage in relationship exchange involving money and personal information with them" (Hoffman et al. 1999).

According to Lee (2009), modelling perceived risk as a singular variable construct in previous research of e-banking lead to fail in reflecting the real characteristics of perceived risk and tell why users resist to use online services. In this research, the perceived risk is first modelled as a single variable within the proposed framework, and then will be decomposed into its multi-facets. This is in line with Featherman and Pavlou

(2003) and Lee (2009). To deeply understand the role of perceived risk in e-government portals' success, this study carried out a more in-depth research of what are the sub-facets of perceived risk. Thus, perceived risk has been divided to six categories: performance risk, financial risk, social risk, time risk as theorized by Featherman and Pavlou (2003), security, and privacy as theorized by Featherman and Pavlou (2003) and Fu et al.(2006).

3.5. Personal values

Values were defined by Rokeach (1973) and Schwartz (1992) as cognitive representations of desirable and abstract goals. Personal values can influence the behaviour of individuals in various aspects of life. The ten basic values identified by Schwartz (1992) have the strength of including all the core values that are widely recognized in various cultures in the world (Schwartz 2009). Table 1 lists the ten value types taken from (Schwartz 2009).

Value type	Definition
Power	Social status and prestige, control or dominance over people and resources
Achievement	Personal success through demonstrating competence according to social standards.
Hedonism	Pleasure and sensuous gratification for oneself
Stimulation	Excitement, novelty, and challenge in life
Self-direction	Independent thought and action; choosing, creating, exploring
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature
Benevolence	Preserving and enhancing the welfare of those with whom one is infrequent personal contact (the 'in-group')
Tradition	Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide the self
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms
Security	Safety, harmony, and stability of society, of relationships, and of self

Table1: The value types and their definitions (Schwartz 2009)

Schwartz (1992) justifies the identification and classification of human values in their study, "identification of a universal structure would permit the derivation of basic value dimensions that could be used for the purpose of comparisons". This will help future researchers who include personal values in their frameworks/models to know what values are most related to their phenomenon and what values have no impacts. Rokeach (1973) states the importance of personal values inclusion in all sciences and when it is vital to study the human behaviours: "The value concept, more than any other, should occupy a central position ... able to unify the apparently diverse interests of all the sciences concerned with human behaviours". Schwartz (1992) commented on these words and stated that these words proclaim the centrality of personal values.

To know which of the ten personal values are most relevant to e-government portals, a Delphi study is conducted with a panel of experts. The aim of this Delphi study is to investigate which value types are particularly relevant to e-government portals' success or have a significant impact in the context of e-government portals; those values which will be decided as the result of this Delphi study will be used later in this PhD research to examine to what extent and how those identified value types affect e-government portals' success.

4. Proposed Conceptual Framework

Based on calls, findings and recommendations from previous researchers, and the above discussions on TAM (Davis et al. 1989), computer self-efficacy theory (Compeau and Higgins 1995), the updated DeLone and McLean IS success model (2003), Perceived Risk theory, value theory (Schwartz 1992) as well as the exploratory study conducted as

part of this PhD research (Almalki et al. 2012), the proposed theoretical framework for this study assumes that: System Quality , Information Quality , Service Quality , Computer Self-Efficacy, Perceived Risk and Personal Values – as external variables - are linked to e-government portals' Perceived Usefulness , Perceived Ease of Use , Attitude Toward Using, Behaviour Intention to Use, Use and User Satisfaction. Furthermore, it is suggested in this research that these, in turn, influence the e-government portals' Net Benefits from individuals' perspective. Figure 3 represents the proposed theoretical framework. Table 2 lists the proposed framework constructs and their definitions which were obtained from the literature.

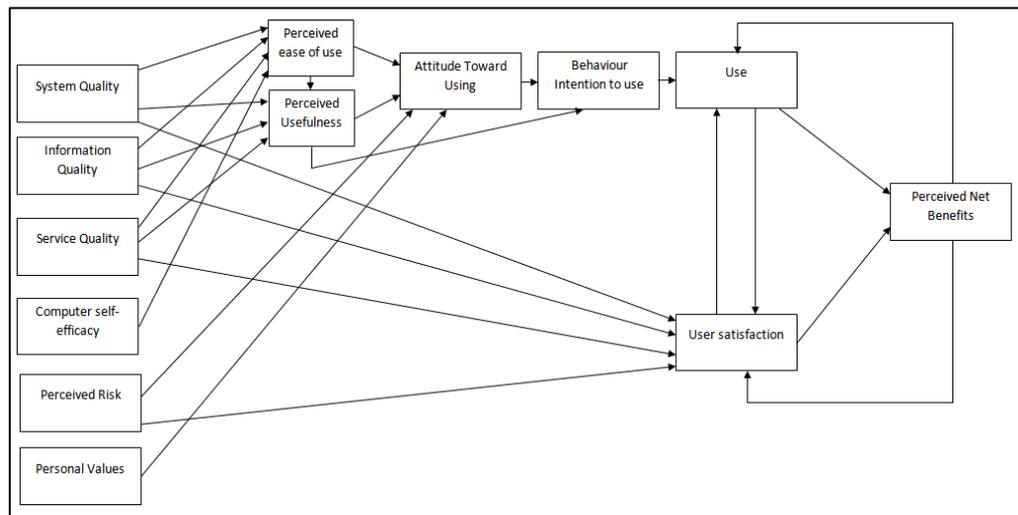


Figure 3: The Proposed theoretical framework

The original DeLone and MacLean model (1992) was proposed mainly to evaluate IS success based on performance (DeLone and McLean 2004). On the other hand, the TAM model was proposed to measure the acceptance of IT (Lean et al. 2009). Combining constructs from both models will help provide e-government portals' success from different points of view: firstly, from the point of view of users' acceptance of this technology, and secondly, this will help evaluating the impact of e-government portals' success.

The marriage of these literature streams may result in a more comprehensive framework for evaluating e-government portals' success, and therefore benefit the IS and e-government research disciplines. This developed framework can be seen from different views with regards to the adapted IS theories/models, perceived risk theory and value theory. It can be seen as an extension to the updated DeLone and McLean IS success model (2003) by replacing Use construct with the whole TAM (Davis et al. 1989). Also, it can be seen as using TAM (Davis et al. 1989) with some identified external variables: quality dimensions of the updated DeLone and McLean IS success model (2003), perceived risk, personal values, user satisfaction and perceived net benefits. In fact, this framework looks forward to a better understanding of factors that lead to success in terms of adoption and impact together. This success is viewed by the eyes of individuals who use the e-government portals. More details about this framework, its testing and validation will be reported later in a future study.

Construct	Definition	Adapted from
System quality	The desirable characteristics of e-government portal	Petter et al.(2008)
Information quality	The desirable characteristics of the e-government portal output	Petter et al.(2008)
Service quality	The quality of services/support which e-government portal users interact with/receive through the portal and/or from the government organization that is responsible for managing the portal	Petter et al.(2008)
Computer self-efficacy	Perceptions of an individual of his/her ability to achieve a desired task using e-government portal	Compeau and Higgins (1995)
Perceived risk	The e-government portal users perception of the uncertainty and the negative effects of a desired result	Fu et al.(2006)
Personal Values	The cognitive representations of desirable and abstract goals	Rokeach (1973) and Schwartz (1992)
Perceived usefulness	The extent to which an e-government portals' users believe that using e-government portals would improve their reception of government information and services	Davis (1989)
Perceived Ease of use	The extent to which an e-government portals' users believe that using a particular e-government portal would be free of effort	Davis (1989)
Attitude Toward Using	Persons' general feeling of favourableness or unfavourableness as far as the use or not of an e-government portal is concern	Fishbein and Ajzen (1975)
Behaviour Intention to Use	A measure of the strength of one's intention to perform a specified behaviour (i.e. using and interacting with e-government portal)	Lean et al.(2009)
Use	The extent and manner in which e-government systems users utilize the capabilities of an e-government portal	Petter et al.(2008)
User satisfaction	e-Government portal user's response to the use of the product of a particular e-government portal system	DeLone and McLean (1992)
Net benefits	The overall impacts of an e-government portals in use on the individuals	DeLone and McLean (2003)

Table 2: The Proposed framework constructs' definitions

5. Future Work

Two research activities are currently undertaken. First, the first round of a Delphi study has been conducted to know what value types are most relevant to the success of e-government portals. After finalizing this study, the value types will be added to the current proposed framework under the construct: personal values. Second, a Survey questionnaire is been developed based on the measurement items proposed for each construct in the framework. This survey questionnaire will be distributed for the users in the context of Saudi government portals. Those users will nominate one of the government portals that they have used before and then answer all the questions regarding the evaluation of that portal based on the dimensions of our proposed framework.

6. Conclusion

This research paper describes an effort to provide a comprehensive framework for evaluating e-government portals' success. This proposed framework is composed of a set of useful and clear factors that were theorized from a well-known IS theories/models and other discipline theories. Reviewing the literature of IS success and e-government evaluation, revealed that there is a need to consider some major IS theories/models along with personal value theory in order to establish a framework that is better to evaluate e-government portals' success from individuals perspective. The proposed evaluation framework will be empirically tested in the context of Saudi government in the very near future. It can also be adapted to a specific country situation and modified based on analysing of what factors that apply in the context of the other countries.

This study has a limitation which lies in the absence of the empirical testing and validation of the proposed framework and the measurement items that has not been applied in the fieldwork. In addition, the proposed framework requires an empirical validation which will be performed in the next stage of this PhD research using survey questionnaire. This survey questionnaire will be distributed among the users of e-government portals in Saudi Arabia. More details about this phase will be reported later as well as the results of validation and testing of this proposed framework.

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Appendix D.3: ECEG 2013: Delphi Study: Relevance of Personal Values

Almalki, O., Duan, Y. & Frommholz, I. (2013) *Identifying the Relevance of Personal Values to E-Government Portals' Success: Insights from a Delphi Study*. In: International Conference on Information and Social Science (ISS), Nagoya, Japan, 24th-26th September 2013, pp. 97-112.

IDENTIFYING THE RELEVANCE OF PERSONAL VALUES TO E-GOVERNMENT PORTALS' SUCCESS: INSIGHTS FROM A DELPHI STUDY

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ABSTRACT

Most governments around the world have put considerable financial resources into the development of e-government systems. They have been making significant efforts to provide information and services online. However, previous research shows that the rate of adoption and success of e-government systems vary significantly across countries. It is argued here that culture can be an important factor affecting e-government success. This paper aims to explore the relevance of personal values to the e-government success from an individual user's perspective. The ten basic values identified by Schwartz were used. A Delphi study was carried out with a group of experts to identify the most relevant personal values to the e-government success from an individual's point of view. The findings suggest that four of the ten values, namely Self-direction, Security, Stimulation, and Tradition, most likely affect the success. The findings provide a basis for developing a comprehensive e-government evaluation framework to be validated using a large scale survey in Saudi Arabia.

Keywords: e-government, e-government evaluation, e-government portals success, personal values, culture.

INTRODUCTION

Governments all over the world have invested heavily in Information and Communication Technology (ICT) in general and e-government systems in particular. For example, the Canadian government has allocated \$880 million to invest in e-government technologies from 2000 to 2005 (Kumar *et al.*, 2007). Another example from the Eastern world is the South Korean government. It invested \$5 billion in ICT between 1996 and 2001 (Lee *et al.*, 2005). Saudi Arabia

as both a Middle Eastern and developing country has invested about \$800 million in e-government (AMEinfo, 2006).

This big spending on e-government technologies is, however, offset by a great fear of failure. A study by Heeks (2003) found that 35% of e-government initiatives were total failures (i.e. “the initiative was never implemented or was implemented but immediately abandoned”), 50% were partial failures (i.e. “major goals for the initiative were not attained and/or there were significant undesirable outcomes”), and only 15% of e-government initiatives were regarded as being successful (i.e. “most stakeholder groups attained their major goals and did not experience significant undesirable outcomes”). Nowadays, the fears of failure is not the only issue but other issues have also emerged, such as the impact of e-government in terms of environment and corruption (e.g. Almalki *et al.*, 2012; Shapiro, 2013; Karunasena & Deng, 2012; Bertot *et al.*, 2010).

Research on e-government has a relatively short history (Dwivedi, 2009). Governments all over the world have started launching their e-government initiatives only since the late 1990s (Torres *et al.*, 2005; Meijer *et al.*, 2009), aiming at delivering their information and services in electronic form to their citizens, residents, and businesses (Torres *et al.*, 2005). E-government, like any other application of information systems (IS), has been researched since it has emerged. However, its short research history means that some crucial issues such as e-government success have not been fully investigated yet from different perspectives despite a significant number of papers being published in this area.

Analysing the most cited articles published since 2008 in the Government Information Quarterly Journal reveals that the most frequently cited paper was about assessing the success of e-government. This study was conducted by Wang & Liao (2008) and empirically tested and validated the updated IS success model of DeLone & McLean (2003) in the context of e-government. It adapted the model without any modification. However, the many citations of this study indicate the substantial interest in academia in issues related to the success of e-government.

In addition, looking at the recent publications in e-government research by (Worrall, 2011) reveals that the evaluation of e-government success in general is still one of the major issues investigated by researchers. Studies on e-government have focused on a variety of issues, such as its adoption and acceptance (e.g. Shareef *et al.*, 2011; Ozkan & Kanat, 2011; Kumar *et al.*, 2007; Srivastava & Teo, 2009; Tung & Rieck, 2005), its evaluation (e.g. Barnes & Vidgen, 2006; Papadomichelaki & Mentzas, 2012; Karunasena & Deng, 2012; Irani *et al.*, 2005) and success (Wang & Liao, 2008; Floropoulos *et al.*, 2010; Gil-García & Pardo, 2005). The aforementioned studies within their classified groups look at e-government from different angles. For instance, the trust in e-government has been investigated from different perspectives (e.g. trust in governments and trust in using e-government technology). Another important theme of e-government research is the impact of e-government systems on individuals (e.g. Irani *et al.*, 2012; Chan *et al.*, 2010).

CULTURE AND VALUES

Culture has always been considered as a major factor affecting IS adoption and success and many researchers have examined culture and its impact on IS

success (e.g. Leidner & Kayworth, 2006; Agourram, 2009; Al-Gahtani *et al.*, 2007). E-government, as a specific application of ICTs, can also be affected by culture (e.g. Lean *et al.*, 2009; Aladwani, 2012; Zhao, 2013). A previous study conducted by the authors suggests that culture can also play a critical role affecting individuals' perception of the e-government portals' success. However, culture is a challenging variable to study since it has various definitions and measurement items (Leidner & Kayworth, 2006).

When conducting research that involves culture, the first challenge is to understand what culture is, how it is conceptualized, and what the possible dimensions are that formed the concept of culture (Straub *et al.*, 2002). Many definitions of the term "culture" are available in the literature. It is notable to mention that Kroeber & Kluckhohn (1952) identified 164 definitions of culture. These definitions were formed in different ways and from many perspectives (Kroeber & Kluckhohn, 1952).

The definitions of culture differ in their understanding and using of a central concept (Sackmann, 1992). These central concepts might be: a set of beliefs, basic assumptions and a set of shared core values. This may create some ambiguity and confusion since different authors use these concepts in different ways (Sackmann, 1992).

The differences between conceptualizations of culture manifest themselves at four different levels (Hofstede *et al.*, 2010). These levels explain the culture concept when going into depth of its concept. The importance of mentioning these levels is to show where the value concept is located into the culture. Values occupy the kernel position in the culture concept. Table 1 shows the manifestations of culture at five levels: Symbols, heroes, rituals, practices and values. The definitions and examples of these manifestations are taken from (Hofstede *et al.*, 2010).

TABLE 1 DEFINITIONS AND EXAMPLES OF MANIFESTATIONS OF CULTURE (Hofstede *et al.*, 2010)

Manifestations of Culture at Different Levels	Definitions and Examples
Symbols	Words, gestures, pictures, or objects that carry a particular meaning that is recognized as such only by those who share the culture (e.g. language)
Heroes	Persons, alive or dead, real or imaginary, who possess characteristics that are highly prized in a culture and those serve as models for behaviour (e.g. parents)
Rituals	Collective activities that are technically superfluous to reach desired ends but that, within a culture, are considered socially essential
Practices	Symbols, heroes, rituals are subsumed under the term practices
Values	Broad tendencies to prefer certain states of affairs over others. Values are feelings with an added arrow indicating a plus and a minus side (e.g. evil versus good and dangerous versus safe)

Personal Values

Values were defined by Rokeach (1973) and Schwartz (1992) as cognitive representations of desirable and abstract goals. Personal values can influence the behaviour of individuals in various aspects of life. Rokeach (1973, p. 3) states the importance of personal values for all sciences and when it is vital to study human behaviours: “The value concept, more than any other, should occupy a central position ... able to unify the apparently diverse interests of all the sciences concerned with human behaviour”. Schwartz (1992, p. 3) justifies the identification and classification of human values in his study, arguing that “identification of a universal structure would permit the derivation of basic value dimensions that could be used for the purposes of comparison”.

The ten basic values identified by Schwartz (1992) include all the core values that are widely recognized in cultures around the world (Schwartz, 2009). Table 2 lists the ten value types taken from Schwartz (2009). Schwartz’s classification can help researchers to know what values are most related to their phenomenon and what values have less of an impact. Schwartz (1992) commented on these terms and stated that they proclaim the centrality of personal values.

TABLE 2 THE VALUE TYPES AND DEFINITIONS (Schwartz, 2009)

Value Type	Definition
Power	Social status and prestige, control or dominance over people and resources
Achievement	Personal success through demonstrating competence according to
Hedonism	Pleasure and sensuous gratification for oneself
Stimulation	Excitement, novelty, and challenge in life
Self-direction	Independent thought and action; choosing, creating, exploring
Universalism	Understanding, appreciation, tolerance, and protection for the welfare
Benevolence	Preserving and enhancing the welfare of those with whom one is in
Tradition	Respect, commitment, and acceptance of the customs and ideas that
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms
Security	Safety, harmony, and stability of society, of relationships, and of self

Personal Values in e-Government Portals' Success

Personal values have been considered in many different research areas. Researchers have included personal values as an important aspect in their studies. Such studies include environmental studies (e.g. Papagiannakis & Lioukas, 2012; Lee, 2011), mall shopping behaviour (e.g. Shim & Eastlick, 1998; Cai & Shannon, 2012), food consumption (e.g. Vermeir & Verbeke, 2008; Hauser *et al.*, 2011).

Personal values have also been considered in a number of studies in relation to IS adoption. For example, in the electronic shopping (e-shopping) context, Jayawardhena (2004) conducted a study to enhance the understanding of electronic consumers’ (e-consumers) purchase behaviour by taking into consideration the effects of personal values on consumer attitude and behaviour.

Jayawardhena (2004) followed the value-attitude-behaviour model that is widely used to examine the role of personal values in various contexts. Jayawardhena (2004) found that: "Individual attitudes towards e-shopping were a direct predictor of e-shopping behaviour and mediated the relationship between personal values and behaviour. His findings on the relationship among personal values, attitudes and behaviour may be exploited by e-tailers to position e-shops and to provide a persuasive means for e-shoppers to satisfy their needs. Moreover, Haag *et al.* (2009) also explored the relationship between personal values and personal knowledge development in e-learning environments.

The rationale of considering personal values in our study is based on the argument made by Schwartz and Bilsky (1987). They point out that the impacts of values as independent variables on both attitudes and behaviour can be predicted, and interpreted more effectively by using indexes of the importance of value domains as opposed to single values. Adopting the personal value theory in the context of e-government portals will enable us to use this theory to explain the role of personal values in affecting individuals' perceptions on the e-government portals success.

RESEARCH METHOD

To know which of the ten personal values are mostly relevant to e-government portals success, a Delphi study was conducted with a panel of experts. The aim of this Delphi study was to investigate which value types are particularly relevant to e-government portals' success from an individual user's perspective. The result of this Delphi study will be used later in a PhD research to examine to what extent, and how, the identified value types affect e-government portals' success.

Delphi Method

The Delphi method seeks to obtain consensus on the opinions of experts through a series of questionnaires that collect and aggregate informed judgements on specific questions or issues (Duan *et al.*, 2010). The Delphi method has been widely used in various research disciplines and has become an important technique in a variety of research areas (e.g. engineering, technology, social sciences, business administration and physical sciences) (Krishnaswamy *et al.*, 2009). It has been a very useful method in IS research (Okoli & Pawlowski, 2004; Gonzalez *et al.*, 2010; Brügger & Willems, 2009).

A Delphi method is suitable when researchers or practitioners find no sufficient information to rely on to make decisions. Consequently, researchers seek the help from experts in the field of their research and conduct their study in the form of a series of questionnaires in one or more rounds (Krishnaswamy *et al.*, 2009; Skulmoski *et al.*, 2007). The number of rounds that is required to arrive at an acceptable level of consensus can differ. Some researchers can reach an acceptable consensus in two rounds (Turoff, 1970). However, some studies carried out a Delphi study using only one round (Skulmoski *et al.*, 2007). This is because the prime goal of a Delphi method is not to carry out specific number of rounds but to obtain a significant and substantial consensus among experts (Krishnaswamy *et al.*, 2009).

The key advantage of this method is to avoid direct interaction and confrontation between the experts (Okoli & Pawlowski, 2004). This will enable the nominated experts not to provide their opinions under the influence of other experts since the opinions are provided in an anonymous manner.

The Delphi method is adopted in this study for a number of reasons. First, this study is to examine which value types are relevant to e-government portals' success. This ambiguous issue which has not been investigated in the literature requires knowledge from people who understand factors affecting IS success, e-government, and cultural and personal values. Second, the Delphi study method allows the researchers to collect richer data leading to a deeper understanding of the research questions.

Expert Selection

A Delphi study requires qualified experts with a deep understanding of the issues. According to Okoli & Pawlowski (2004) choosing appropriate experts is the most important but also the most neglected part of a Delphi study. Therefore, great caution has been taken when selecting experts in this study. The main goal of the research was to determine which of the ten individual-level value types are particularly relevant to e-government portals' success. The research theme covers three major research streams that are e-government, websites evaluation and personal values/cultural studies. Forty experts were invited to participate. All of them were selected based on their publications, esteem in the field and experience from the information published on their personal website. They have demonstrated extensive knowledge and understanding of the chosen fields. For example, some experts were identified through research on the relevant journal editorial board members.

There is a lack of agreement between scholars on the number of experts required for a Delphi study. Some researchers (e.g. Brockhoff, 1975) suggest that the minimum number of experts needed in order to get valid results is four. Others, such as Okoli & Pawlowski (2004) suggest to use 10-18 experts. Although forty experts were invited to participate in the study, we expected to have over 10 experts to participate in all rounds of surveys until a satisfactory consensus level is achieved.

Data Collection Procedure

The data were collected in two rounds. In the first round, a questionnaire was adapted based on the questionnaire of Haag (2010). The questionnaire was divided into different sections and intended to be as short and simple as possible in order to increase the response rate.

In the first round, the following information was collected:

6. Section one provides instructions to participants on how to participate in this Delphi study.
7. Section two provides background information about the Delphi study.
8. Section three collects participant's demographic information.
9. Section four asks the participants to select no more than five value types based on their judgement. These value types should be either particularly relevant or have a significant impact on e-government portals' success. The participants were invited to add their justification.

10. Section five explains the value types under investigation. This section lists all the ten individual-level value types along with their definitions and explanations from different sources of information.

E-mails were sent to forty experts to brief them about the Delphi study. The experts had the option to fill in the Word document questionnaire or the online version. Two rounds of reminder e-mails were sent. Eleven experts out of forty responded to the survey in the first round, which represents a response rate of 28%.

The level of consensus in the first round was not sufficient and another round was carried out. Based on the compiled results, customised e-mails were sent to the eleven respondents. Each e-mail included the compiled results along with the selected value types by that particular respondent. In the second round, the experts were requested to rank no more than five value types from 1 to 5, where 1=least relevant and 5=most relevant. All the 11 experts responded to the second round. Reminder e-mails were sent once to some of the respondents who did eventually respond by the specified deadline.

RESULTS AND ANALYSIS

This section is divided into two main parts based on the number of rounds carried out in this Delphi study. The first part summarizes the results of the first round. The second part summarizes and discuss the results of the second round and their implications on this stage of the PhD and the future stages.

Results of the First Round

Eleven responses were received after sending reminder e-mails to all the nominated experts twice. The results have been compiled and presented in Table 3. The percentage of agreement was calculated by dividing the number of responses by the number of respondents and multiply it to 100.

TABLE 3 DELPHI STUDY: FIRST ROUND RESULTS

Value type	Selecting Value Types as Particularly Relevant To/ Having an Impact on e-Government Portals' Success	
	Total Number of Respondents: 11	
	No. of responses	Percentage
Self-direction	9	82%
Stimulation	7	64%
Security	7	64%
Tradition	5	45%
Conformity	5	45%
Achievement	4	36%
Hedonism	4	36%
Power	4	36%
Universalism	3	26%
Benevolence	1	9%

As it can be seen in this table, Self-direction has the highest level of agreement. The remaining value types have medium, low and very low level of agreement. The last two value types, namely universalism and benevolence, showed the least level of agreement (26% and 9%, respectively) and it was decided to remove them from the second round.

Results of the Second Round

The percentage of the level of agreement was calculated in this round based on the rankings given by the respondents. The level of agreement for each of the remaining eight value types was calculated by dividing the average of the rankings by the number of responses for each value type. The value types are listed in descending order based on the average rankings in Table 4.

TABLE 4 DELPHI STUDY: SECOND ROUND RESULTS

Selecting Value Types as Particularly Relevant To/Having an Impact of e-Government Portals' Success			
Value Type	Total Number of Respondents: 11		
	No. of Responses	Sum of Rankings = \sumRankings	Percentage of Agreement = $(\sum \text{Rankings} / 55) * 100$
Self-direction	10	39	71%
Security	10	38	69%
Stimulation	9	34	62%
Tradition	9	28	51%
Conformity	7	19	35%
Achievement	6	17	31%
Power	5	13	24%
Hedonism	4	7	13%

Based on the calculations in Table 4, a summary of the levels of agreement for the two rounds is provided in Table 5. It can be seen that the levels of agreement in both rounds are quite similar.

TABLE 5 COMPARISONS BETWEEN THE FIRST AND THE SECOND ROUND

Selecting Value Types as Particularly Relevant To/Having an Impact of e-Government Portals' Success			
Total Number of Respondents: 11			
Percentage of Agreement			
Value type	Round 1	Value type	Round 2
Self-direction	82%	Self-direction	71%
Security	64%	Security	69%
Stimulation	64%	Stimulation	62%
Tradition	45%	Tradition	51%
Conformity	45%	Conformity	35%
Achievement	36%	Achievement	31%
Power	36%	Power	24%
Hedonism	36%	Hedonism	13%

DISCUSSION

The ranking of the importance of the personal value types helps to identify the most relevant value types to e-government portals' success. Thus, these values were added to the proposed framework that is going to be tested in the context of Saudi Arabian e-government portals.

In this section, the opinions given by the expert panel in the first round are illustrated and discussed. It is noted that most of the comments were made when an expert felt that the value type is particularly relevant to e-government portals' success. Very few comments were given by the experts on why other values types are less relevant to e-government portals' success. Therefore, it can be noted that the comments presented in this section are largely supporting the relevance of value types to e-government portals' success. In the following discussion, some comments by the experts regarding self-direction, security, stimulation and tradition are presented and discussed.

Self-Direction

Self-direction is the highest ranked value type in this Delphi study. Experts gave different justifications for selecting self-direction as particularly relevant to e-government portal's success.

One of the experts commented: "By visiting the e-government portal, you often have a particular aim in mind, i.e. something you want to achieve, e.g. submitting a particular request". This comment points to one of the measurement items of self-direction which is "Choosing our own goals" (Schwartz, 1992). This might mean that an e-government user who scores high on self-direction might

want to share his goals/purposes of using the portals with others (i.e. government organizations, officials, users, etc). He/she might not want the others (i.e. government organization) to be dominant in specifying the goals of creating or using the portal. Moreover, those users who score high on self-direction may think that it is important to be interested in using e-government portals in general and also to be independent (i.e. not to rely on the public sector organizations' employees to do things and to be restricted by their rules to get information or receive services).

Another expert commented: "Freedom in terms of time and place is the biggest thing that an e-government user is looking for, as he/she does not want to visit the government office but do things online at a convenient time and place". This comment clearly relates to the measurement item "Freedom" (Schwartz, 1992). This suggests that a person who scores high on self-direction may be eager not to be restricted by the time and place to receive the e-government services. He/she believes that dealing with the government can be conducted in a convenient manner regardless of time and location restrictions.

One of the experts pointed out that "an e-government user who scores high on self-direction is likely to be independent and do not prefer to be under the control of the others". This person might not like to be controlled by the public sector employees and does not prefer to interact with them face-to-face. Almalki *et al.* (2012) identified that one of the reasons why users prefer to use available e-government services is that one may be able to avoid the possibility of corruption that exists when visiting offices and ask for services in a face-to-face setting. This may indicate that when dealing with government organizations, interacting with government employees and being controlled by them can be seen as a negative experience due to the possible administrative and/or financial corruptions.

Security

First of all, it is crucial to distinguish between the term "security" in the context of human values and in the context of IT. In the context of human values the definition of security given by Schwartz *et al.* (2001) is as follows: "Safety, harmony and stability of society, of relationships, and of self". In the context of IT and its applications, security is mainly defined as protecting users from fraud/financial loss and ensuring that a transaction is carried out as it was supposed to be (Papadomichelaki & Mentzas, 2012).

The issue of security has received a lot of interest in IS research. In developed countries, security is given great attention in various applications of IS such as online banking (Yuen *et al.*, 2010). According to Yuen *et al.* (2010), commenting on security in online banking, they suggest that users in developed countries enjoy more security and better privacy measures and legislation. This should be considered with the same importance in the field of e-government because some services could involve money transfer. In sum, security is an important factor in whether or not individuals will use web-based services (Belanger & Hiller, 2006).

In the context of e-government, the users are expected to provide more personal information when making transactions with e-government systems, in which they expose themselves to viruses, hacker attacks and identity theft (Kaisara & Pather, 2011). This makes security one of the worrying issues when

using computers in general and being connected to the Internet in particular. Moreover, the expert panel has ranked security as one of the values that is particularly relevant to e-government portals' success. Therefore, an e-government portals' user who scores high on security as a value may score high as well on measurement items related to financial risk, security risk, and privacy risk.

The experts in this Delphi study look at security from a different point of view. The first comment raises a concern about the relationship between the government and the individuals: "I think this is very important. If I use an e-government portal, I do not want the government to use my interaction against me. There needs to be trust that my data is not misused". The other two comments discuss the issues of security and privacy when using the e-government portal: "I guess this may be very important because users should feel that the shared information is safe and secure", whereas the other comment states: "Users will use the portal when they have the feeling that their user data is safe".

Stimulation

Stimulation is defined as "Excitement, novelty, and challenge in life" (Schwartz, 1992). In the context of using IT in general and e-government systems in particular, it is expected that the stimulation value may drive a person to leave the traditional method of receiving government services and utilize e-government systems. Using e-government is still a relatively new method of interacting with governments. This has been expressed by different experts in slightly different terms. One of the experts stated: "Using e-government portals might be for some people a relatively new and exciting approach to search for information provided by public bodies. Browsing and exploring e-government portals could also be interesting and stimulating to people and make them want to find out more about the services public bodies can offer".

One of the experts stated that the stimulation should come from the e-government systems itself. These systems should include means to foster a user's engagement with the site: "An e-government system, like all interactive systems, should stimulate me and provide means to foster my engagement with the site. I need to have a positive user experience; I think this is the one of the crucial factors for a portal' success and the reason why I may choose the portal over just picking up the phone".

Another expert mentioned that there is a "need to define 'success' of e-government portals. If it is increased usage by public, I see using e-government portal may make certain people feel convenient, thus an enjoyable thing to get things done". In this situation, the e-government users will be stimulated after using e-government portal and feel convenient when using it. Both of the previous comments may indicate that the e-government user who scores high on stimulation is likely to score high on the quality dimensions of an e-government portal.

Tradition

When governments deliver services to their clients (i.e citizens and residents), their services can be categorized into two major types: the traditional way of visiting the government office in person or using telephone (Heeks, 2008),

and the new way of using the e-government systems to obtain the information/services. Using e-government portals is an example of the second type of governments' services delivery.

Generally, clients expect a better quality of services delivery via e-government portals. According to Lin *et al.* (2011), Gambians using e-government websites tend to expect more efficiency and effectiveness of online services compared to the traditional face-to-face/counter approach. However, this is not something that can be generalized to all clients. Based on the definition of the tradition value, i.e. “respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide” (Schwartz, 1992) and its explanation given by Changingminds.org (2012) that “The traditionalist respects that which has gone before, doing things simply because they are customary. They are conservatives in the original sense, seeking to preserve the world order as is. Any change makes them uncomfortable”; clients who are supposed to be traditionalist are likely to be reluctant to use e-government portals. This is due to their internal belief that they respect what has gone before which is visiting the government office to interact face-face to the employees.

One of the experts on the panel commented on what could be the relationship between people who can be described as traditionalist and using e-government portals by saying: “scoring high on tradition might have a negative effect here. People might prefer the old-fashioned way of getting government information or they might prefer to deal with real people that can be advice them face-to-face”.

Another expert discussed the importance of the tradition value and stressed that e-government portals should not disrupt a user's traditions: “this may also be important for users to feel that e-government does not disrupt their traditions. but this may vary a lot for different individuals”. One expert recommended that, when users use e-government portals, they should not feel that they are disconnected from what they used to do with the government offices and the e-government portals should be implemented based on their requirements. This can be achieved, as the expert suggested, as follows: “[a] system will be easier to use when users find features/information/functionality that they know from the 'offline world' and they can connect to”.

CONCLUSION

To understand the e-government portal success from an individual's point of view, it is argued that personal values play an important role. The ten basic values identified by Schwartz have been recognized as a valuable instrument to measure various dimensions of personal values. They have been used in different studies to establish the relationships between personal values and their impact on the chosen issues. However, not all of the ten values may be equally relevant to e-government success. Therefore, this study aims to identify the most relevant value types to the e-government portals' success. The findings will lead a more focused approach in developing and testing a framework for e-government portal success evaluation.

The findings of this Delphi study show that self-direction, security, stimulation and tradition have been selected from the ten individual-level value types with regard to their relevance to e-government portal's success. These preliminary findings provide valuable insights and a sound basis for future

research. For example, these four value types will be included in a theoretical framework of a PhD research. The framework will be tested along with other dimensions in the next stage of the research to further validate the relevance and extent of the impact of personal values on e-government success in Saudi Arabia.

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