An Investigation of the Impact Factors to Increase Citizens' Engagement in E-participation on E-government in Saudi Arabia

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Certificate of Original Authorship

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Student:

Date: 29 June 2016

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List of Publications

The following research papers were published from the work undertaken by the author during the course of this PhD research study.

- Alharbi, A.M. & Kang, K. 2012, 'The Impact of Culture on Government Web-Services Development: A Case study E-participation Development in Saudi Arabia', *26th International Business Information Management Association (IBIMA) Conference*, IBIMA Publishing, Barcelona, Spain, pp. 298-305.
- Alharbi, A.M. & Kang, K. 2014, 'E-Participation Service in Saudi Arabian e-Government Websites: The Influencing Factors From Citizens Perspective', *14th European Conference on eGovernment ECEG 2014***,** Academic Conferences and Publishing International Limited Reading, Brasov, Romania, pp. 265-272.
- Alharbi, A, Kang, K, and Alattas, M, 2015, "The Challenges of E-participation in Saudi Arabian E-government Websites: From Government Perspective", *25th International Business Information Management Association (IBIMA) Conference*, Amsterdam, Netherlands, 7-8 May 2015
- Alharbi, A, Kang, K and Hawryszkiewycz, I, 2015, "The Influence of Trust and Subjective Norms on Citizens' Intentions to Engage in E-participation in E-government Websites", *26th Australian conference on information systems (ACIS)*, Adelaide, Australia
- Alharbi, A and Kang, K, 2015, "Key Aspects of Citizen Engagement in E-Participation on E-Government Websites", *26th International Business Information Management Association (IBIMA) Conference*, Madrid, Spain, 11-12 November 2015
- Alharbi, A.M. & Kang, K. 2016, 'Factors Affecting Citizen Engagement in E-participation on E-government Website: S-O-R Approach'**,** *16th European Conference on eGovernment ECEG 2016***,** Academic Conferences and Publishing International Limited Reading, Ljubljana, Slovenia (*Abstract accepted*)
- Alharbi, A, Kang. K & Sohaib, O 2016, "Citizens Engagement in E-participation on E-government Websites through SWAT Model: A Case of Saudi Arabia", *the 20th Pacific Asia Conference on Information Systems (PACIS 2016), Chiayi, Taiwan*

Abstract

The growing use of web technologies has significantly influenced how governments work and provide services to citizens. Electronic government (e-government) has been one of the major developments in recent years in both developing and developed countries. The main objective of e-government is not limited to access information but also to create new ways to improve processes, integrate government services and increase interaction with citizens. One of these ways is electronic participation (e-participation), which offers citizens a two-way communication between them and the government. E-participation, a subset of e-government, has become a common phenomenon in the governments, which are serious about using the Information and Communication Technologies (ICT) for strengthening the government-citizen relationship, such as the use of social networking services, online polls, discussion forum and blogs etc. Unlike traditional methods of communication between citizens and governments, e-participation activities on e-government websites enhance communication and enable citizens to become actively involved in the policy-making process. While there are many researches conducted in the field of e-government, most of these researches investigate the adoption/usage of e-government. However, previous studies failed to investigate citizens' intention to engage in e-participation activities. The purpose of this research is to investigate the key factors that influence on citizens' intention to engage in e-participation activities on e-government websites in Saudi Arabia. Based on literature review a conceptual model for e-participation on e-government websites proposed. Data was collected from Saudi citizens to find out their perceptions towards e-participation. Following this aim, this research answers the following main question: What are the key factors that influence on citizens' intention to engage in E-participation on E-government websites in Saudi Arabia?

In order to answer the research question, a mixed-method research approach is employed in this study, which incorporated both quantitative and qualitative research approaches. First, a quantitative approach was applied to empirically test the relationship among the constructs of the proposed model. An online survey instrument is used as the method of data collection from Saudi Arabia citizens. A sample of 770 responses was used for data analysis. The data was analyzed using a structural equation modelling(SEM) statistical techniques using AMOS 22.0 to estimate the relationships

between the different factors in the research model. Secondly, a qualitative study (a focus group discussion) was used to validate the survey results and provide more insights into the relationships identified. The participants in the focus groups were also the Saudi citizens. One focus group discussion, which consisted of eight participants, was conducted in this study. The participants' responses throughout the discussion were recorded and transcribed for analysis.

The quantitative results show that the proposed model is strongly supported by the data. The results of the focus group revealed the various factors influencing in citizens' intentions to engage in e-participation, thus supporting the hypotheses and consistent with the quantitative results. The analysis of both the survey and focus group discussion results confirmed that trust, attitude, web design and subjective norms strongly influence citizens' intention to engage in e-participation activities on e-government websites.

This study contributes to the knowledge by providing an important insight and a better understanding of citizens' intention to engage in e-participation activities on e-government websites in Saudi Arabia. The findings of this study will assist Saudi local government leaders and managers to better understand the major issues facing e-participation and enable analysis of the extent to which citizens' online inputs reflect community-wide interests.

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CHAPTER 1 INTRODUCTION

This chapter presents a brief overview of this study on the citizens' intention to engage in e-participation in the Saudi e-government context. The first section of the chapter outlines the background of the research problem and identifies the research's aim and objectives. The research questions and the significance of this study are then presented, followed by a description of the research methodology described. The chapter concludes with an outline of the thesis.

1.1 Research Background

E-government (electronic government) is one of the major developments in the field of information technology in the last decade.E-government refers to attempts by governments to use information and communication technology (ICT) to deliver government services to citizens, businesses and government agencies using the Internet. Manycountries have adopted e-government to improve and enhance the quality of government services provided, reduce costs and increase transparency, effectiveness and efficiency in the public sector(Alshehri and Drew, 2011). The main objective of e-government is to use ICT to access information and to create new ways to improve processes, improve the integration of government services and increase interaction with citizens(Ebrahim and Irani, 2005).Different governments have developed a number of diverse e-government services to do this, such as websites designed to improve governments' relationship with their citizens. Electronic participation (e-participation) is one of these services.

E-participation, a subset of e-government, is commonly used by governments who wish to focus on using ICT to strengthen the government–citizen relationship. E-participation services offer a form of two-way communication between citizens and governments. E-participation is usually viewed from the perspective of using a range of ICT tools such as (social networking sites, online survey, online forum,…etc) to provide more opportunities for consultation and to enable a dialogue between government and citizens (Larsen and Milakovich, 2005).

The growing use of web technologies has significantly influenced how governments work and provide services to citizens. It has also affected the manner in which citizens

interact and communicate with governments. Government 2.0 utilizes Web 2.0 technologies to socialize governments' online services and data(Nam, 2012). Collaborative technologies permit two-way interactions between citizens and governments through online comments and live chats (Nam, 2012). The increased use of web technologies has also influenced how governments perform their functions. The wide range of available social networking sites and the tools used by e-government websites, including forums and blogs, also provide insights into citizens' perceptions and opinions.

In recent years, the area of e-participation has experienced significant advancements. Previous studies have explored the process of e-participation and the models used to enhance it(Macintosh and Whyte, 2008). However, to date, little attention has been given to the factors affecting citizens' engagement in e-participation(Alharbi and Kang, 2014). Thus, large gaps exist in relation to our understanding of citizens' engagement with e-participation sites. A continuing challenge for governments using online tools is a lack of participation by citizens. A number of e-participation studies have highlighted citizens' lack of engagement in e-participation activities (Nam, 2012, Reddick, 2011). For example, Reddick (2011) asserts that citizens are highly unlikely to use the Internet, particularly e-government websites, for participatory and counseling activities. This is an issue for governments who wish to use e-government, as the complete benefits of e-participation cannot be realized until citizens actually engage with and use these tools. There is little information available on what deters and facilitates citizens in using e-participation services. Such unsolved issues create practical challenges for e-government leaders who need to make informed decisions in relation to e-participation tools to provide quality services to citizens.

Previous studies have shown that various factors affect the intentions of citizens to use e-participation tools (Hung et al., 2006, Nam, 2012, Scherer and Wimmer, 2014). However, these studies have mainly considered Western countries. Little research has been undertaken in developing countries, such as Saudi Arabia. The government of the Kingdom of Saudi Arabia places immense importance on this subset of e-government tools with the aim of acquiring the benefits of e-participation and strengthening the relationship between the government and its citizens. Reflecting the importance of e-government tools to the government, Saudi Arabia's second e-government action plan (2012–2016) made e-participation a strategic work stream(Yesser, 2012b) . A recent

report from the United Nations (UN)(United Nations, 2014)ranks Saudi Arabia 36th in providing e-government services; however, despite significant investments being made in e-government services, Saudi Arabia ranked 51st in relation to e-participation. This reflects a low level of citizen engagement in e-participation activities.

Saudi Arabian culture is conservative, and its traditions and cultural values affect every aspect of life (Al-Shehry et al., 2006). The government of Saudi Arabia has acknowledged such issues and consequentially e-government services have been introduced to Saudi citizens to obtain advantages of e-government services. E-participation acceptance by citizens is therefore critical because it would encourage meaningful changes in Saudi culture. Research has shown that individual attitudes(Pons, 2004), trust (Bélanger and Carter, 2008), subjective norms (Hung et al. 2006) and web design (Segovia et al., 2009a) are core factors in determining individual's intentions regarding the usage of information technology, such as e-participation in e-government websites. However, these factors have previously been primarily discussed based on Western culture. There is a lack of research within the Saudi Arabia context.

1.2 Purpose of the Study

E-participation is an emerging but underexplored area of research in terms of citizen participation. The aim of this study is to investigate the underlying factors that influence citizens' intentions to engage in e-participation activities on Saudi e-government websites. To meet this aim, this research has the following objectives:

- To develop a research model for conceptualizing and explaining citizens' intention to engage in e-participation
- To empirically test the proposed model in the context of Saudi Arabian e-government.
- To increase the theoretical knowledge and understanding of e-participation by extending the existing research
- To provide evidence of how the Saudi Arabian government can increase awareness and thus engagement in e-participation.

1.3 Research Questions

This research answers the following main question**:**

What are the key factors that influence citizens' intention to engage in e-participation on e-government websites in Saudi Arabia?

This research question is further divided into sub questions in order to describe the research context as well as add depth to the understanding of e-participation engagement in the Saudi context. The relevant sub questions are as follows:

1. How does citizens' attitude affect intention to engage in e-participation activities in the Saudi Arabian e-government context?
2. How does citizens' trust affect intention to engage in e-participation in the Saudi Arabian e-government context?
3. How do the citizens' subjective norms intention to engage in e-participation in the Saudi Arabian e-government context?
4. How does e-government website design affect citizens' intention to engage in e-participation in the Saudi Arabian e-government context?

1.4 Significance of the Study

While there are many research studies examining e-government, most of these studies investigate the adoption and/or usage of e-government. Previous studies have failed to investigate citizens' intention to use e-participation, in particular in Saudi Arabia. Governments around the world have implemented e-participation tools on their websites to encourage citizen participation. However, there has been minimal take-up of some of the e-participation initiatives. Understanding the factors influencing citizens' intentions to engage in e-participation will assist local government leaders and managers to better understand the major issues facing e-participation and enable an analysis of the extent to which citizens' online inputs reflect community-wide interests. Citizens' trust, attitude, website design and subjective norms are factors that have been studied in relation to e-participation and e-government. As existing research studies these factors in the context of developed countries, this study examines their influence in the developing country of Saudi Arabia. This is the first research to investigate this phenomenon in Saudi Arabia. The significance of this study is as follows.

- This research aims to help Saudi government bodies become more successful in moving from traditional citizen participation to electronic participation by identifying the key factors (such as trust, attitude, subjective norms and web design) that influence e-participation adoption.

- The key findings of this study will benefit the Saudi Arabian government, which has made substantial investments in e-government development initiatives to improve public services.
- The research findings will help Saudi e-government think tanks to better formulate the policy framework with respect to e-participation.
- Using the findings of this study, Saudi Arabian government officials will be in a better position to identify and trace the shortcomings of the current e-participation services.
- This study will provide guidelines for Saudi Arabian government officials to improve e-participation services. Countries with similar contexts and characteristics can use the guidelines.
- This study will contribute to the knowledge by providing a comprehensive theoretical model of e-participation.

1.5 Research Methodology Overview

The research method of this study is a mixed-method approach using quantitative and qualitative methodologies to consider positivist and interpretive approaches in order to represent as accurately as possible the phenomenon under investigation(Neuman, 2005). In the first phase (quantitative analysis), a survey was developed based on previously validated instruments. The survey questionnaire was used for data collection. The survey (questionnaire) is one of the most common research methods in technology adoption studies, as it has a set of specific questions to cover the research topic and can target a large number of respondents in a practical and effective way (Carter and Belanger, 2005).To test and validate the hypotheses, data was collected from Saudi Arabian citizens. The purpose of this study is to test what influences e-participation in a Saudi Arabian context. Therefore, the sample for this study was Saudi citizens who have an experience in using the Internet and e-government websites.

The proposed model in this study includes 13 constructs and multiple items with a five-point Likert scale measure for each construct. Previously validated survey measures were used in order to ensure the items are reliable. The questionnaire was developed originally in English and was then translated to Arabic. Once the questionnaire was collected, statistical analysis (descriptive and measurement scale analysis) was conducted to test the hypotheses and answer the research questions. The data was

analyzed using structural equation modelling (SEM) statistical techniques using the SPSS (Version 22.00) and Amos (Version 22.0) programs. Both exploratory and confirmatory analysis procedures were employed to estimate the relationships between the different factors of the research model.

In the second phase of the study (the qualitative analysis), the conceptual model was tested by conducting focus group interviews to validate the quantitative results. To correctly confirm the findings of the quantitative study, it is important to match the sampling frame of the focus group with that of the survey study (quantitative). Therefore, the participants in the focus groups were also Saudi citizens. A detailed description of the research method is presented in Chapter 4.

1.6 Thesis Outline

This thesis consists of seven chapters. This chapter, Chapter 1, introduces the research problem and presents the research aim and objectives, research questions and significance of the study. It also provides an overview of the research methodology and thesis structure. Chapter 2 focuses on an extensive literature review. This chapter presents an introduction to e-government and e-participation. Then, background information about Saudi Arabia's e-government development plans, including their information and communication technology (ICT) facets, is discussed. This chapter aims to identify the issues that have not been adequately explored in previous research. The issues were identified by doing a literature review of existing research on the various factors affecting the intention to engage citizens in e-participation in e-government websites.

Chapter 3 presents the proposed research model and related hypotheses. Firstly, based upon the literature review conducted in Chapter 2, this chapter further explains the related theories and models that provide the foundation of the research model to address the identified knowledge gap. The justification for each of the hypotheses associated with the research model is then provided. The outcome of this chapter is the proposed conceptual model. Chapter 4 describes the research methodology adopted in this study. Firstly, the research design is explained, then the quantitative approach is presented, including the instruments used for this study. The population and sample are also described along with the data collection and the data analysis procedure used in this study. Following that, the qualitative approach of this study, a focus group including data collection and data analysis, is presented.

Chapter 5 presents the quantitative data analyses, including descriptive results and the data analyses to test the hypotheses. The chapter begins by presenting the profiles of the participants and then screening of the survey data. The reason of screening the data is to ensure that it is suitable for the multivariate analysis such as Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM). Chapter 6 presents the qualitative analysis data analyses acquired from the focus group. The chapter begins by identifying the aim of the focus group followed by a discussion of respondents' profiles. Then, the relevant statements made by the respondents were interpreted. The analyses were compared to the quantitative analysis to validate the hypotheses.

Chapter 7 discusses the findings of this study. It addresses the implications for academics and practitioners. Then, a summary of this study is presented and the research limitations acknowledged. Directions for future research are also identified.

Finally, a reference list and appendices are provided. Figure 1.1 shows the thesis structure.

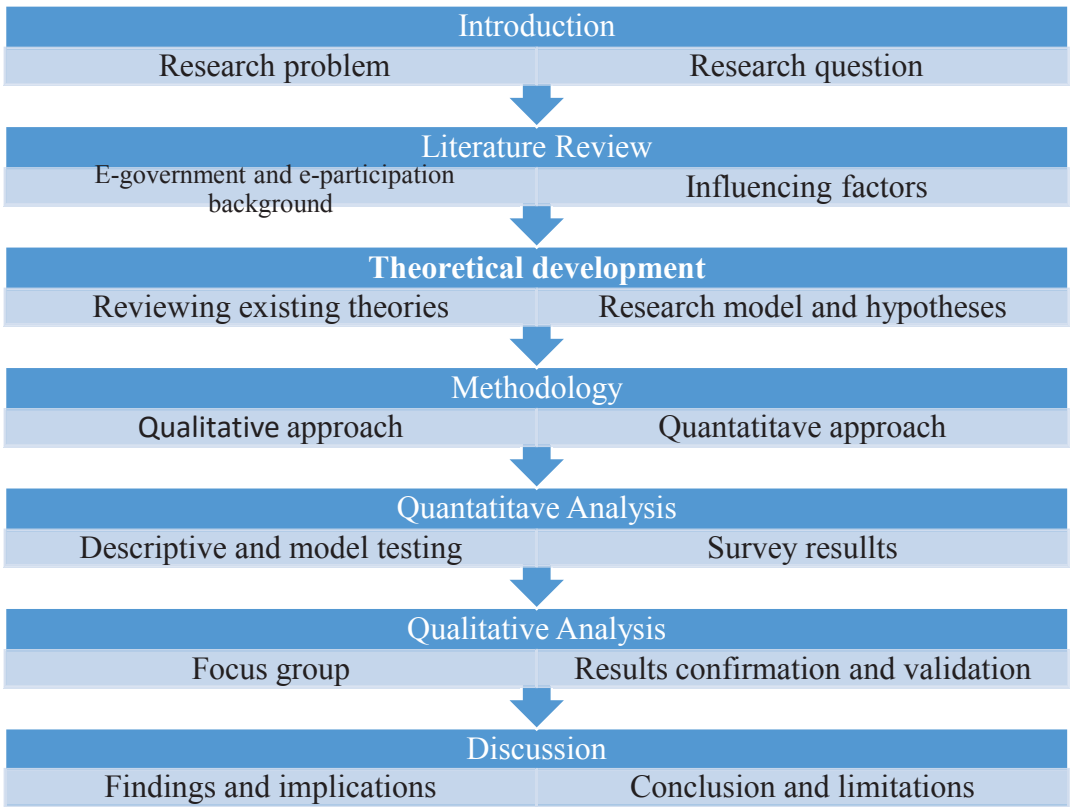

Figure 1.1: Thesis structure

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

The main objective of this chapter is to present a background about e-government and e-participation concepts. The relevant literature is reviewed to provide a foundation on which to build the research model, which is presented in Chapter 3. Firstly, this chapter discusses the e-government and the initiatives in Saudi Arabia concerning e-government. Then, e-participation is discussed followed by a review of the existing literature on various factors affecting the intention to engage citizens in e-participation in e-government websites.

2.2 Electronic Government (e-government)

Electronic government (e-government) is one of the major developments in the field of Information Technology (IT). E-government is using Information and Communication Technologies (ICT) to deliver governmental services to the public. Many countries have adopted e-government as a tool to improve the quality of government services(Alqahtani et al., 2014), reduce costs and increase transparency, efficiency and effectiveness in the public sector (Alshehri and Drew, 2011, Hu et al., 2014). The main objectives of e-government are to use ICT to access information while at the same time creating new ways to improve processes and the integration of government services (Ebrahim and Irani, 2005, Alqahtani et al., 2014). The United Nations E-Government Survey *E-Government for the People* (2012) found that many governments around the world have established e-government projects that are aimed at enhancing the efficiency of the public sector as well as streamlining systems of governance in order to support and ensure sustainable development (United Nations 2012). These findings are in agreement with the findings of Alshehri and Drew (2011) and Ebrahim and Irani (2005), who state that enhancing the efficiency of the public sector appears to be the key objective of e-government initiatives. This following section explains e-government in detail.

2.2.1 Definition of E-government

E-government is a significant phenomenon in government communication policy. The potential of e-government has received the attention of many nations around the world (Shareef et al., 2011). The possibilities of e-government are always improving due to

the rapid development of emerging information and communication technologies (ICTs). However, despite its increasing recognition, there is no single agreed-upon definition of the term e-government (Yildiz, 2007, Gil-Garcia, 2012). Researchers have defined e-government from different perspectives. These can be broadly categorized as the stakeholder perspective, the technological perspective and the service delivery perspective. These definitions are discussed in the following paragraphs.

The viewpoint of the shareholder focuses primarily on who the e-services are provided to (for example, the clients of the e-government). According to Carter and Bélanger (2005), e-government refers to the use of IT capacities for facilitating and enhancing the speed at which government resources are delivered to citizens, communities, workers, companies, and local authorities. The work of Abramson and Means (2001) describes e-government as online communications between governments, citizens, and companies. This interaction can take the form of delivery e-services or sharing data. Evans and Yen (2006) also describe e-government as the exchanges between a government and it citizens, via IT and the online sphere.

The technological perspective focuses on how e-services are delivered and tends to emphasize how e-government has advanced through technological media. For example, Koh and Prybutok(2003) refer to e-government as the using ICT technologies in all practices of governmental organizations. According to Gil-Garcia (2012), e-government is the use of ICT by government, from fax machines and computers to emerging technologies such as Web 2.0 tools, social media and open government applications. According to Reddick (2011), e-government refers to the way in which the public industries utilise information and communication technologies (ICT) to provide data and resources to communities, via the web or additional digital channels. This happens all day, every day, throughout every week. According to a World Bank report (2012), e-government is the set of processes, including the use of ICT, which helps government to maintain interaction between citizens, business organizations and other government agencies.

The service delivery perspective explains what online services are delivered and focuses on the transfer of government services. For example, Irani et al. (2005) describe e-government as the distribution of information and online services to individual citizens and businesses. The potential benefits of service delivery are the focus on the transformation of e-government(Hu et al., 2012). According to a UN e-government

report *E-Government for the People* (2012), e-government is considered as the process of delivering governmental services and information to citizens via the Internet.

It is evident from the above definitions that e-government essentially consists of three main perspectives: the delivery of government services; the stakeholders to whom these services are delivered; and the use of ICTs. Drawing together these three perspectives, Moon (2002) defines e-government as a means to deliver government services to citizens through information technology (IT) applications.

The current study focuses on the citizens of Saudi Arabia as the main adopters of e-government services. Therefore, the definition of e-government used in this research should focus on the citizens as the stakeholders who are the recipients of government services. Hence, in the context of this study, the researcher defines e-government as a method through which government services are conveyed to citizens via the Internet. The following section elaborates on the different aspects of e-government.

2.2.2 Types of E-government

As discussed in the previous section, the primary objective of e-government is to provide services more easily to its end users. These services vary according to the needs of the end users. This difference in services provided to citizens has produced various forms of e-government applications; therefore, there are various types of e-government approaches that have been adopted throughout the world in order to bring the desired benefits to citizens, employees, businesses, social and political organizations and nongovernmental organizations (Pons, 2004, Carter and Belanger, 2005, Zhang et al., 2009, Al Nagi and Hamdan, 2009). DeBenedictis et al. (2002) define the various categories of e-government as government-to-business (G2B), government-to-government (G2G), government-to-employees (G2E) and government-to-citizens (G2C).These categories are discussed further below.

2.2.2.1 Government to Business (G2B)

The purpose of the government-to-business model is to engage various government departments/agencies in formal interactions with external private business companies. The focus of G2B is on e-commerce arrangements between business and government.

These online businesses include online selling, purchasing and online transactions (DeBenedictis et al. 2002). This model also permits e-procurement and the development of an electronic business for government (Fang, 2002).

2.2.2.2 Government to Government (G2G)

As the name implies, this model explains government-to-government (G2G) relationships. The interaction can be between local government departments or even to foreign governments. This form of e-government also includes data and information-sharing and other forms of electronic services (DeBenedictis et al. 2002). Palvia and Sharma (2007) highlight that the efficient and effective distribution of online services occurs largely as a result of government interaction at the national and international level.

2.2.2.3 Government to Employee (G2E)

Government to-employee (G2E) initiatives focus on the online communication between government departments and their employees(Belanger and Hiller, 2006). Because government employees often work in different geographic locations, G2E applications may be useful in efficient collaboration(Evans and Yen, 2006). Examples of G2E include the use of an intranet or other web-based applications (Belanger and Hiller 2006).

2.2.2.4 Government to Citizen (G2C)

The government-to-citizens model describes the relationship between the government and its citizens. Lee et al. (2005) argue that the aim of G2C is to create better relationships between governments and citizens through efficient and easy interactions. Additionally, through G2C citizens are permitted to have free access to government services and information. The benefit of this model is that it encourages a sense of accountability, maintains transparency in transactions, promotes democracy and leads to better services provided to citizens (Evans and Yen 2006). G2C's primary aim is to facilitate citizen collaboration with government(Sandoval-Almazan and Gil-Garcia, 2012). Under this model, citizens are encouraged to become part of the government's official activities by participating in activities such as voting, surveys, community groups and discussions in blogs.

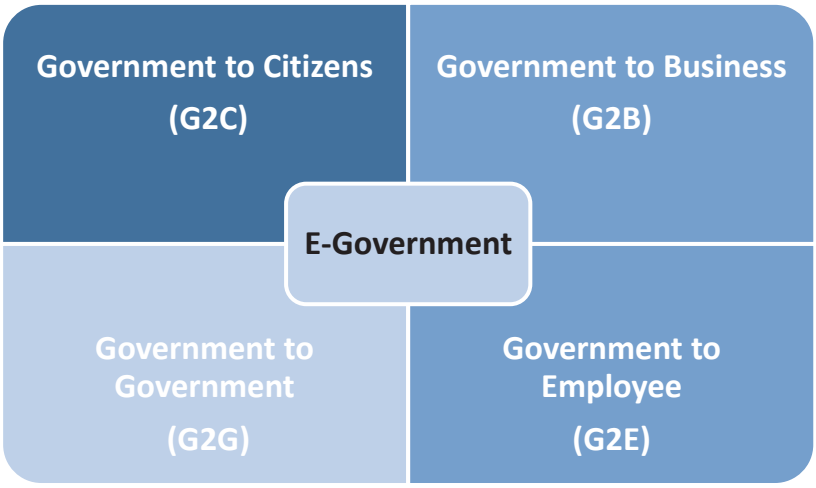

Figure 2.1: E-government types

Of the four types of e-government discussed (shown in Figure 2.1), three of them – G2C, G2B and G2E –involve the use of ICT to provide government services and information. In these the three e-government facilities, the public are the citizens, businesses and civil servants for G2C, G2B and G2E respectively. The fourth one, G2G, involves service and information delivery between government agencies (intergovernmental transfer of information and services), which does not involve the public. This study focuses on the government-to-citizens (G2C) model of interaction. This research thus seeks to assess the relationship issues related to G2C services.

2.2.3 Stages of E-government

Various models have been developed to describe the different stages of e-government implementation(Siau and Long, 2005). These models have been developed by researchers and other organizations such as the World Bank and the United Nations (Alshehri and Drew, 2011, Hassan et al., 2011, Lee, 2010). Some of the e-government models are discussed below.

Baum and Di Maio (2000) identify four stages of e-government: 1) web presence, where governments provide a basic website that has basic information; 2) interaction, where the website allows users to contact the government online and download documents; 3) transaction, where users can complete their transactions online; and 4) transformation, where the government provides efficient, integrated online services (Baum and Di Maio, 2000). Similar stages are proposed by Hiller and Bélanger(2001): 1) information dissemination (one-way communication), where the government conveys information to the citizens via websites ;2) two-way communication (request and

response), where communication tools such as emails and downloadable forms are used to communicate with citizens; 3) service and financial transactions, where the governments offer online services such as financial transactions to their citizens; 4) vertical and horizontal integration, where various systems of government are integrated vertically and horizontally; and 5) political participation, where the government brings on board the citizens to participate in political activities such as e-voting, polls and surveys (Hiller and Belanger, 2001).Layne and Lee (2001) outline the four stages for e-government:1) catalogue, where basic and static information is posted on websites; 2) transaction, where citizens can to conduct online transactions; 3) vertical integration, where the government transforms services to be automated and integrated at different levels; and 4) horizontal integration, where the main concern is system integration between different levels and continuance of service delivery (shown in Figure 2.2)(Layne and Lee, 2001) .

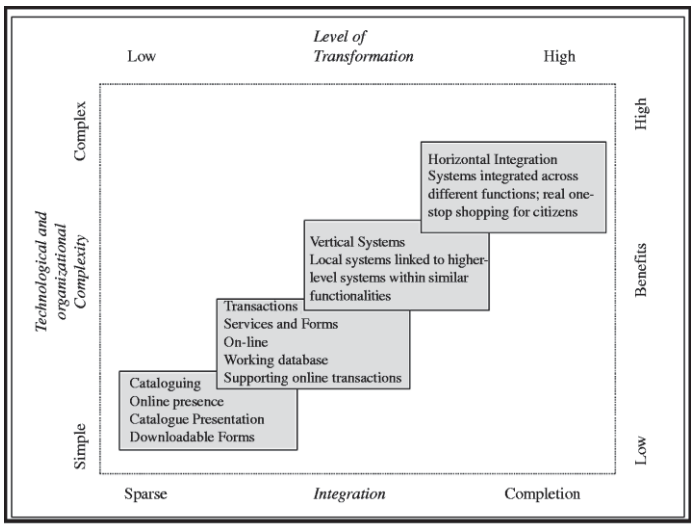

Figure 2.2: Layne and Lee's model Source: Layne and Lee (2001)

Deloitte and Touche(2001) propose six stages of e-government. These stages are as follows 1) information publishing, where government provides its users with increased access to the government information; 2) two-way transactions, where the government's website allows the government and citizens to interact and communicate using ICTs; 3) multi-purpose portals, where governments provide one-stop services to users in different areas; 4) portal personalisation, where users are allowed to customise their portal based on their needs; 5) clustering of common services, where the government's websites have a better and unified seamless services provided to users; and 6) full integration and enterprise transaction, where the government's websites provide advanced and integrated services provided to users (Deloitte, 2001).

The Word Bank (2003) proposes a three-stage model for e-government. These stages are: 1) publishing, where the government disseminates information to the public via a website; 2) interactivity, where users can interact with the government using interactive tools such as feedback forms and email; and 3) transaction, where users can use the website to conduct online transactions securely (The Word Bank, 2003).

West (2004) identifies four stages of e-government. These are: 1) the billboard stage, where websites are used to display information including reports and publications for the citizens to view; 2) the partial service delivery stage, where the government begins to set online services for the citizens to view; 3) the portal stage, where the website has full integration of services; and 4) interactive democracy, which refers to interactive democracy with citizens(West, 2004). Siau and Long (2005) suggest a new synthesized e-government model. The authors employed meta-synthesis integration in their study in order to compare, interpret, translate and synthesize different e-government models. They developed a new model with five stages: 1) web presence; 2) interaction; 3) transaction; 4) transformation; and 5) e-democracy (shown in Figure 2.3)(Siau and Long, 2005).

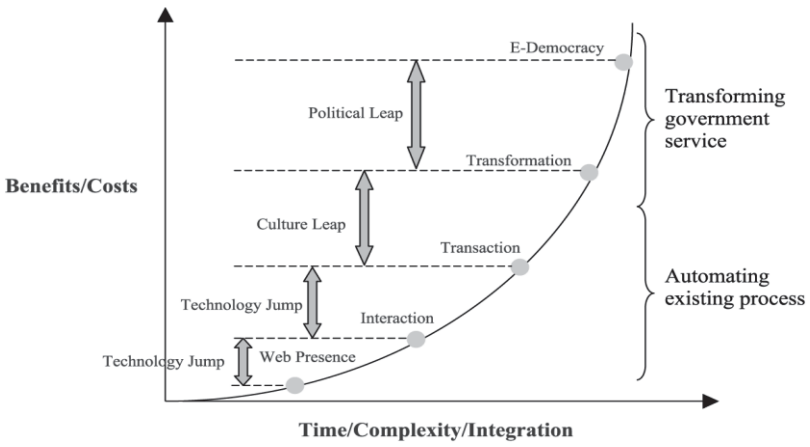

Figure 2.3: Siau and Long's five-stage model sources: (Siau and Long, 2005)

The United Nations (2008) suggests a six-stage model. The six stages are 1) emerging presence, where the government provides a website with basic information for the public such as the government's name and phone numbers; however, this website is limited and only has static information; 2) enhanced presence, where the governments offer dynamic and specialised data and updates the government information systematically; 3) interactive presence, where the website allows users to contact the

governments online; 4) transactional presence, where users can complete their transactions securely over the website; 5) seamless or connected, where governments provide users with a one-step portal where users will be able to access different types of information and services; and 6) e-participation, where users are encouraged to communicate with governments and participate in decision-making (Hassan et al., 2011, Lee, 2010, United Nations, 2012).

Furthermore, Fan (2011) identifies five stages for e-government development. These stages are 1) one-way communication, where the government provides users with information posted on a website (for example, documents, reports and policy) and users are able to communicate with the government via email; 2) two-way communication, where the users are able to make a request, download forms and the government can respond electronically to users; 3) transactional capability, where users can conduct their transactions online; 4) citizen participation, where the website has a range of ICTs that allow users to participate in decision-making, to propose ideas, to submit comments to the government and to provide feedback; and 5) one-stop portal capability, which is where the most advanced website provides integrated and linked services across different levels. The website has a one-stop portal to enable users to access information and services (Fan, 2011).

Each of the models identified here offers a unique understanding of the processes of e-government. For example, Fan's(2011) model proposes a one-stop portal compatibility as the most advanced stage, which allows users access crucial government's information and services. Siau and Long's model (2005) is innovative in that it describes the technological advancement from one stage to another and it enhances both the cultural and political leap between the third and fifth stages. This means that the model is focused on improving communication and engagement between citizens and the government. Nevertheless, the United Nations' model (2008) is the most innovative because it identifies the life cycle of the e-government website by dividing e-participation into three levels (e-information, e-consultation and decision making). Unlike the other stages, this specific stage allows users to engage with the government and play a role in decision-making.

The first stage of UN's (2008) model, emerging presence, differs from its counterparts in the other models in that it contains only basic information such as names and

contacts, while the web presence provides users with more advanced or useful information. This means that citizens' interaction would only be facilitated at the third stage, which is equivalent to Siau and Long's (2005) second stage, interaction. The fourth stage of the UN's (2008) model, transactional presence, is similar to the Siau and Long's (2005) transaction stage in that it facilitates the secure completion of essential transactions such as vehicle registration over the website. The UN's seamless or connected stage facilitates the security of information by providing a one-step portal from which users are able to access all types of essential information and integrated services. This matches the transformation stage in Siau and Long's (2005) model and the transformation stage in Baum and Di Maio's (2000) model. The last stage in the UN's model is e-participation. This stage is the same last stage of Siau and Long (2005), e-democracy, and West's (2004) model's interactive democracy stage, which represents the achievement of engagement and collaboration between the government and its citizens. The most significant feature in these models is their incorporation of citizens' participation in decision-making, thus updating the depiction of citizens' role as merely following governments' proposed legislations. This means that the government would receive and pay attention to citizens' suggestions and opinions regarding crucial governance matters such as security and economic matters. The UN's e-participation stage makes its model different from the others since it encourages users' participation in critical decision-making. The UN's (2008) model, therefore is the best model to reduce costs for the government due to the automation of services. It revolutionizes the way a government should function as well as promoting transparency through the e-participation provision. Figure 2.4 provides a summary of the all of the models discussed above.

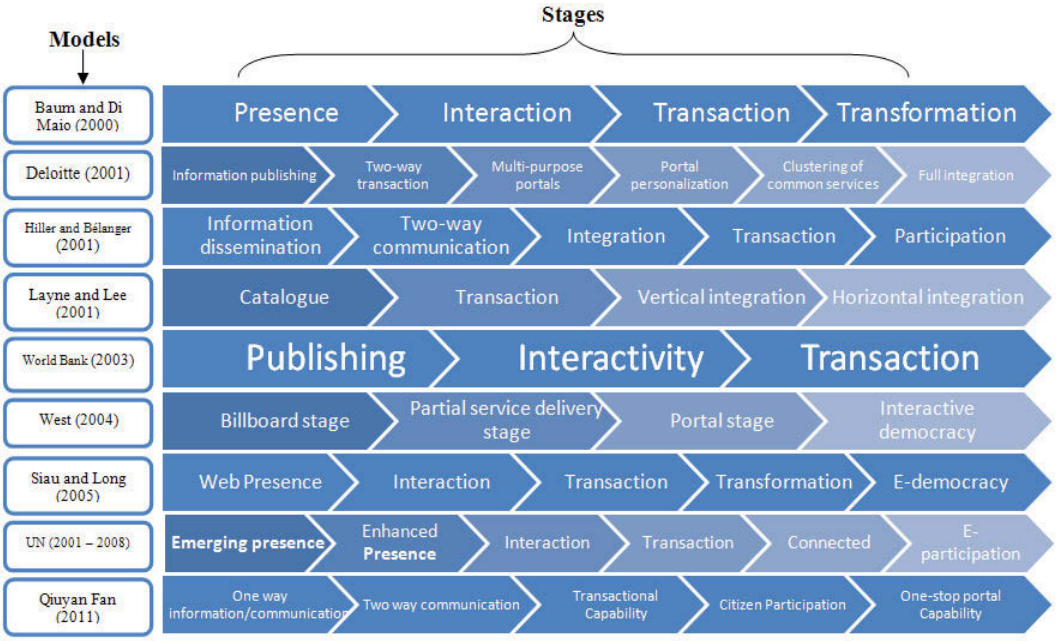

Figure 2.4 Models of E-government Stages

From the above discussion, it is evident that most e-government models agree on five stages of e-government:

- Presence
- Interaction
- Transaction
- Transformation
- E-participation

These five stages are depicted in Figure 2.5 and described in Table 2.1.

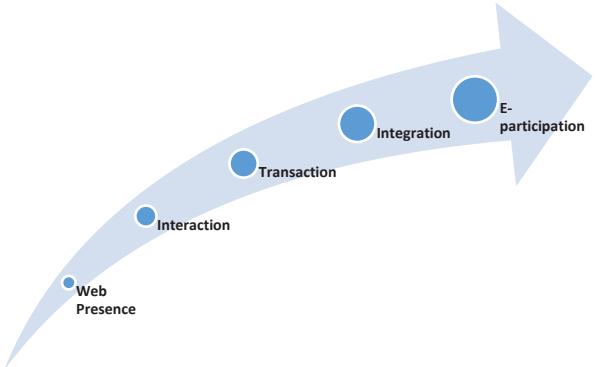

Figure 2.5 E-government stages

Table 2.1: Stages of e-government

Stage	Description	Sources
Presence	Government disseminates information to the public via a website and online portals that publicize government services and information.	(Reddick, 2005, Al Nagi and Hamdan, 2009, Al-Jaghoub et al., 2010)
Interaction	Users can interact with the government using interactive tools such email and other communication methods.	
Transaction	Users can conduct their transactions online, such as paying bills and registration.	
Transformation	Transformation from traditional government services methods to integrated online solutions.	
E-participation	Allowing users to participate in discussions, decision-making, to propose ideas to government and to provide feedback.	

The focus of the current study is the e-participation stage. As discussed above, e-participation allows citizens to engage with the government and take a role in decision-making (UN 2008). In this stage, citizens can deliver their opinions to government by proposing ideas, making complaints and participating in online survey and polls(Hassan et al., 2011). Lee (2010) states that the e-participation stage incorporates online polls, information about upcoming events and allows for online discussion forums and consultation forums. E-participation is discussed in detail in Section 2.4.

2.2.4 E-government in Saudi Arabia

The government of the Kingdom of Saudi Arabia is strongly focused on the processes to realize the concept of e-government and believes that e-government will cause a significant change in the country's economy. As a result, the Ministry of Communication and Information Technology was directed by the government to develop a plan so that government transactions and services would be provided electronically (Al-Fakhri et al., 2008b, Alshehri and Drew, 2011). In 2005, the Ministry of Communication and Information Technology teamed up with the Communication and Information Technology Commission and the Ministry of Finance to create the e-government program Yesser (Al-Fakhri et al., 2008a, Alshehri and Drew, 2011).Yesser seeks to enable and implement e-government. The main objectives of Yesser include raising the efficiency and productivity of the public sector, providing business customers and individuals with services that are effective and easy to use, increasing the

return on investments and ensuring that users get information that is timely and accurate (yesser, 2012).

The e-government initiative prompted different policies and strategies in Saudi Arabia. The first of these was the establishment of the Yesser program in 2005. This program rolled out the first action plan and strategy for e-government to be implemented over a five-year period (Alshawi, 2009). Its aim was to achieve a digitalized community by adopting IT and communication systems. This plan has so far been achieved. In 2012, the Saudi government started rolling out its second plan that will run until 2016. The current strategy is aimed at ensuring that e-government services are effective and the cost of eservice is reduced (Yesser, 2012).

The United Nation's E-Government surveys (2003 to 2014), describe Saudi Arabia as one of the developing leaders in e-government. In the 2003 survey, Saudi Arabia was ranked 105th in e-government development index. In the 2012 survey, Saudi Arabia was ranked 41st on the e-government development index. In addition to this, Saudi Arabia performed considerably well in various areas of implementing e-government and was identified as one of the emerging leaders in e-government development. Special mention was given to the eDashboard portal, a recently developed service that allows access to Saudi Arabian citizens through digital verification and serves as a portal for all available e-government services (United Nations, 2012). By 2014in the most recent survey, it was ranked as 18thon the e-government development index. The report describes Saudi Arabia's online services as innovative services. For example, one of the developments of Saudi Arabia's e-government is the implementation of a digital verification system that verifies citizens' identities and also serves as a national portal where citizens have access to all provided services. Additionally, Saudi Arabia's e-government offers an open data initiatives, that allow citizens to access to documents and reports provided by government agencies. The purpose of this is to encourage e-participation in order to collect citizens' opinions through surveys, public discussion and blogs. These developments show that the Saudi Arabia has invested greatly in e-government services.

As mentioned earlier, in 2012 the Saudi e-government program Yesser launched the second e-government action plan (2012–2016). This action plan (2012–2016) can be considered as an extension of the first e-government action plan (2006–2010), as the second plan acknowledged the need to continue to invest in infrastructure, e-services

and national application projects (Yesser, 2012b). With respect to infrastructure investments, in the second e-government action plan the government strategized to build and deploy the government's shared infrastructure so that maximum value can be attained from the government's investments. Under this arrangement, the government plans to reduce the upfront costs substantially. As well as cutting costs, the shared infrastructure will also ensure that the e-services are utilized by a larger number of people. The continuity in e-government initiatives is clear as the strategic benefits (outcomes) are the same as in the first e-government action plan: better services provided to citizens and businesses, increased effectiveness and efficiency and supporting the move to an information society (Yesser, 2012). However, in order to ensure that above objectives are achieved, policymakers have strategized to ensure the commitment and active involvement of all stakeholders, including government departments. To meet this goal, the second e-government action plan outlines four broad strategic themes: creating a sustainable workforce, reducing public expenditure, increasing collaboration and innovation, and enhancing government efficiency. The overarching idea contained in the second plan is to focus more on changing people, culture and public administration rather than solely focusing upon deploying technological solutions.

As well as outlining strategic themes and benefits, the second e-government action plan also pinpoints the specific set of actions to be executed under six work streams: human capital, communication and change management (HCCCM), e-services (ES), national shared applications (NS), infrastructure (IN), institutional framework (IF) and e-participation (EP) (Yesser 2012). An interesting difference between the first and second action plans is the inclusion of the e-participation work stream in the second e-government action plan. The governmental system of Saudi Arabia is based upon absolute monarchy and is ruled by a king. However, consistent with the ever-increasing worldwide trend of citizen participation in government affairs/processes using ICT, the Saudi Arabian government has included e-participation as one of the strategic items its e-government action plan. With e-participation, through the use of ICT citizens are empowered to share their views concerning various government functions including but not limited to administration, policymaking, importantly, the service delivery by different government functions. In this context, the e-participation has a direct link with e-services (ES) work stream.

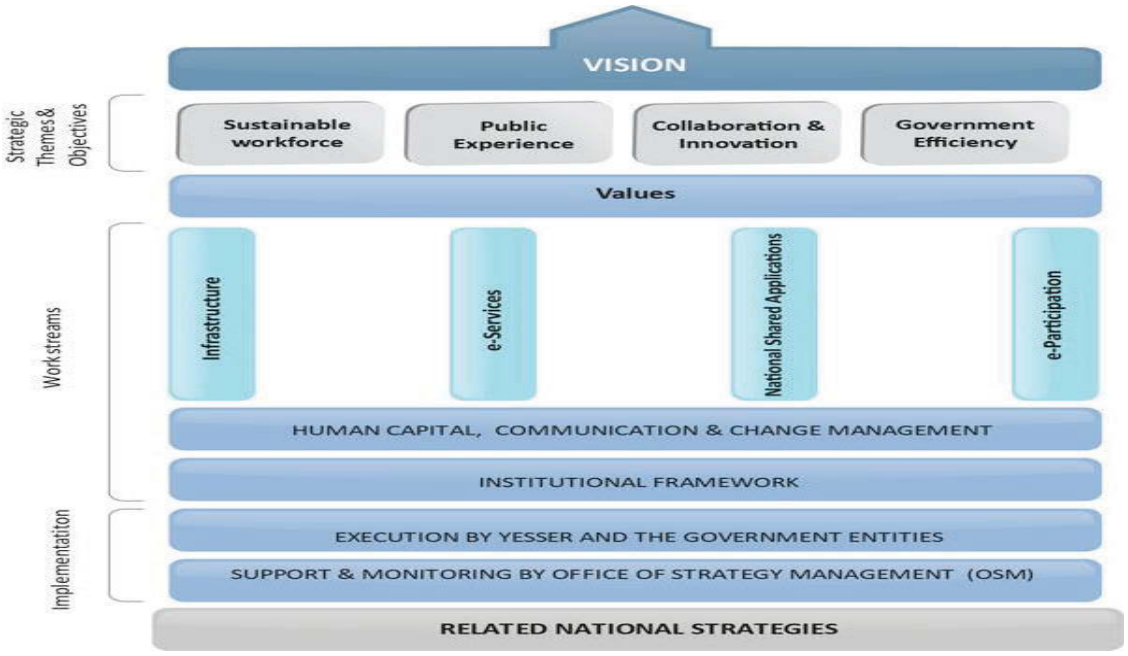

Figure 2.6: Action plan for E-government in Saudi Arabia (Yesser, 2012)

By analyzing the feedback of its citizens, the Kingdom of Saudi Arabia has an opportunity to improve service delivery. Moreover, the inclusion of the national shared applications (NS) work stream helps the government to deliver e-services in an efficient and cost-effective way (Yesser, 2012). Keeping in mind the significance of e-participation and e-services in relation to better serving the citizens through the use of ICT, the other work streams such HCCCM and IF support these core work streams. Through HCCCM, the KSA is optimistic it can provide continuous leadership support to e-Government initiatives in their entirety (Yesser, 2012). In addition to guaranteeing the leadership support, the KSA is committed to ensuring that required resources are in place to support the second e-government action plan. Moreover, since the inclusion of e-services and e-participation work streams may require some regulations to be put in place to ensure the continuity of e-government program, the KSA has included the IF work stream. The main purpose of this work stream is to guarantee that the necessary institutional framework (regulations) is in place for the effectiveness of the second e-government action plan.

One of the important dimensions of second e-government action plan is the identification of various initiatives to be taken under each work stream. For instance, the HCCCM work stream is planned to be executed through 10 action items while the e-Services work stream entails five action items. Similarly, there are eight, 14, two and seven actions items identified for the NS, IS, EP and IF works streams respectively (Yesser, 2012). Although the second e-government plan clearly identifies different work streams and action items, it also acknowledges that it would be difficult to attain the goals of e-government without the active participation and cooperation of different government agencies. Hence, in order to ensure better cooperation from different government agencies, part of the action plan involves providing extensive training to staff so that they can implement e-services within their respective government agency (Yesser, 2012). This has manifold advantages for the government, who are able to develop capacity in government while also receiving the required commitment from government staff. However, the most important aspect of the e-government action plan is to manage the resistance to e-government within governmental organizations and to create a culture of coordination, cooperation and collaboration with government agencies, resulting in seamless service delivery to all stakeholders including the citizens of KSA. In this context, the second e-government action plan also mentions that all the government agencies will publish a roadmap of their proposed e-services before implementing them in order to increase the number and maturity level of e-services (Yesser, 2012). Furthermore, the seamless delivery of e-services can only be ensured if all government agencies' e-services are provided through a single ICT platform (such as a web portal). Accordingly, the second e-government action plan mentions that all government agencies must deploy their e-services on a single government service bus (GSB). One of the biggest advantages of implementing a GSB is to ensure the effective collaboration within the government agencies that is the essence of the second e-government action plan (Yesser, 2012).

2.3 E-Participation

2.3.1 Defining E-participation

There are a number of definitions for e-participation found in the literature. Vicente and Novo(2014) define e-participation as social and political activities engaged in by citizens mainly through the use of the Internet. Social and political activities in the

context of this definition refers to anything from expressing their views about the government and its operations and policies to exercising their political rights as citizens to communicate with their elected representatives or vote for or against particular initiatives proposed by the government. This is similar to the definition presented by Zheng (2015) which considered e-participation as the use of information and communication technology (ICT) in order to "support democratic decision making." (p. 1). According to Zheng (2015), the concept involves creating and sustaining digital avenues where governments and citizens can engage in dialogue about specific issues. Furthermore, Zheng (2015) states that e-participation is a concept that is directly aligned with citizen participation in general, in that they share the same four goals of exchanging information, educating citizens, supplementing decision-making options, and probing inputs from citizens. On other hand, Karkin and Calhan (2012) define e-participation as the process where citizens are involved as collaborators in the decision-making process, especially with regards to the provision of public services provided by government. From technology perspective, Ali et al. (2015) claims that e-participation is the employment of technology, as a way to improve the contribution of various shareholders and government agencies. Lee and Kim (2014) examined various definitions of e-participation from different studies and found there were different perspectives of the concept. According to their findings, e-participation is considered as a specific type of e-government function that promotes the engagement of the people with governmental activities. However, although Lee and Kim found many different definitions of e-participation, all of the definitions emphasized citizen-initiated participation in government activities as the core idea of e-participation, with some examples being online surveys and forums where citizens could actively provide their opinions on various concerns about public administration (Lee and Kim, 2014).

In line with the findings of Lee and Kim (2014), this study likewise adopts the definition of e-participation as applications or opportunities provided by the government that are "designed to promote citizen-initiated participation in policy agenda setting, to enhance government–citizen interaction and to build an online community providing citizens with an opportunity to discuss policy agendas with others and with government agencies" (Lee and Kim, 2014, p. 2045). This definition is aligned with the purpose of this study of investigating the factors that influence Saudi Arabian citizens' intentions to make use of web applications or opportunities provided by the government for the

defined purpose.

2.3.2 E-participation Levels

There are various levels of e-participation depending on the aims of use and citizen engagement. For example, the Organization for Economic Co-operation and Development's (OECD) (2001) model for e-participation consists of information, consultation and active participation. The OECD's framework is similar to the UN's (2012) e-participation model, which is built based on e-information, e-consultation and decision-making. Drawing from the OECD's and the UN's models, Macintosh (2004) categorizes e-participation service into three levels: e-enabling, e-engaging and e-empowering. Citizens on the e-empowering level can be important element, as they can provide bottom-up ideas in the e-participation process. Figure 2.7 shows the relationships among these different levels.

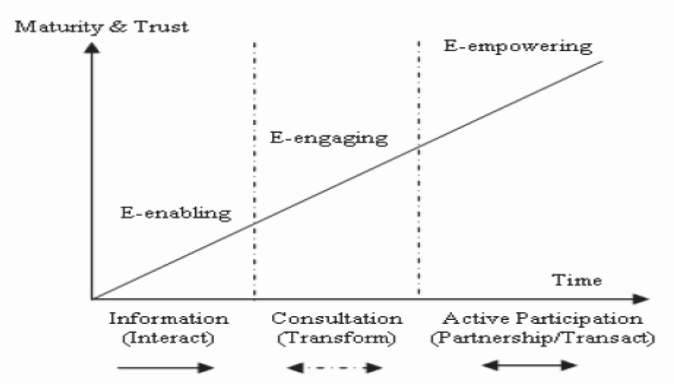

Figure 2.7 E-participation levels Source: Ahmed (2006)

Ahmed (2006), groups the different models of e-participation into three major categories: information, consultation and active participation. The information level is a one-way relationship. In this level, citizens can access information provided by the government. The consultation and active participation levels are two-way relationships. In the consultation level, citizens are allowed to deliver their opinions about specific problems or questions that are set by government. In the active participation level, citizens are encouraged to participate in the process of making policy. It is clear that there must be a flow of information from the government to the citizens, feedback from people to the government, and citizen engagement in order for e-participation to be successful.

2.3.3 E-participation Tools

E-government uses a number of different communication tools for e-participation services (Reddick, 2011). The following table, Table 2.2, identifies the various e-participation tools that are used by governments when engaging with citizens.

Table 2.2: E-participation tools

Tool	Description	Source
Websites	Using e-government websites to search and download information. Websites play an important role in informing citizens.	(Feeney and Welch, 2012)
Email	Email used as a mean for communication between government and citizens.	(Aichholzer and Westholm, 2009)
Input form	Citizens can make complaints and provide feedback.	(RESCA, 2011)
RSS	Citizens get recent updates about events.	(Aichholzer and Westholm, 2009)
SMS	Communication sent to mobile phones.	(Feeney and Welch, 2012, Kang and Ng, 2015)
Social networking sites	The government uses the social networks for the purpose of interacting with citizens and obtaining their views in regard to certain issues.	
Blog	Blogs are mainly information and discussion sites that are also used by the government to interact with citizens.	
Online surveys	Online surveys are used for the purpose of improving services or decision-making.	
Online chats	Online chats are used for the purpose of initiating discussions regarding certain issues and hence informing citizens and learning their thoughts.	
Polls	Polls involve posting questions regarding a certain decision and allowing the citizens to vote. This leads to decision-making depending on the outcome of the poll and it also encourages the citizens to vote.	(Chiang, 2009).
Online newsletters	Online newsletters are used for the purpose of posting information about the government's achievements in certain aspects. The newsletters are usually accessed by the citizens online and hence inform citizens. Comments can thus be made regarding the information provided by the government.	(Feeney and Welch, 2012)
Discussion forums	The discussions are usually carried out online and are used to engage the citizens in discussions concerning pressing and important issues.	

2.3.4 E-participation in Saudi Arabia

In order to acquire the benefits of e-participation for strengthening the government–citizen relationship, the Saudi Arabian government has placed immense importance on the e-participation subset of e-government. Its significance can be seen in Saudi Arabia's e-Government Second Action Plan (2012–2016), which identifies e-participation as one of the six strategic work streams (Yesser, 2012a). E-participation, which was not placed in the Saudi government's previous action plan, is now supported by increased use of social media to establish an e-participation facility for government agencies in order for them to obtain public feedback on e-government. This is planned to be achieved through the use of blogs and moderated online forums (Yesser, 2012a).

There are many examples of e-participation activities provided on e-government websites in Saudi Arabia such as ideas platform on the website of ministry of commerce and investment. In the 2014 United Nations e-government survey (2014), Saudi Arabia ranked 51 globally in the e-participation index, with an e-participation index (EPI) score of 0.5686.Considering that Saudi Arabia ranked ninth globally, with an e-participation index score of 0.6316in the 2012 United Nations Survey, the country has failed to achieve significant progress in its e-participation initiatives. The UN survey highlight that despite the significant investments made in e-participation by many countries, including Saudi Arabia, there is a low level of citizen engagement in e-participation (UN E-government Survey 2014). In the following section, the factors that influence citizens' involvement in e-participation are discussed.

2.4 The Influencing Factors on Citizens' Intention to Use of E-government

One of the important research areas explored in e-government services is identifying different factors that influence citizens' use of such services. Towards this end, there have been a number of studies found that considered the influence of a numerous factors on using e-government services, most notably attitude, trust, subjective norms and web design. Previous researches conducted on each of these factors are thus explored in greater detail in the following subsections.

2.4.1 Trust

Trust has been identified as an important factor in determining participation not just in e-government activities but across different aspects of online interaction in general(Belanche et al., 2012, Lee and Kim, 2014). The concept of trust has been

explored in diverse fields including sociology, psychology and marketing. Due to this breadth of study, there is no consensus on the definition of trust(Bélanger and Carter, 2008, Papadopoulou et al., 2010). Nevertheless, two common characteristics of trust can be identified. Firstly, the concept of trust is centered on the relationship between two parties: the trustor and the trustee. The trustor is the party that trusts and the trustee is the party that needs to be trusted (Papadopoulou et al., 2010). Secondly, the trustor has a set of expectations of how the trustee will behave (Teo and Liu, 2007). Trust, therefore, can be defined as an individual's belief that another individual or group is acting in his or her best interest (Mayer et al., 1995, Belanche et al., 2012).

Initial research in the context of e-government conceptualized trust as a single construct: trust in e-government services(Warkentin et al., 2002, Tan et al., 2008). However, later researchers argue that trust towards e-government services is a combination of the trust of different components, hence the conceptualization of trust as a single construct is not valid (e.g. Papadopoulou et al., 2010). There has been no consistency in the literature concerning the different dimensions of trust in the context of e-government, with different researchers using various dimensions for trust, such as trust in the government, Internet technology, the specific e-government services, the infrastructure of the government organization, the storage and usage of data by e-government, the quality of the information provided, the e-government transactions, the specific government agency and the institutional system supporting e-government(Colesca, 2009, Bélanger and Carter, 2008, Papadopoulou et al., 2010). Across all of those studies, two dimensions of trust have been used by majority of the researchers in the context of e-government: trust in the government and in Internet technology.

One of the first studies in the context of e-government to conceptualize trust in relation to these two dimensions was Carter and Bélanger (2005). The researchers hypothesized that trust in Internet technology and the government positively impact on citizens' intention to use e-government services. They tested these hypotheses based on the data collected from a large sample of citizens from the United States of America (USA) using the survey method. The research findings supported both hypotheses. In another study, the roles of trust and risk perceptions on using e-government were examined in the United States of America (USA) by Bélanger and Carter (2008). The findings showed that trust in the government and in the Internet along with perceived risk have

significant positive effects on citizens' intention towards using e-government services. Similarly, based on Carter and Bélanger's 2005 model, Carter and Weerakkody (2008) compared the usage of e-government services in the United Kingdom (UK) and the USA. The results are consistent with Bélanger and Carter, where relative advantage and trust (trust in the government and in the Internet) have positive effects on the intention to use online services offered by government. Nam (2014)closely examined the relationship between trust in government and e-government usage in the USA. The author showed that for e-government service use, trust in government is more important than trust in technology. Later studies have similar findings(Akkaya et al., 2011, Teo and Liu, 2007, Bélanger and Carter, 2008), including those conducted in the context of Saudi Arabia' e-government services(Alzahrani, 2011, Alsaghier, 2010).

In the context of e-government in Arabic countries, Alsaghier et al. (2010)analyzed the role of trust and perceived risk in term of using e-government in Saudi Arabia. The authors studied the antecedent factors of trust such as trust in government, propensity to trust, perceived risk and perceived website attributes including perceived usefulness, perceived ease of use, website quality and website familiarity. The findings reveal that these factors have significant positive effects on trust towards engaging in e-government services. They claim that trust has an essential role in affecting citizens' decisions to use the e-government services (Alsaghier et al., 2010). Additionally, Alzahrani(2011) conducted a study to find out the determinants of using e-government services in Saudi Arabia. The study found that trust in the government and the Internet has an impact on the intention of Saudi citizens to use e-government services. Additionally, Al-Sobhi at al., (2011a) conducted a study in Saudi Arabia to investigate factors that have an effect on e-government usage. The authors found that Saudi citizens' behavior towards using e-government services is influenced by their trust in the internet and intermediary organizations. This confirm on the role of trust in using and accepting the online services provided by government. Moreover, Mofleh and Wanous (2008) proposed a model that focused on the adoption of e-government services by Jordanian citizens by examining the impact of trust in the government and the Internet, awareness, previous experience and compatibility as determinants for citizens' adoption of e-government. The results show that trust in the government, trust in the Internet and perceived compatibility have significant effects on the adoption.

As highlighted earlier, there are very few empirical studies that examine the factors that

influence citizens' behaviour in the specific context of e-participation. Even fewer have investigated the impact of trust on citizens' intention to use e-participation. At the time of writing, Kim and Lee(2012) and Lee and kim (2014) are the only two studies that investigate the significance of the trust factor in influencing citizens' intention to use e-participation. In both studies, trust was conceptualized as a single construct, namely trust in the government, and it was hypothesized that there is a positive relationship between trust in the government and citizens' e-participation use. The hypothesis was supported in both studies. Lee and Kim (2014) reason that when citizens have a high level of trust in the government, they are more motivated to actively participate in government-initiated e-participation, as they have a sense of cooperation with the government. Furthermore, citizens who have a higher level of trust in the government have the confidence that their opinions will be valued and that any time spent on engaging in e-participation will not be a wasted effort; hence, they are more willing to participate in e-participation.

The lack of studies on trust and citizens' intentions to use e-participation is a significant gap in the existing research considering that trust in Internet technology is highly likely to be a strong predictor of citizens' intention to engage in e-participation. More precisely, there are several risks associated with transactions using Internet technology, particularly the risk of losing control of personal and financial information (Teo and Liu, 2007). Hence, similar to the relationship between trust in Internet technology and citizens' intention to use e-government services, it can be reasoned that citizens' will be more willing to engage in e-participation if they believe that the e-participation tools/websites are secure. Moreover, the existing research that studies this topic examined the impact of the trust factor in the context of e-participation used data from the e-participation survey conducted by the South Korean government in 2009. Culturally, politically and economically, South Korea is very different to Saudi Arabia; hence the generalisability of the findings of Kim and Lee's studies to the specific context of e-participation in Saudi Arabia is limited. This identifies the need for further research that examines other contexts. As the e-participation service refers to two-way communication between citizens and government, therefore trust occupies a central role in creating effective e-participation between citizens and government.

2.4.2 Attitude

Individuals' attitude towards using e-government is an important element. Suki and Ramayah(2010) claim that attitude has a significant role in using e-services. Some individuals may be more interested in using traditional interaction with government because of the negative attitude towards using e-government services. The term 'attitude' is explained by Fishbein and Ajzen(1975) as being the positive or negative emotions and opinions which a person expresses about certain behaviour. In the context of using e-government services, the construct of attitude has been defined similarly in a number of studies. Shareef et al. (2011) consider attitude to be the subjective perspective of an individual towards the intention of making use of e-government services. As explained by Shareef et al. (2011), the construct must assume that the individual is aware of e-government before the individual's attitude about the service can be measured. That is, awareness is a significant variable to consider before measuring people's attitudes towards e-government services. In another study, Sahu and Gupta (2007) consider attitude as the level of positive or negative feelings that a person has about making use of e-government services. This is the same definition adopted by Alomari et al. (2012). For this study, attitude is defined from a synthesis of the literature as the individuals' feelings about e-government services in general. In e-participation context, there is an interaction between a government and its citizens, thus, citizens' attitude towards e-participation activities is an important determinant for their use of such services.

Various studies in e-government field highlight that attitude is one of the important factors that influence the use of e-government services by citizens (Alomari et al., 2012). In study of Sahuand Gupta (2007), they examined factors that have impact on Indian people's acceptance of e-government services. They found that attitude is a significant influential factor on the intention to use such services. Shareef et al. (2011) sought to find what factors were critical for enabling citizens in a country to adopt e-government services at different stages of maturity in Canada. Two stages were considered, which were the static stage, where the service just provides information, and the interactive stage where the service is able to interact with users. Utilizing a survey design with an 11% response rate and total sample size of 239, the study found that attitude towards the system was an important aspect of e-governance adoption for services at both stages of maturity. Furthermore, researchers have used existing model

in the IS field such as TAM model, to examine the impact of attitude on adoption of e-government (Rehman et al., 2012a, Al-Hujran et al., 2011, Hung et al., 2006). Al-Hujran et al.,(2011) studied the determinants of e-government usage in Jordan by applying TAM model. They found that attitude significantly impacts on the Jordanians' intention to use services on e-government websites. A study conducted by Lin et al., (2011) investigated users' acceptance e-government in Gambia had similar findings, also showing that attitude towards the use of e-services plays a very significant role in adoption of e-government services.

On the other hand, Alomariet al., (2012) investigated factors that affected e-government adoption by citizens in Jordan . From a survey of 400 internet users in the country, the study found that attitude was not among the important variables that affected e-government service adoption and was actually dropped as a component following factor analysis. These findings contrast with those from other studies (Shareef et al., 2011, Sahu and Gupta, 2007, Al-Hujran et al., 2011). These results imply that the importance of attitude in e-governance adoption may be affected by different factors, and may so not be constant in different contexts.

There are various factors that have been considered in the literature to affect attitude towards e-government services in different countries (Al-Hujran et al., 2011, Hung et al., 2006, Sahu and Gupta, 2007, Rehman and Esichaikul, 2010). In study of Hung et al.,(2006), they investigated the factors that affect acceptance of e-tax filing and payment in Taiwan. They found out that attitude was influenced by usefulness, ease of use, perceived risk, trust and compatibility. Al-Hujran et al., (2001) found that usefulness and ease of use are the most important predictors of attitude towards using e-government services in Jordan. Perceived usefulness was found to be the most important predictor of the attitude toward e-government usage. Moreover, Kolsaker and Lee-Kelley (2008) sought to investigate people's attitudes towards e-government in the United Kingdom. Utilizing a quantitative study that involved 302 respondents, of whom 216 were users of e-government services, the study found that users' attitudes were affected by the level of personalization and user-friendliness that they perceived from e-government services. Similarly, Sahu and Gupta (2007) generalized that the attitudes of e-government users were affected by their beliefs about the e-government system that they were using, as well as the level of awareness that they had about the system. Sarikas and Weerakkody(2007) explored the difficulties that local agencies in the

United Kingdom experienced in their implementation of e-governance services. From interviews conducted with employees of these agencies and citizens who make use of the Internet, it was found that there were issues of sociopolitical and organizational origins that may not yet be completely accounted for by existing models of attitude towards e-governance (Sarikas and Weerakkody, 2007). This implies that social influence may have an impact on attitude towards e-governance (Sahu and Gupta, 2007). In the Saudi Arabian context, Alzahrani (2011) developed a conceptual model of the citizens' acceptance of the web based services. In his model, he identified three key sub factors that shape the individual's attitude in his model. These sub factors are compatibility, ease of use and usefulness. By using an online survey, he determined that attitude towards using web-based services is strongly influenced by these three sub factors. Pons(2004) highlights that throughout the Arabic world, initiating an e-government system requires positive social attitudes, as with the traditional ways of conducting business. The literature shows that attitude is an important component in the usage of e-government services. Further, there are different significant factors that have the ability to affect attitude.

2.4.3 Website Design

E-government websites are the main form of electronic interaction between citizens and governments. Wang et al. (2005) highlight that website design is one of the main challenges in producing e-government services. According to Flavian et al., (2009), websites need to be designed in a way that conforms to the design preferences of its target audience in order for the audience to be able to relate with the website and make use of its features. A well-designed website helps users find relevant information effectively, thus developing the perception the website is user friendly (Kang and Kovacevic, 2012). There is a lack of studies that have examined the influence of website design on users' intention to use the website in the context of e-participation, although researchers have studied web design in the context of e-government services(Segovia et al., 2009a). The TAM model has also been extensively used to predict user acceptance of system (such as websites) based on user perceptions of usefulness and ease of use. For example, Kumar et al. (2007) investigated the role of e-government website design, examining whether perceived usefulness, perceived ease of use, users' perceived web content(such as navigation, accessibility and personalization) impact on citizens' satisfaction and e-government adoption. They found that users'

perceived content strongly affects citizens' satisfaction concerning e-government adoption. Segovia et al., (2009b) postulate that website design is paramount in overcoming the trust issues affecting e-government. Therefore, it is important to understand how these three aspects of website design affect website use, particularly in the context of e-government services.

Segovia et al. (2009) also studied e-government web design. Their findings suggest that a well-designed e-government website can enhance citizens' intention to use e-participation services. Furthermore, Alomari et al. (2012) found that e-government website design has the potential to determine the citizens' intention to engage in e-participation initiatives. D'Agostino et al., (2011) argue that website content is one of the most important component that make up the performance index of e-governance and e-participation. This means, therefore, that an understanding of website content and how it affects the use of e-government services is crucial to the success of e-government. Alshehri et al.(2012b) studied the quality aspects of websites in relation to the adoption of e-government in Saudi Arabia, focusing on attractiveness, text fonts and colour. Their study found a significant correlation between these aspects of website design and the use behaviour of e-government services. In e-participation area, Ali et al (2015) investigated the impact of the two factors of the TAM model, usefulness and ease of use on citizens' acceptance and readiness to use e-participation in Bahrain. To do this, they conducted a survey of 250 Bahraini citizens. Their results confirmed that perceived usefulness and perceived ease of use are significant predictors of e-participation use.

A well-designed e-government website positively impacts citizens' intention to use e-participation and hence increases trust (Chee-Wee et al., 2008). According to Kumar et al. (2007), website design including ease of navigation, personalisation and accessibility plays an important role in citizens' satisfaction and e-government adoption. Well-designed e-government websites attract citizens' e-participation activities. E-government website design has the potential to determine the citizen's intention to engage in e-participation initiatives. It is apparent that website design aspects, content, navigation and presentation are key factors in determining using e-government service by citizens.

2.4.4 Subjective Norms

Subjective norms were found to be another prominent factor that is tested in literature as potentially influencing citizens' use of e-government services. It is argued that

individual's actual behavior is formed by the intention, which is determined by various factors such as subjective norms concerning that behaviour (Fishbein and Ajzen, 1975). The subjective norms factor is defined as the social influence to perform or not perform behavior (Ajzen, 1991).According to Harfouche and Robbin(2012), subjective norms refer to the beliefs and practices translated by an individual's personal networks to him or her. These networks include the individual's family, colleagues, and friends, as well as mass media. The concept of subjective norms originates from social influence theory as the individual's perception of people who are most important to him or her in considering whether or not he or she should perform a certain action (Hussein et al., 2010). Thus, a person is influenced by subjective norms both positively and negatively; for example, he or she may tend towards doing a certain action because he or she believes that those who are important to him also do or approve of doing such an action(Carter et al., 2012). On the other hand, he or she may be deterred from doing the act because he or she believes that it is frowned upon by those same people (Carter et al., 2012).

This factor has been operationalised in different ways across a number of studies that examine the factors influencing citizens' use of e-government services. Wu and Chen (2005) define subjective norms as an individual's normative beliefs with regards to a specific referent that is weighted by the extent to which that referent motivates the individual to comply with it. As such, Wu and Chen (2005) consider the sum of these influences from different networks a single factor. However, when Wu and Chen (2005) examined the factors affecting people's use of an online tax registration and payment service, they did not find evidence that subjective norms affect citizens' intention to use the service. Similarly, Hussein et al. (2010) used a single construct to represent subjective norms in their study, and likewise focused on an online, tax-filing service. As in Wu and Chen (2005), subjective norms were not found to be significant in predicting the likelihood that people would make use of the service. Wang and Lo (2013)conducted a study in Taiwan on factors that influence e-government services in general. Results from Wang and Lo (2013) found that the use of e-government services was not highly supported by respondents' friends and family, but this still did not affect respondents' own intention to use e-government services. Hung et al. (2006) operationalised the subjective norms factor into two components: external influences which mainly include different forms of mass media, and internal influences which

include people who are close to the individual. The items that were used in the measurement of such influences were derived from a previous study on behavioral control and attitudes. Like the other studies mentioned here, Hung et al. (2006) also used an online tax filing and payment system as the subject e-government service. Hung et al.'s (2006) results show that external and internal influences are successful in measuring subjective norms, and that in turn, subjective norms is a significant factor in modeling people's intention to use. However, their results also show that external and internal influences are only able to explain about 30% of the variability of subjective norms, which implies that the operationalisation of the construct can still be improved. Alzahrani (2011) used a similar approach as Wu and Chen (2005) in that it also considered the different sources of influence that make up the construct of subjective norms. However, instead of taking the sum of these sources, Alzahrani (2011) treated them separately in the analysis. The sources of influence identified by Alzahrani (2011) were family, friends/colleagues, and mass media. Alzahrani (2011) found that only the perspectives of friends and colleagues were significant in measuring subjective norms as a construct, and the resulting construct was still not identified as a significant factor in influencing behavioral intention to make use of e-government services. From the literature, it is evident that subjective norms have a significant role in shaping the citizens' intention concerning using e-government services.

Table 2.3: Summary of Previous Studies

Authors	**Variables**		**Related findings**	**Limitations**
	Independent	Dependent		
(Wang and Lo, 2013)	- Trust in the Internet - Trust in government - Self-efficacy - Facilitating Conditions - Subjective norms - Perceived ease of use - Perceived usefulness	- Attitude - Intent to use e-government websites	Trust factors and attitude were found to be important fundamentals in affecting the citizens' intention. The findings of the study also confirmed that ease of use and usefulness of e-government services are the two key determinants for the attitude.	This study did not take citizen engagement in e-participation activities in the considerations. It focused more on e-transaction services such as re-new license.
(Sahari et al., 2012)	- Usefulness - Ease of use - Trust - Social influence - ICT infrastructure	- Attitude - Behavioural intention to use - Actual use	The study concluded that behavioural intention was significantly influenced by social influence, trust	The study was conducted in a Malaysian context with focus on e-

	- Attitude - Behavioural intention to use - User's demographic factors		and attitude towards actual use of the services offered in e-government websites.	transaction services, which may affect the generalisability of the study.
(Alshehri et al., 2012a)	- Performance expectancy - Effort expectancy - Social influence - Facilitating conditions - Website quality	- Use of e-government services	Website quality was found to have significance concerning the use of e-government services, while, social influence was found to have no impact on the intention.	The website quality and social influence factors need to be investigated concerning the intention to use e-participation.
(Alomari et al., 2012)	- Trust in the Internet - Trust in government - Attitude - Beliefs - Internet and computer skill confidence - Website design - Perceived usefulness - Perceived ease of use - Relative advantage - Compatibility - Complexity.	- Use of e-government	Website design, beliefs, trust in government, perceived usefulness, and complexity were found to be significant predictors of the intention of citizens concerning the usage of e-government websites.	As with previous studies, The context of e-participation is missing.
(Harfouche and Robbin, 2012)	- Attitudinal beliefs: - Utilitarian outcomes - Hedonic outcomes - Social outcomes - Control outcomes - Normative beliefs: - Perceived social influences - Perceived government influences - Control beliefs: - Trust in the security - Trust in the privacy - Fear from government control - Computer self-efficacy - Perceived government support	- Publics' intention to use e-services	Lack of trust in security and privacy, fear of government control and lack of support found to be the key challenges to using e-services.	Web design is missing and the intention of engaging in e-participation activities also needs to be investigated.
(Eze et al., 2011)	- Perceived ease of use - Perceived usefulness - Security	- Intention to use e-government	Perceived ease of use and perceived usefulness were found to be insignificant direct	The study did not look at other factors such as trust and

	- Internet infrastructure - Reliability - Convenience		predictors of the intention towards e-government use.	subjective norms. Also, this study did not include the attitude as moderating factor in the relationships between ease of use and usefulness and the intention.
(Rehman and Esichaikul, 2011)	Trust: - Trust in the Internet - Trust in the government Security: - Perceived Risk - Information Security - Transaction Security Quality of service: - Service quality - Information quality Website design: - Perceived usefulness - Perceived ease of use - Paralingual web support E-Readiness: - ICT infrastructure - Awareness	- Intention to adopt e-government services	The results revealed that trust factors (in the Internet and in government), service quality, ease of use and transaction security are the significant elements that have influence on the intention.	The study was conducted in Pakistan and investigated the effects of these factors on transactional e-services, which may affect the generalisability to the e-participation context.
(Al-Hujran et al., 2011)	- Perceived usefulness - Perceived ease of use - Attitude - Power distance - Uncertainty avoidance	- Intention to use e-government	The findings are consisting with the previous results in term of the influential factors of the individual's attitude. The findings found perceived usefulness and ease of use to determine the attitude to use e-government.	The factors in this study are limited to the TAM construct and cultural factors. Trust, web design and social influence were not included. This study also did investigate the citizens' perception towards e-participation.

(Reddick, 2011)	- Citizen demand - variables - Socio-demographic - variables - Political variables	- E-participation	Citizens were found to be less likely to use e-participation because of the lack in trust in government	Other factors such as attitude, social influence, web design and trust need to be investigated.
(Al-Sobhi et al., 2011b)	- Performance expectancy - Effort expectancy - Social influence - Facilitating conditions - Trust in the Internet - Trust in the intermediary	- Behavioural intention - Use behaviour	Trust in the Internet and their trust in the intermediary had important effect on their intentions to use e-government. Social influence had no impact on the intention	Lack of investigation of other factors such as web design and individual attitudes towards intention to use.
(Al-Ghaith et al., 2010)	- Trust - Security - Privacy - E-service quality - Loyalty - Relative advantage - Compatibility - Complexity - Trialability - Observability	- E-services adoption	All factors including trust had significant impacts on e-service adoption.	There is a need to investigate trust and other factors in an e-participation context.
(Navarrete, 2010)	- Trust in the government (benevolence and competence) - Online shopping experience	- Trust in the service delivery medium - Trust in the government' s handling of transactional data - Utilization of e-government transactional services	The correlation between trust in the government and using e-government was found to be higher in the USA than in Mexico.	The study was conducted in the context of the USA and Mexico, which may affect the generalisability of the study.
(Hung et al., 2006)	- Perceived usefulness - Perceived ease of use - Perceived risk - Trust - Personal innovativeness - Compatibility - Attitude - External influence - Interpersonal	- Attitude - Subjective norms - Perceived behavioural control - intention	Ease of use, compatibility and usefulness had significant effects on attitude. Trust strongly influenced the intention. Subjective norms were found to be influenced by external and	The study was conducted in Taiwan, which may affect the generalisability of the study.

	influence - Subjective norms - Self-efficacy - Facilitating conditions - Perceived behavioural control		interpersonal influences.	
(Carter and Bélanger, 2005)	- Perceived usefulness - Perceived ease of use - Relative advantage - Complexity - Image - Compatibility - Trust in the Internet - Trust in the government	- Intention to use e-government	Perceived ease of use, perceived usefulness, compatibility, trust in the Internet and trust in government were found to be significant factors to e-government usage.	Only focused on the technological perspectives.
(Nam, 2012)	- Trust in the government - Perceived values - Socio-demographic factors	- Citizens' attitudes towards e-participation	Citizens' trust in the government and perceived values are significant predictors of their attitudes towards e-participation. There is no significant relationship between any socio-demographic factors and citizens' attitudes towards e-participation.	The study was conducted in the context of a developed country, which greatly limits the generalisability of the findings for developing countries. Also, the secondary data set was employed.
(Lee and Kim, 2014)	- Trust in the government - Experience of volunteering - The strength of social ties, - Government responsiveness - Institutional constraints	- Active citizen e-participation in South Korea	Trust in the government, citizens' experience of volunteering, the strength of their social ties and their perceptions of government responsiveness are significant driving forces in their participation. Institutional constraints such as low access to the Internet, low knowledge of using ICT and low awareness of e-participation websites appear to be not much of a barrier for South Korean citizens' engagement in e-participation.	This study was conducted in South Korea, which may affect the generalisability of the study to a Saudi Arabian context. Also, social influence factors are not included

(Al-Hujran et al., 2014)	- Attitude - Subjective norms Perceived behavioural control - Perceived usefulness, - Perceived ease of use	- Adoption of e-democracy tools	The study revealed that all factors of the models are significant direct predictors of citizens' adoption of e-democracy.	The study data was gathered from a small sample of 189 university students in Jordan. Also, the authors did not include trust factors in the model. The study also did investigate the sub-factors of subjective norms
(Ali et al 2015)	- Perceived usefulness, - Perceived ease	- Citizens' acceptance to use e-participation in Bahrain	The results confirmed that usefulness and ease of use are significant predictors of citizens' acceptance of the use of e-participation.	Trust and social influence factors are not included in the model.
(Al Athmay, 2015)	- Demographic factors	- Citizens' use of e-governance	The findings of the research revealed the demographic factors of age, gender, education and type of employment to be major determinants of citizens' use of e-governance.	The study has significant methodological limitations in terms of the choice of the research sample.

2.5 Related E-participation Studies

A comprehensive search of literature reveals very few studies that have investigated the factors influencing e-participation use from the citizens' perspective. In one study in the UK, it was found that a majority of the respondents (86%) used e-government services. The major concerns of citizens in relation to the use of services were the quality of service, usefulness of information and protection of confidentiality(Kolsaker and Lee-Kelley, 2008). As such, citizens were found to pay limited attention to the use of services for engaging with local or national government on pertinent issues, making the actual presence of e-participation activity in the country very limited. In later research, Reddick (2011) examined the current level of e-participation adoption in the USA and the factors influencing citizens' use of e-participation. Secondary data was used in the research; specifically, the researchers used the quantitative data collected during the 2009 Pew Internet American Life Project for their study. The Findings of their study

revealed that citizens' use of e-participation is low overall and the main factors influencing citizens' use of e-participation are citizens' demand for e-participation, income, education and their trust in the government. In another study in the USA, Nam (2012) found that existing e-government services did not motivate citizens to engage in e-participation; neither did the level of Internet use of the citizens. Rather, it was found that trust in government and the perceived relevance of e-participation opportunities played more significant roles in modelling respondents' attitudes towards e-participation.

While studies such as those of Kolsaker and Lee-Kelley (2008), Reddik (2011) and Nam (2012) were conducted in Western contexts, it is also important to examine parallel studies conducted in non-Western settings. In this regard, Lyu (2008) investigated the e-participation capacity and motivation of people in Korea through a web survey of over 9,000 respondents. The results of the survey indicated that approximately 56% of respondents were aware of the existed e-government services, with those who were aware being profiled as young, male Koreans who are well-educated, ICT-literate and spend considerable time on the Internet. However, while a majority of Koreans were found to visit e-government websites, only 7% of them were found to engage in e-participation activities and the e-participation of citizens was found to occur only once every three months on average (Lyu, 2008). Reasons for this lack of e-participation in Korea despite over half of the population being aware of e-government opportunities was due to a lack of motivation of people to engage in e-participation, which was in turn argued to be the result of e-participation channels set up by the government not being able to encourage people, especially from a wider user base, to engage in the opportunities that e-government websites provides. Lee and Kim(2014)conducted an empirical study on the driving forces behind active citizen e-participation in South Korea. The researchers used the 2009 e-participation survey data collected by the Seoul Metropolitan Government for their study. Similarly to previous research findings, trust in the government was found to be a significant determinant of active citizen e-participation in study. In addition to this, they found citizens' prior experience of volunteering, the strength of their social ties and their perceptions of government responsiveness during the e-participation process to be significant driving forces in their participation. Institutional constraints such as low access to the internet, low knowledge of using ICT, and low awareness of e-participation websites appear to

be not much of a barrier for South Korean citizens' engagement in e-participation currently, compared to a decade ago; Lyu's (2008) analysis of the 2005 public e-participation survey collected by the government revealed these institutional constraints to be significant predictors of citizens' e-participation use in Korea.

In the context of Arabic societies, Al-Hujran et al. (2014) examined the factors that influenced e-participation among people in Jordan. The similarity of Al-Hujran et al's research to the topic of this study as well as the fact that it was conducted in a country with similar Middle Eastern characteristics to Saudi Arabia makes this study highly significant for this review. The study conducted a survey of students in community colleges in Jordan, which yielded a sample size of 189.The survey that was used measured respondents' attitude towards e-Democracy tools on e-government websites, subjective norms, perceived behavioural control and intention to use. One issue with the methodology used in this study is that it confined its sampling frame to undergraduate students, which may have possibly skewed the results of the study. The results show that attitude, subjective norms, perceived behavioural control has significant effect on intention to use e-Democracy tools on e-government websites. As discussed by Lyu (2008), there are significant differences in the e-participation as well as e-government activities between citizens with different levels of education. This implies that the outcomes of Al-Hujran et al. (2014) only reflect the perspectives of educated Jordanian citizens. Nonetheless, findings of the study revealed that the factors that greatly influenced citizens' intention to engage in e-participation were perceived ease of use and perceived usefulness (Al-Hujran et al., 2014 p. 45). In addition to this, it was found that subjective norms significantly affected intention to use: people in Jordan were heavily influenced by their perceived opinion of the social acceptance of engaging in e-participation, which is connected to the inherent collectivism of Arabic culture (Al-Hujran et al., 2014). On the other hand, (Ali et al., 2015)investigated the impact of two factors of the TAM model on citizens' acceptance and readiness to use e-participation in Bahrain. For this purpose, they conducted a survey of 250 citizens of Bahrain and the results confirmed that perceived usefulness and perceived ease of use are significant predictors. Al-Athmay (2015) also conducted research conducted in the context of an Arab country. Specifically, Al-Athmay (2015) measured the impact of demographic factors on citizens' use of e-governance in the United Arab Emirates (UAE) by conducting a survey of 1500 UAE citizens. The findings of the research revealed that

the demographic factors of age, gender, education and type of employment to be major determinants of citizens' use of e-governance.

The studies reviewed in this section reveal that while e-government services may be proliferating considerably in different countries, citizens' engagement in e-participation remains low. The important factors to consider in relation to this were many and varied across different socio-cultural contexts. Therefore, it is important to examine the e-participation habits and concerns of people within particular countries, which leads to the gap in literature explored in this study. While there have already been studies on the factors influencing citizens' attitudes and intention to engage in e-participation in different countries, including Jordan, none have been conducted in the context of Saudi Arabia.

2.6 Chapter Summary

This chapter reviewed previous studies in the context of e-government and e-participation. First, the chapter introduced the background information about the e-government and various types of e-government services. Then e-government in Saudi Arabia was discussed. Then the influencing factors such as attitude, subjective norms, website design and trust are reviewed in detail to provide a foundation for the development of conceptual model in Chapter 3.

CHAPTER 3 THEORETICAL BACKGROUND AND RESEARCH MODEL

This chapter presents the proposed research model and related hypotheses. Building on the literature review in Chapter 2, this chapter further explains the related theories and models that form the foundation of the research model to address the identified knowledge gap. Then, the justification for each of the hypotheses associated with the model is provided.

3.1 Theoretical Background

As explained in Section 2.4, the value of the e-government services are dictated by the way in which people utilize them. Nevertheless, there is a fairly low degree of utilization for some e-government services, like e-participation (Reddick, 2011). Whilst the Saudi Arabian government has put a significant amount of capital into the development of e-government, it faces a similar set of obstacles in using e-participation. Therefore, in accordance with the literature review, this study will investigate the series of factors thought to have the most impact on usage of e-participation activities on e-government websites among the Saudi citizens. These factors are as follows: trust, attitude, subjective norms, and web design. The majority of these factors have not been investigated thoroughly enough, within the parameters of e-participation or the Saudi Arabian population.

Therefore, this study intends to assess the influential factors which might impact on the intention to get involved with e-participation activities, via e-government websites in Saudi Arabia. According to Ajzen (1991), ‘intention’ can be described as a signifier of how much effort people are happy to input and of how much work they are willing to offer, as a way to carry out the behaviour. According to this research, ‘intention’ is described as the happiness of a person to engage in e-participation activities delivered by e-government websites. The following sections will outline each influential factor (attitude, trust, subjective norms and web design) and its relationship to e-participation context.

3.1.1 Attitude

The first factor that is predicted to influence the intention to engage in e-participation is attitude. There are a number of models that can be used to investigate attitude. The technology acceptance model (TAM), designed by Davis(1989), and the theory of planned behaviour (TPB), developed by Ajzen (1991), are the most frequently used models in information system research concerning the adoption to determine intention behaviour. The two main constructs of the TAM that impact on attitude are ease of use and perceived usefulness. The ease of use denotes that to what extent using a specific system or technology is to be free of effort and perceived usefulness refers to the belief of a person concerning to what extent using a specific system or technology could enhance job performance (Davis, 1989). In the literature, it was found that perceived usefulness has a stronger impact on attitude towards the technology acceptance more than ease of use (Davis, 1989).

The TPB model was adapted from the theory of reasoned action (TRA) theory developed by Fishbein and Ajzen(1975), which suggests that the main prediction of actual behaviour is formed by behavioural intention, which is determined by subjective norms and attitude towards that behaviour. Subjective norms refer to the social influence to perform or not perform behaviour and the attitude denotes the degree to which an individual makes a positive or negative assessment about certain behaviour (Ajzen, 1991).

Taylor and Todd (1995)proposed a new model based on the TPB called the decomposed theory of planned behaviour (DTPB). The DTPB breaks down the three TPB constructs (attitude, subjective norms and perceived behavioural control) into sub constructs, as shown in Figure 3.1.

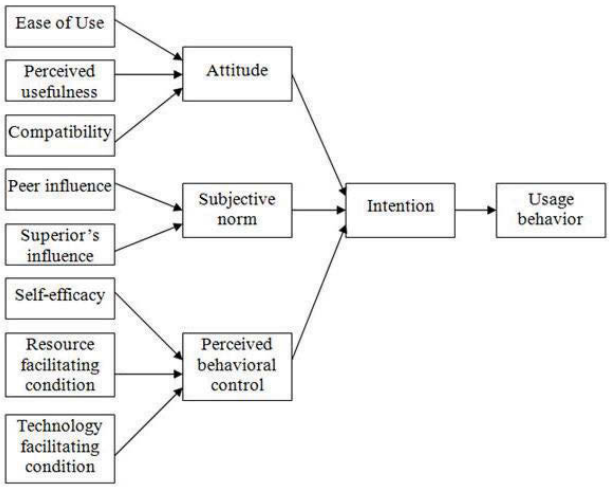

Figure 3.1: Decomposed theory of planned behavior (Taylor and Todd, 1995)

The DTPB separates attitude into three factors: perceived usefulness, perceived ease of use and compatibility. Compatibility refers to what extent using a new system is commensurate with current values, backgrounds and needs (Taylor and Todd, 1995). Compatibility is also one of the five factors in the diffusion of innovation (DOI) theory proposed by Rogers (2003). The DOI theory has five determinants that impact on the adoption: relative advantage, compatibility, trialability, complexity and observability.

TAM, TPB, DTPB and DOI have all been widely used in the research area of e-government (Hung et al., 2006, Kanat and Özkan, 2009, Chu and Wu, 2005, Alzahrani, 2011, Al-Hujran et al., 2014). This study adopts the attitude factors from DTPB model by Taylor and Todd (1995). The attitude dimension in DTPB captures the technology characteristics that are derived from the TAM.

As discussed in Section 2.4, Table 2.2 shows that people's attitude towards using e-participation services is an important predictor of the intention to use such services. Various studies have highlighted that attitude is considered as one of the factors that influence the use of e-government services by citizens (Alomari et al., 2012). Attitude is defined by Fishbein and Ajzen (1975) as "an individual's positive or negative feeling about performing the target behaviour". In the context of using e-government, the construct of attitude has been defined similarly in a number of studies. Shareef et al. (2011) consider attitude to be the subjective perspective of an individual towards the intention of using e-government services. Since e-participation service is the interaction between government and its citizens, citizens' attitude towards e-participation services

is an important determinant in the use of such services.

In Summary, the findings from the literature show that attitude is an important component in the use of e-government services. However, there are several factors that affect attitude and its importance may not be the same in all contexts. The current study considers the impact of attitude on e-participation rather than e-government services in general; in particular, the effect of perceived usefulness and compatibility on attitude towards the use of e-participation.

3.1.2 Trust

The second factor that is predicted to influence the intention to use e-participation is trust. Trust refers to the extent to which an individual believes that another individual or group will act in a favorable manner (Mayer et al., 1995). In the context of e-participation, the concept of trust is considered as the citizens' expectation that e-participation tools/website will act responsibly and reliably. Gaining the trust of citizens is a big challenge in using e-participation services. Several research studies have recognised that an individual's trust is an important element in accepting online services (Gefen et al., 2003, Pavlou and Gefen, 2004).In e-government context, several studies argue that trust has a significant effect on citizens' intention to use e-government services(Al-Fakhri et al., 2008b, AlAwadhi and Morris, 2009, Rehman et al., 2012b, Alzahrani, 2011, Carter and Belanger, 2005, Bélanger and Carter, 2008, Alomari et al., 2012, Al-Sobhi et al., 2011b).

As discussed in Section 2.4, previous empirical studies have explored the role of trust in citizens' intention to engage in e-participation. For example, Lee and Kim's (2014) study, finds that trust in government enables citizens to actively engage in e-participation activities because high trust in government dose encourage citizens to gain a sense of collaboration with their government. Scherer and Wimmer (2014)show that trust in e-participation tools positively affects the intended usage. The relationship between trust and citizens' intention to engage in e-government has been considered as the potential risks and uncertainties associated with using e-participation (Belanger and Carter 2008). As the e-participation service refers to two-way communication between citizens and government, therefore trust occupies a central role in creating effective e-participation activities between citizens and government. Reddick (2011) conducted a study that found that citizens from the USA are less confident about becoming a part of

consultative and participatory activities due to having poor trust in the government. Alzahrani (2011) conducted a study to find out the determinants of using e-government services in Saudi Arabia. The study found that trust in government and the Internet has an impact on the intention of Saudi citizens to use e-government service.

Carter and Belanger (2005) proposed a model that integrates factors from the TAM, the DOI and trustworthiness models that affect citizen acceptance of e-government. Figure 3.2 shows the model.

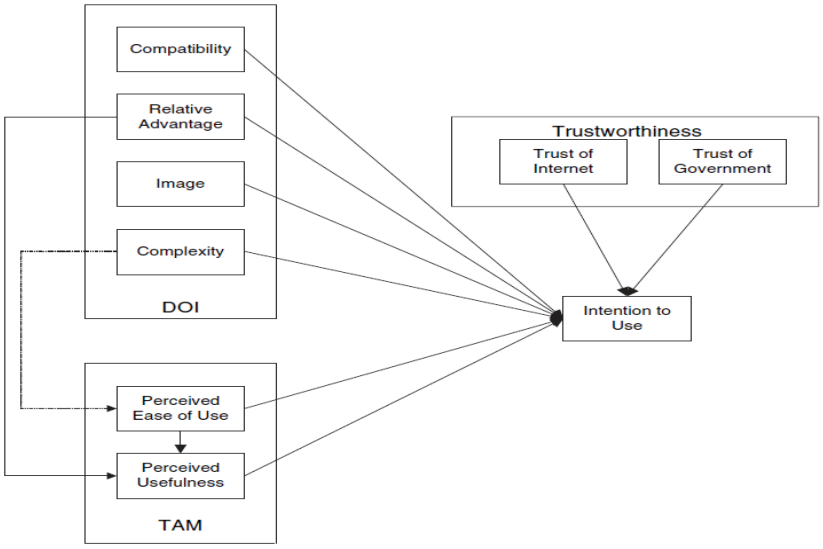

Figure 3.2: Carter and Belanger's (2005) model of acceptance of e-government

Bélanger and Carter (2005, 2008) found that trust (specifically trust in the government and in the Internet) has a positive effect on the intention to use e-government services. Lee and Kim (2014) note that trust in the government enables citizens to engage in e-participation. In addition, Scherer and Wimmer (2014) show that trust in e-participation tools positively affects the intended usage. Figure 3.3 shows a trust model for e-participation based on Scherer and Wimmer's model.

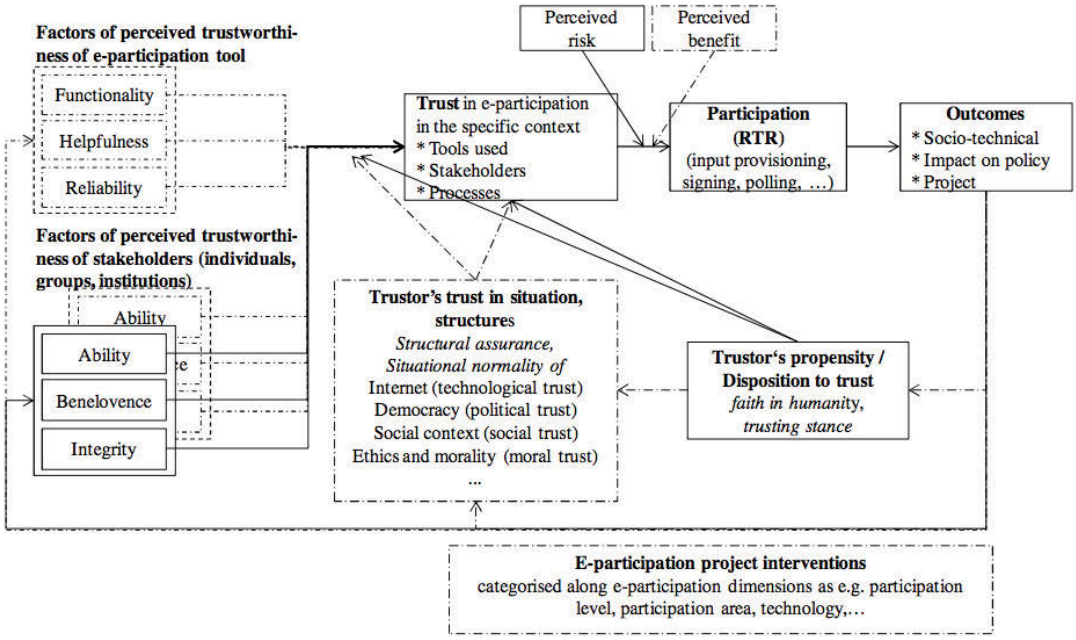

Figure 3.3: Trust model for e-participation (Scherer and Wimmer 2014)

Scherer and Wimmer's (2014) trust model for e-participation combines the elements of the integrative model for trust in organizational settings (adopted from(Mayer et al., 1995)) (solid lines and boxes) and the interdisciplinary model of trust (adopted from(McKnight et al., 2002)) and insights for e-participation (dotted lines and boxes).

Drawing from the models discussed in this section, in the current study trust in the government, trust in the Internet and social trust are considered as significant aspects of citizens' trust concerning e-participation.

3.1.3 Subjective Norms

As discussed in Section 2.4, previous researchers identified three important referent groups of subjective norms: family, friends/colleagues and media influence (Hung et al., 2006, Taylor and Todd, 1995, Lau, 2004, Alzahrani, 2011). Subjective norms describe a person's social influence from others (for example, family, friends and colleagues) based on their opinions about behaviour (Ajzen, 1991). In this study subjective norms refer to citizens' social influence to use e-participation.

A number of theoretical models such as the theory of planned behaviour (TPB) hypothesize that subjective norms have a significant direct impact on behavioural intention (Ajzen, 1991) and empirical evidence of the relationship between subjective norms and citizens' intention to use e-government services are found in many

studies(AlAwadi and Morris, 2009; Hung et al., 2006). Ahmad et al. (2013) employed the unified theory of acceptance and use of technology (UTAUT) model to study the factors that influence the usage of e-government services in Pakistan from the citizens' perspective. One of the factors that they studied is the social influence received from others to influence citizens' use of the e-government services. Their findings showed that social influence has an influence on citizens' using e-government services.

In a collectivist culture such as Saudi Arabia, an individual's behaviour is strongly affected by opinions received from people who are important to them(Al-Fulih, 2002). Web 2.0's collaborative technologies permit two-way interaction between citizens and government through online comments, live chats, message threads, social networking sites, blogs and wikis. This online communication allows for the exchange of information between the government and citizens and among citizens(Nam, 2012; Vicente and Novo, 2014). This emphasizes the importance of subjective norms in the intention of citizens to engage in e-participation activities.

3.1.4 Web Design

A website is the main way a government interacts with their citizens. Therefore, the appearance of e-government websites can encourage or discourage citizens from using the online services. For example, Wang et al. (2005) highlight that website design is one of the main challenges in producing e-government services. A well-designed website helps users find relevant information effectively, thus developing the perception of being user friendly (Alshehri et al., 2012b, Alomari et al., 2012). Although no previous studies have examined the influence of website design on users' intention to use the website in the context of e-participation, researchers have studied web design in the context of e-government services (Segovia et al.2009). Their findings suggest that a well-designed e-government website can enhance citizens' intention to use e-participation services. According to Alomari et al. (2012), e-government website design has the potential to determine the citizens' intention to engage in e-participation initiatives. Ali et al. (2015) propose a model based on the technology readiness index (TRI) and the TAM. They show that the perceived usefulness and perceived ease of use have positive influences on citizens' readiness to use e-participation tools in Bahrain.

According to Freed and Berg (2012), E-Government Satisfaction Index recommends seven features be used to attract more citizens to the actively use e-government

websites: functionality and usefulness of the online features; content (the accuracy and quality of information); search (the quality of search results available); navigation (the organization of the site and options for navigation); look and feel (the visual appeal of the website); transparency of the information about what the government is doing; and website performance (speed, consistency, and error-free loading of web pages).

Therefore, drawing from the research discussed in this section, in this study web design refers to the ease of use aspects together with various web design features such as navigational design, presentation style and information content that contribute to the overall e-government website quality.

3.2 Research Conceptual Model

As discussed in Section 2.4 and based on the above theories, a model is proposed to describe citizens' intention to engage in e-participation on e-government websites in the Saudi Arabian context. For example, subjective norms and attitude have been identified by numerous prior research studies to play a significant role in citizens' intention to use e-government services (Soon and Soh, 2014, Nam, 2012, Hung et al., 2006, Vicente and Novo, 2014, Alzahrani, 2011, Al-Hujran et al., 2011). In addition to those two factors, the review of the literature revealed two other factors also have a significant impact on citizens' intention to use e-participation: web design and trust (Alzahrani, 2011, Segovia et al., 2009a, Bélanger and Carter, 2008, Scherer and Wimmer, 2014, Lee and Kim, 2014, Alomari et al., 2012).

Hence, four key factors (subjective norms, website design, attitude and trust) are selected to explain citizens' intention to engage in e-participation. The goal of this study is not to provide a complete view of all factors influencing the use of e-government rather the emphasis is on revealing factors that influence e-participation specifically. Figure 3.4 shows the research model.

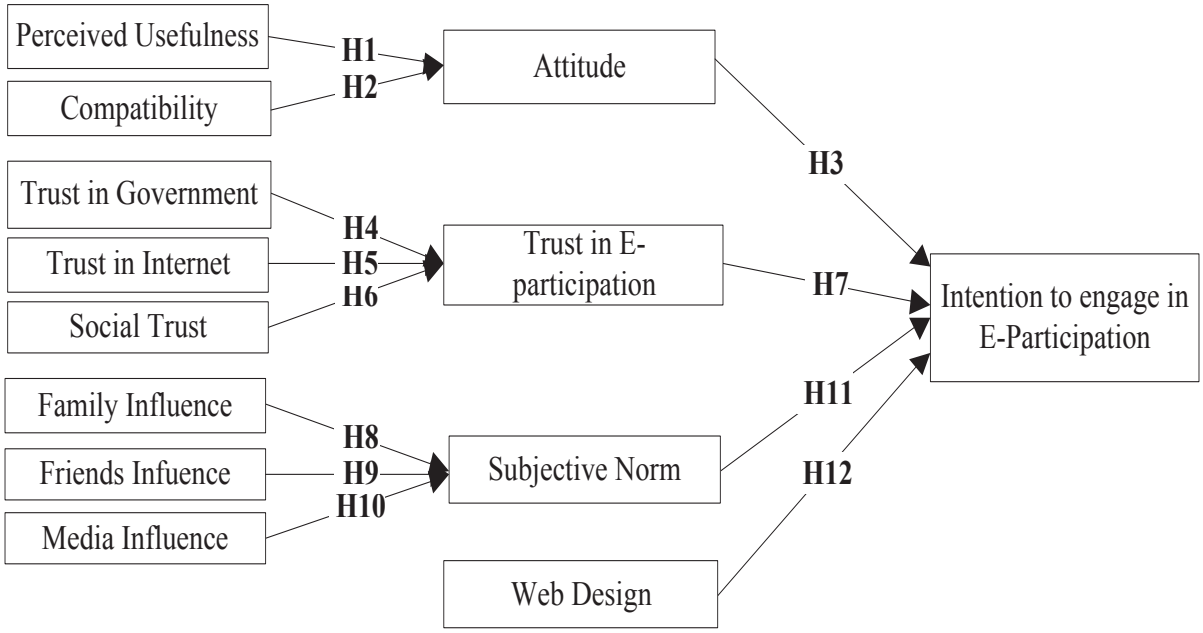

Figure 3.4: Proposed Research model

The definitions of the key factors used in the research model are summarized in Table 3.1.

Table 3.1: Definition of the model constructs

Constructs		Description	Sources
Main Constructs	**Sub-Constructs**		
Intention to engage in e-participation		The individual's willingness to use e-participation on e-government websites	(Ajzen, 1991)
Attitude		The degree to which an individual has a positive or negative assessment about using e-participation.	(Fishbein and Ajzen, 1975)
	Perceived Usefulness	To what extent using e-participation services on e-government websites can benefit citizens.	(Rogers, 2003, Lau, 2004, Carter and Belanger, 2005)
	Compatibility	The extent to which using e-participation is compatible with citizens' values and beliefs, backgrounds, lifestyle and culture.	
Trust		The citizen's expectation that the e-participation tools/website will act responsibly and reliably.	(Mayer et al., 1995, Bélanger and Carter, 2008, Teo
	Trust in	Citizens' beliefs that the trustees	

	government	(government agencies) have characteristics those are beneficial to him or her.	and Liu, 2007, Blind, 2007)
	Trust in the Internet	The extent to which the citizens trust the security and competence of the Internet.	
	Social trust	Citizens' trust in others members of the social community	
Subjective norms		The social influence from others concerning whether to engage in e-participation or not.	(Ajzen, 1991, Hung et al., 2006, Alzahrani, 2011)
	Family Influence	The citizens' perceptions of family referents to engage in e-participation	
	Friends/ colleagues Influence	The citizens' perceptions of friends'/colleagues' referents to engage in e-participation	
	Media Influence	The citizens' perceptions of media referents to engage in e-participation	
Web design		Considers the ease of use aspects of an e-government website together with various web design features such as navigational design and presentation style	(Freed and Berg, 2012, Alomari et al., 2012)

3.3 Hypothesis Development

This study aims to answer this research question; what are the key factors that influence citizens' intention to engage in e-participation on e-government websites in Saudi Arabia? To answer this research question, the following hypotheses were developed in relation to research questions.

3.3.1 Attitude

As stated by Ajzen (1991), the definition of attitude is the degree to which an individual has a positive or negative assessment about particular behaviour. Ajzen states that attitude is an element of the beliefs of an individual addressing a particular behaviour and the conclusions drawn from the behaviour's results. When there is positive progress towards a particular behaviour, it is deduced that the individual has the intention to adopt a positive behaviour. Consequently, a favorable attitude can influence a citizen's intention to engage in e-participation services. Several studies in the information systems (IS) literature verify the relationship between attitude and intention. In the context of e-government services, several researchers investigated the impact of attitude on using e-services(Alomari et al., 2012,

Sahu and Gupta, 2007, Shareef et al., 2011, Wu and Chen, 2005, Shin, 2012), such as the significant effect of citizens' attitude towards e-government services in Arabic countries (Charbaji and Mikdashi, 2003, Pons, 2004, Alzahrani, 2011, Al-Hujran et al., 2011). Pons (2004) highlights that throughout the Arab world initiating an e-government system requires positive social attitudes as the same with traditional way of conducting business. Additionally, Persaud and Sehgal (2005) show that attitude is an important predictor of citizens' intention to use e-services.

There are various factors that have been considered in regards to their affect on a person's attitude towards e-government services in the literature (Al-Hujran et al., 2011, Hung et al., 2006, Sahu and Gupta, 2007, Rehman and Esichaikul, 2010). These studies have shown a positive relationship between perceived usefulness, compatibility and attitude. For example, a study conducted by Hung et al. (2006) found that attitude was influenced by usefulness, ease of use, trust and compatibility. Lau (2004) found that there is a significant relationship between perceived usefulness, compatibility and attitude. Al-Hujran et al. (2011) found that usefulness is the significant predictor of attitude towards using e-government services in Jordan.

Attitude is often predicted to be the factor that has the most significant impact on a person's intention to engage in e-participation. For example, Chu and Wu (2005) and Hung et al. (2006) also show that attitude is one of the significant factors that influence e-government services' acceptance in a developing country.

Since e-participation service is the interaction between a government and its citizens, citizens' attitude towards e-participation is an important determinant for the use of such services. Through e-participation services, people are motivated to communicate with the government and share their opinions. This process requires a positive attitude towards e-participation services. It is anticipated that citizens who have a positive attitude towards e-participation are more likely to engage in e-participation initiatives in e-government websites. Therefore, the following hypotheses are developed.

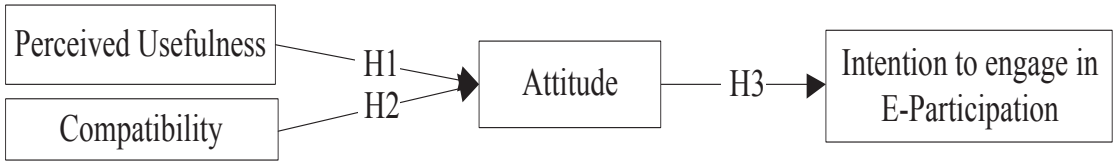

Figure 3.5 Hypotheses H1, H2 and H3

Hypothesis1 ***(H1):*** Perceived usefulness has a significant positive effect on citizens' attitudes towards e-participation activities.

Hypothesis2 ***(H2):*** Compatibility has a significant positive effect on citizens' attitudes towards e-participation activities.

Hypothesis3 ***(H3):*** Citizens' attitude towards e-participation affects citizens' intention to engage in e-participation activities.

3.3.2 Trust

Several studies argue that trust has a significant effect on citizens' intentions to use e-government services (Al-Fakhri et al., 2008a, AlAwadhi and Morris, 2009, Carter and Belanger, 2005, Rehman and Esichaikul, 2011, Al Shehry et al., 2009, Alomari et al., 2012, Al-Sobhi et al., 2011b). Researchers find that trust in e-government services is motivated by two important dimensions: trust in government agencies (trusting beliefs) and trust in the Internet (structural assurance) (Bélanger and Carter, 2008, McKnight and Chervany, 2002, Schaupp et al., 2010). Trust in the Internet refers to that the perception that the Internet/website possesses the necessary technical safeguard tools (Gefen, 2003). Trust in government (trusting beliefs) refers to what extent a person believes that trustee has the characteristics that are considered as beneficial to him or her (Mayer et al., 1995). Previous researchers suggest that two important dimensions drive trust in e-government: trust in government and trust in the Internet(McKnight et al., 2002, Carter and Belanger, 2005, Alomari et al., 2012). However, trust from psychology, sociology and social psychology should be considered when analyzing trust in e-participation, such as social trust (Scherer and Wimmer 2014).

Trust between citizens and government is an important factor to in order to ensure the successful acceptance of e-government services (Lee and Kim, 2014; Reddick, 2011; Warkentin et al., 2002). According to Carter and Bélanger (2005), citizens need to trust both their government and the resources and technologies provided. Additionally,

Belanger and Carter (2008) verify that trust in both the government and technology are vital factors of citizens' willingness to use e-government services, such as e-participation. Alsaghier et al.'s (2010) findings find a significant positive effect of trust on e-government usage. Alzahrani (2011) claim that trust in government and the Internet has an impact on the intention of Saudi citizens to use e-government services. In their study, Al-Sobhi et al., (2009) found that trust in the Internet and trust in an intermediary (government) have important effects on citizens' intention to use e-government. In a similar study, Belanger and Carter (2008) found that both trust factors (trust in the Internet and in government agencies) are important elements in citizens' willingness to use e-government. In this regard, Reddick (2011) conducted a study to examine the interaction of citizens with e-government based on the e-participation model. The study found that people were less likely to use consultative and participatory activities because of the lack of trust in government.

Previous empirical studies have explored the role of trust on citizens' intention to engage in e-participation. Lee and Kim (2014) note that trust in government encourages citizens to engage in e-participation activities because citizens trust that government takes their inputs into consideration. Scherer and Wimmer (2014) show that trust in e-participation tools positively affects the intended usage. Trust is also a crucial factor in using e-participation services.

This study argues that citizens will intend to engage in e-participation service if they trust in e-participation and that they tend to trust e-participation services if they have trust in the government to provide interactive e-participation and take their opinions into account concerning decision-making. Moreover, citizens will trust e-participation if their trust in the Internet is high because e-government websites use a range of the tools for e-participation, for example using social networking sites. Furthermore, in e-participation citizens are expected to share their opinions with others, hence citizens' trust in others has an effect on their trust in e-participation. Therefore, the following hypotheses are developed.

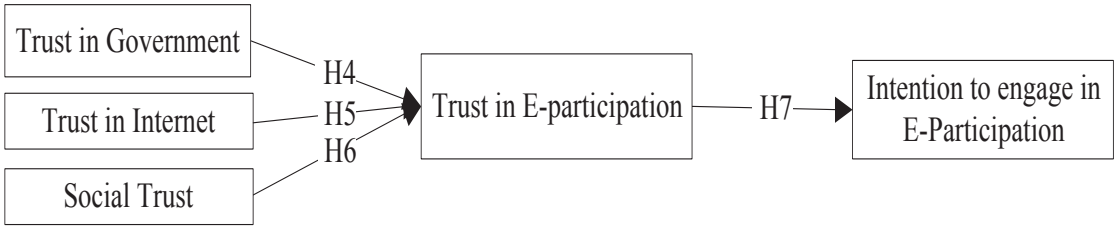

Figure 3.6 Hypotheses H4, H5, H6 and H7

Hypothesis 4*(H4):* Trust in government has a significant positive effect on citizens' trust in e-participation activities.

Hypothesis 5 *(H5):* Trust in the Internet has a significant positive effect on citizens' trust in e-participation activities.

Hypothesis 6 *(H6):* Social trust has a significant positive effect on citizens' trust in e-participation activities.

Hypothesis 7 *(H7):* Citizens' trust in e-participation has a significant positive effect on citizens' intention to engage in e-participation activities.

3.3.3 Subjective Norms

Empirical evidence of the relationship between subjective norms and citizens' intention to use e-government services can be found in many studies (Al Awadi and Morris 2009; Hung et al. 2006). Loch et al. (2003)found that individuals within a society influence others' use of e-services to increase acceptance. Hung et al. (2006) found that both peers and media influence have significant effects on subjective norms towards using online services provided by government. Later, Lau (2004) studied the adoption of e-government services in Hong Kong and found that the opinions of an individual's family had a significant influence on the individual's decision to use government services. Hung et al. (2006) found that two groups have a significant effect on subjective norms: peers/colleagues and the media. McGrath et al., (2012) found that online in Europe, the Middle East and Latin America social networking in e-participation allows for the fast mobilization of citizens and the immediate transfer of information. Al-Hujran et al., (2014) investigated the factors that impact citizens' adoption of e-democracy tools on e-government websites in Jordan in an e-participation

context and found that subjective norms are significant direct predictors of citizens' adoption of e-democracy. As using e-participation is optional, social influence received from others may be the first step to engage in such activities. AlHinai et al.,(2010) argue that individuals' behaviour towards using services that are used in a social environment is affected by others.

An individual's behaviour in a collectivist culture such as Saudi Arabia is affected by social norms received from people who are considered important to them. For example, Al-Fulih (2002) shows the Saudi Arabian culture encourages its citizens to be socially active and engenders strong relationships among family members. Therefore, the relationship between subjective norms (the influence of family, friends/colleagues and social media) and the intention to use e-government services is positive. This leads to the following hypotheses:

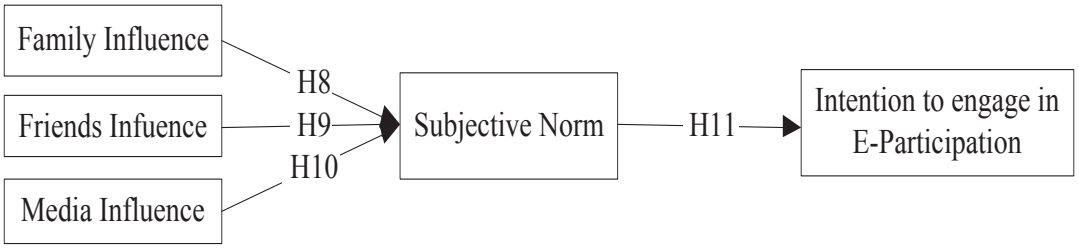

Figure 3.7 Hypotheses H8, H9, H10 and H11

Hypothesis 8 ***(H8):*** Family influence has a positive effect on subjective norms.

Hypothesis 9 ***(H9):*** Friends/colleagues influence has a positive effect on subjective norms.

Hypothesis 10 ***(H10):*** Media influence has a positive effect on subjective norms.

Hypothesis 11 ***(H11):*** Subjective norms have a significant positive effect on citizen's intention to engage in e-participation activities.

3.3.4 Web Design

A well-designed e-government website delivers services that conform to citizens' expectations and foster trust, which in turn enhance citizens' intention to engage in e-participation. A well-designed e-government website positively impact citizens' intention to use e-participation and hence increases trust (Chee-Wee et al., 2008).

Segovia et al., (2009) found that well-designed e-government websites can enhance citizen's intention to use e-participation services. According to Kumar et al., (2007), website design, including ease of navigation, accessibility and personalisation, have a positive effect on citizens' satisfaction and e-government adoption. E-government website design has the potential to determine the citizens' intention to engage in e-government initiatives (Alomari et al., 2012).

Wang et al., (2005) showed the importance of e-government website design in determining the success or failure of delivery of customer-centric services and information. Similarly, Gilbert et al., (2004) found that visual appearance is a significant factor that influenced citizens' willingness to use government e-services. Aladwani (2013) studied the web interface quality (such as technical, content, aesthetic, and service quality) of e-government websites across cultures. The author investigated Arabic and English versions of the selected websites and found that users place emphasis on the website's overall content and appearance.

It is expected that well-designed e-government websites attract citizens' e-participation activities. Therefore, the following hypothesis is developed.

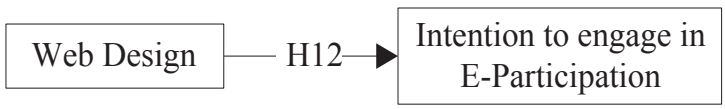

Figure 3.8 Hypothesis H12

Hypothesis 12 (H12): Good Web design has a significant positive effect on citizens' intention to engage in e-participation activities.

The alignment between the research questions, sub questions, factors and hypotheses is outlined in Table 3.2.

Table 3.2: The alignment between research, factors and hypotheses

Research question	Sub-questions	Factors	Hypotheses
What are the key factors that influence citizens' intention to engage in e-participation on e-government websites in Saudi Arabia?	How does citizens' attitude affect intention to engage in e-participation activities in the Saudi Arabian e-government context?	**Perceived usefulness**	**H1:** Perceived usefulness has a significant positive effect on citizens' attitudes towards e-participation activities.
		Compatibility	**H2:** Compatibility has a significant positive effect on citizens' attitudes towards e-participation activities.
		Attitude	**H3:** A favorable attitude towards e-participation positively affects citizens' intention to engage in e-participation activities.
	How does citizens' trust affect intention to engage in e-participation in the Saudi Arabian e-government context?	**Trust in government**	**H4:** Trust in government has a significant positive effect on citizens' trust in e-participation activities.
		Trust in the Internet	**H5:** Trust in the Internet has a significant positive effect on citizens' trust in e-participation activities.
		Social trust	**H6:** Social trust has a significant positive effect on citizens' trust in e-participation activities.
		Trust in e-participation	**H7:** Citizens' trust in e-participation has a significant positive effect on citizens' intention to engage in e-participation activities.
	How do the citizens' subjective norms intention to engage in e-participation in the Saudi Arabian e-government context?	**Family influence**	**H8:** Family influence has a positive effect on subjective norms.
		Friends'/colleagues' Influence	**H9:** Friends'/colleagues' influence has a positive effect on subjective norms.
		Media influence	**H10:** Media influence has a positive effect on subjective norms.
		Subjective norm	**H11:** Subjective norms have a significant positive effect on citizen's intention to engage in e-participation activities.
	How does e-government website design affect citizens' intention to engage in e-participation in the Saudi Arabian e-government context?	**Web design**	**H12:** Good Web design has a significant positive effect on citizens' intention to engage in e-participation activities.

3.4 Chapter Summary

In this chapter, the theories and models related to the research topic were reviewed in order to provide a foundation for the research model proposed in this study. Justifications of the concepts used in the model were provided. The hypotheses developed for each factor studied in this research were identified and discussed and their relationship to the research questions was identified. The following chapter provides the research methodology used in this study.

CHAPTER 4 RESEARCHMETHODOLOGY

This chapter describes the research methodology adopted for this study in order to investigate the factors that influence citizens' intention to engage in e-participation activities on e-government websites in Saudi Arabia. Firstly, the research design is explained. Then, the quantitative approach is presented, which includes the instruments used for this study. Next, the population and sample are described and the data collection and data analysis procedure are discussed. Following that, the qualitative approach of this study, a focus group including data collection, and data analysis are presented. Finally, the chapter concludes with a summary.

4.1 Research Paradigm

Easterby-Smith et al. (2002) believe that the investigatory model and the theoretical aspects that shape it should be fully comprehended, in order for the product of investigation to be constructive. Citizens' intention to engage in e-participation and the impact of social and psychological dynamics is explored in this research, therefore it is pertinent to the field of wider social science study. Easterby-Smith et al. (2002) identified interpretivist and positivist philosophies as the main approaches to social science investigations. They defined an interpretivist method as determining how individuals describe their conduct and why perspectives and interpretations of events alternates. Neuman (2005) defined a positivist method as utilising available theoretical explanations to form hypotheses, then testing them through experimental observation of the conduct of individuals.

Research methods can be categorized as either qualitative or quantitative. Creswell (2013) determined that qualitative research typically seeks to explain the significance that is given to particular events or phenomenon by individuals, usually by identifying a limited number of cases and assessing written information. Interpretivism is often closely aligned with this method. Mitchell and Bernauer (1998) explained that quantitative research often aims to produce conclusions that are applicable to a wider number of people, by assessing quantifiable information statistically; positivism usually characterises such as approach.

The research method of this study employs a mixed-method approach, using both quantitative and qualitative methods to consider positivist and interpretivist approaches to represent, as accurately as possible, the phenomenon under investigation (Neuman, 2005). A quantitative (positivist) approach is used as the primary approach for this research and a qualitative (interpretivism) approach is then used to complement the findings from the quantitative analysis. Firstly, through the positivist approach well-established theories and related literature were studied to develop hypotheses and a conceptual model. The conceptual model was measured using a series of quantitative analyses to explain the prevalent phenomena of citizens' intention to engage in e-participation. The survey method was used to measure the model's constructs. Secondly, qualitative analysis was employed to offer a better understanding of how relevant the conceptual model was to the phenomena under investigation. For this type of analysis, focus groups were employed as a supplementary procedure.

Tashakkori and Teddlie (1998) also devised the term prevailing-less prevailing mixed method for such a research design, whereby the qualitative methodology takes a less central role to the quantitative aspect of the methodology. Neuman (2005) advocated adopting a mixed method in the belief that the findings' comprehension will be much richer as a consequence. Moreover , Tashakkori and Teddlie (1998) argued that if there are unusual findings and data identified by the quantitative method, an element of qualitative investigation can assist with checking the results.

4.2 Research Design

The research design adopted for this study is outlined in Figure 4.1. Firstly, the existing literature was reviewed in order to identify knowledge gaps, which then led to the research question (what are the key factors that influence citizens' intention to engage in e-participation on e-government websites in Saudi Arabia?). To answer the research questions, a conceptual model was developed based on the existing theories and a literature review. The conceptual model consists of factors that were operationalised for the development of a questionnaire. In the first phase (the quantitative analysis), a questionnaire for the survey was developed based on previous validated instruments. Then, the statistical analysis (descriptive and measurement scale analysis) was conducted to test the hypotheses and answer the research questions. In the second phase of the study (the qualitative analysis), the conceptual model was tested by conducting a

focus group discussion to validate the quantitative results. The discussion on findings and implications are provided and then the study concludes.

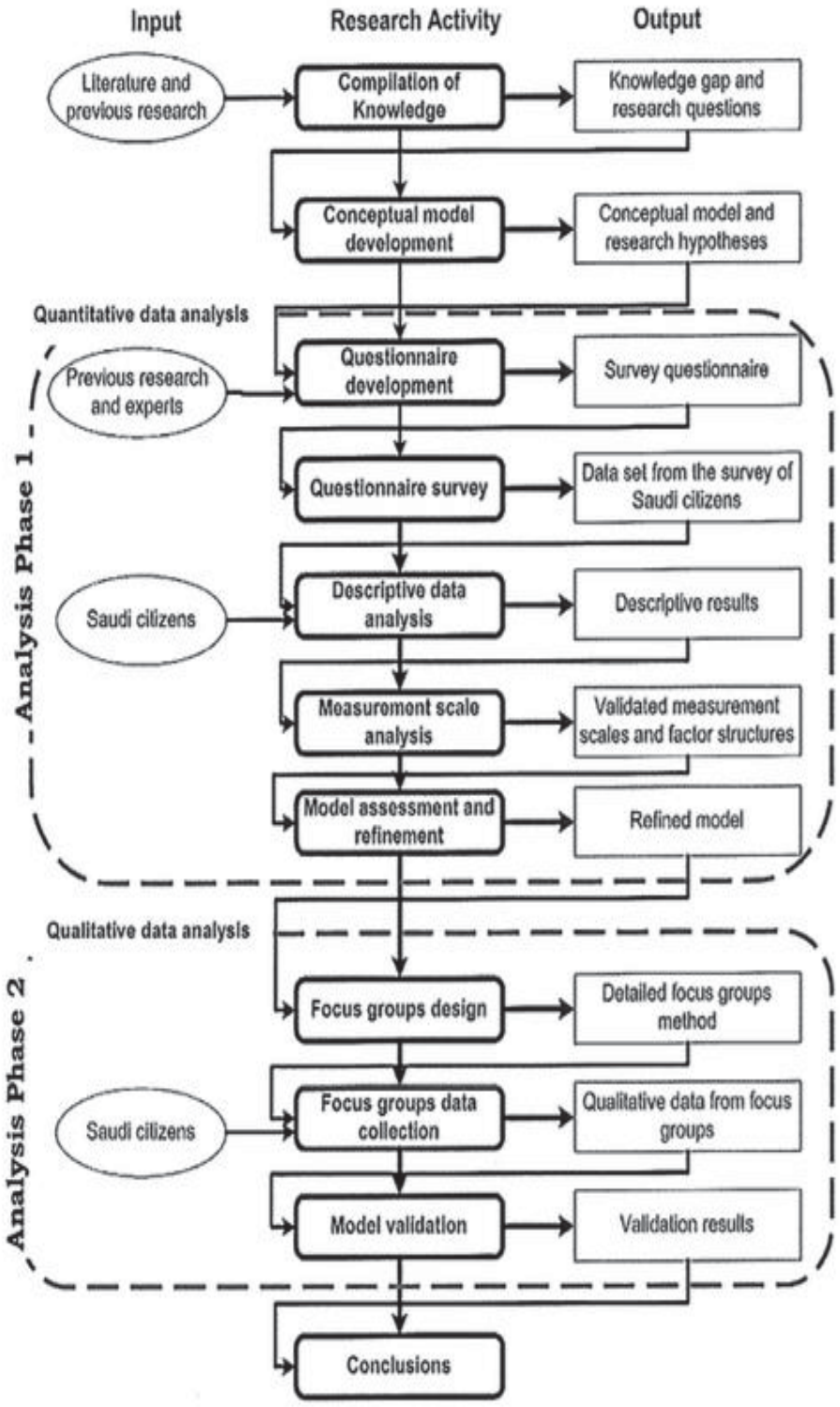

Figure 4.1: Research design

4.3 Quantitative Study

The objective of the quantitative method is to assess the conceptual framework using a range of statistical and analytic techniques to examine survey data. The causal links between the model constructs were evaluated using multivariate analyses, based on the survey data. The primary aim of the framework assessment strategy was to examine the causal links shared by the model constructs. A causal correlation is a dependence link between two or several sufficiently correlated factors, where one or numerous factors generate or lead to a result, which is evidenced by at least one additional factor (Hair et al., 2013). The assessment emphasized the determination of how and to what degree one variable can generate an association within another (Cavana et al., 2001). The conceptual model was then enhanced, by eradicating all non-essential relationships. It was re-evaluated to guarantee that it closely reflected the survey data.

4.3.1 Questionnaire Design

It is essential that quantitative research involves carefully constructed surveys (Creswell, 2013). For this research, previous validated survey questions were utilized, so that the answers reliably mirrored citizen opinions; this increases the accuracy of the survey. There is an outline of the survey structure below.

The constructs in the survey were all measured using a series of statements. These statements were measured via the use of Likert scale statistical signifiers (from 1 at strongly disagree to 5 at strongly agree). The items used in the survey are presented in Table 4.1 and Appendix A and B. The survey was divided into two parts:

- Section 1 acquired demographic data about the participants and their online and e-government encounters.
- Section 2 asked about participant perspectives on the variables outlined in the proposed research framework.

The survey was pretested by one academic expert in survey design and three PhD students, from the information systems department of University of Technology Sydney - they all have a comprehensive understanding of e-government services. The pretesting was adopted to explain the arrangement, components, and measurement signifiers associated with the survey. There were no pressing problems identified within the survey components and a few minor issues were solved with the help of the specialist.

Table 4.1outlines all of the survey items used, which have been adopted from previous research and modified to fit this study.

Table 4.1: Survey Items

Factors		Items	Sources
Attitudinal factors	**Perceived usefulness**	electronic participation (e-participation) activities in e-government websites would enable me to interact with government agencies effectively	(Al-Hujran et al., 2011, Davis, 1989, Carter and Belanger, 2005, Alzahrani, 2011, Tan and Teo, 2000)
		e-participation activities in e-government websites would enhance my effectiveness in interacting with government agencies	
		e-participation in e-government websites is a convenient way to interact with government agencies	
		e-participation in e-government websites would enhance the effectiveness in searching for and utilizing government information	
		e-participation in e-government websites would give me a greater chance to express my opinion to the government agencies	
		e-participation in e-government websites would enable me to participate in decision-making	
		e-participation in e-government websites would be useful to participate in decisions	
	Compatibility	e-participation in e-government websites fits well with the way that I like to interact with government agencies	(Taylor and Todd, 1995, Al-Fulih, 2002, Carter and Belanger, 2005, Alzahrani, 2011)
		e-participation in e-government websites fits into my beliefs	
		e-participation in e-government websites is compatible with my religious aspects in decision-making	
		e-participation in e-government websites is compatible with my values in decision-making	
		e-participation in e-government websites is compatible with my needs to communicate with government agencies	
	Attitude	using e-participation in e-government websites is a good idea	(Taylor and Todd, 1995, Alzahrani, 2011, Bhattacherjee, 2000)
		I like the idea of e-participation in e-government websites	
		using e-participation in e-government websites is a pleasant experience	
		e-participation in e-government websites is an interesting idea	
Trust factors	**Trust in government**	Government agencies have the skills and expertise to provide e-participation in an expected manner	(Bhattacherjee, 2002, Bélanger and Carter, 2008, Alzahrani, 2011, McKnight et al., 2002, Colesca, 2009)
		Government agencies have the ability to meet citizens' needs	
		Government agencies can be trusted to participate in decisions faithfully	
		Government agencies are truthful in consulting with me	
		I trust that the government agencies take my opinions in consideration	
		I trust that government agencies care about my opinions and suggestions	
		In my opinion, government agencies are trustworthy	
		I think that I can trust government agencies to provide interactive e-participation	
	Trust in the Internet	The Internet has enough safeguards to make me feel comfortable when using e-participation in e-government websites	(Bhattacherjee, 2002, Bélanger and Carter, 2008, Alzahrani, 2011, McKnight et al., 2002, Colesca, 2009, Carter and
		I feel assured that legal and technological structures adequately protect me from problems on the Internet	
		I feel confident that encryption and other technological advances on the Internet make it safe for me to	

		communicate with government agencies	Belanger, 2005)
		In general, the Internet is a robust and safe environment in which to interact with government and other citizens	
	Social trust	Most citizens are reliable	Alsaghier et al. (2011) (Pavlou and Gefen, 2004, Colesca, 2009)
		Most citizens keep commitments	
		Most citizens are honest in their opinions	
	Trust	I would trust e-participation in e-government websites to express my opinion	(Colesca,2009, Alsaghier et al., 2011)
		I trust e-participation in e-government websites	
		I believe that e-participation in e-government websites would be trustworthy	
Social influence factors	**Family Influence**	My family thinks that I should use e-participation in e-government websites to express my opinion	(Bhattacherjee, 2000, Taylor and Todd, 1995, Alzahrani, 2011, Hung et al., 2006)
		My family thinks that using e-participation is a good idea	
		My family has an influence on my decision to try out e-participation	
	Friends/Colleagues Influence	My friends/colleagues think that I should use e-participation in e-government websites to express my opinion	
		My friends/colleagues think that using e-participation is a good idea	
		My friends/colleagues have an influence on my decision to try out e-participation	
	Media Influence	I read/saw news reports that using e-participation in e-government websites was a good way of expressing opinion/voice to government agencies	(Bhattacherjee, 2000, Taylor and Todd, 1995, Alzahrani, 2011, Hung et al., 2006)
		The popular press depicts a positive sentiment concerning engaging in using e-participation in e-government websites	
		Mass media reports would influence me to try out e-participation	
	Subjective norms	People who influence me think that I should use e-participation in e-government websites	(Bhattacherjee, 2000, Taylor and Todd, 1995, Alzahrani, 2011, Hung et al., 2006)
		People important to me think that I should use e-participation in e-government websites	
		People whose opinions I value would prefer that I use e-participation in e-government websites	
		People who influence my decisions think that I should use e-participation in e-government websites	
Web Design		E-government websites have clear directions for navigating the website	(Aladwani and Palvia, 2002, Venkatesh, 2003, Alomari et al., 2012, Cyr, 2013)
		E-government websites provide good navigation facilities to the website's content	
		I can easily navigate e-government websites	
		E-government websites have well- organized content	
		E-government websites have reliable and updated information	
		E-government websites provide simple and understandable information	
		The e-government website adequately meets my information needs	
		E-government websites have attractive presentation (colour and images)	
		E-government websites have meaningful animations	
Intention to Engage		I intend to engage in e-participation activities on e-government websites	(Carter and Bélanger, 2005,Alzahrani, 2011)
		I would use e-participation provided on e-government websites to participate in decision-making	
		Using e-participation is something that I would do	
		I would not hesitate to use e-participation on e-government websites to interact with government agencies	

4.3.2 Instrument Translation

The measurement scales utilized in this study were originally created in English (refer to Appendix A). Nevertheless, the first language of Saudi Arabia is Arabic. Thus, the survey was converted into this language (refer to Appendix B). Plus, an Arabic version of the participant invitation letter (refer to Appendix B) was also created.

The final Arabic version of the survey was delivered to a collection of seven specialists in information technology field, who all speak Arabic as a first language. The reason for converting the original survey into Arabic in the first place was to ensure the meaning and functions for the survey measurement items are clear. Functional equivalence guarantees that the converted measurement items carry identical meanings to the English versions of the statements; they are as simple to understand as just as easy to answer.

4.3.3 Sample and Sampling Size

The target population investigated in this research consists of Saudi citizens. Thus, the participants can be perceived as citizens of the Saudi Arabia who have some experience in using the Saudi e-government websites. A number of experts propose the number of the rules of thumb, as a way to predict the sample sizes for studies which employ the structure equation modelling (SEM) as a method. For example, Hair et al. (2013) notices that within the key SEM studies, a sample size of 200-400 (for 10-15 indicators) is usually used. Consequently, this research has chosen to use a sample size of 770 participants.

4.3.4 Data Collection

This research used a survey tool as a way to collect and process responses accurately. A series of close-ended questions were employed as part of the survey. The term ‘close-ended’ describes queries which are made up of a small number of ‘mini responses,’ in order to elicit more comprehensive answers. The people involved in the survey were asked to choose from these ‘mini responses,’ rather than writing down or trying to explain their personal thoughts. To raise the rate of engagement, the survey was designed to be brief; it took no more than 15 minutes to complete. Neuman (2005) states that quantitative research should try to investigate the potential relationships within the theoretical framework. This is why the survey method was thought to be the most appropriate way of gathering information which accurately represents citizens’

perceptions on e-participation in Saudi Arabia. The survey was delivered and completed online. It was hosted by Qualtrics online operating tools. The link to access the survey was posted on a range of social networking websites. The decision to use this method further facilitated the involvement of a culturally varied selection of people and it helped the researchers to invite more people to take part.

As well as closely monitoring the duration of the survey, the following strategies were employed as a way to enhance the rate of engagement with this research(Sekaran, 2003):

- Reducing the survey to the lowest possible completion time by making the survey brief as possible
- Including a covering letter alongside the survey, which explains the role of the researchers, the study aim, and the significance of the study for the participants.

It took from December 2014 to February 2015 for all of the survey responses to be acquired. The final count was 1233 responses. However, after removing incomplete responses and outliers, the total was reduced to 770 useful sample responses; these were used to test the proposed model.

4.3.5 Data Analysis

The data collected was assessed via the use of structural equation modelling (SEM) statistical methods. These SEM strategies are usually used to identify the links between independent and dependent components. A range of exploratory and confirmatory analysis procedures were utilized, as a way to examine the links between the influential factors outlined as part of the research model. The SEM strategies investigate potential models, via the use of hypothesis validation, in order to gain an understanding of the synchronous modelling of correlations between various independent and dependent variables (Hair et al., 2013). Plus, exploratory evaluations identify the prospective links and present them in a simple manner, which enables the use of multivariate techniques to verify them (Hair et al., 2013). For this research, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were employed, as a way to define the fundamental construction of data associated with the proposed factors.

EFA is not able to investigate more than one correlation or link at any one time (Hair et al., 2013). Therefore, CFA was also employed, in order to validate pre-defined relationships with hypothesis assessments. This research used SEM methods to create

the conversion from exploratory to confirmatory analysis (Hair et al., 2013), by making the benefits of the approach clear. The benefits of using SEM are as follows:

- The SEM analysis is well suited to the evaluation of data relating to inferential aims. It requires the trend for inter-variable correlations to be clearly defined a priori (Byrne, 2013).
- The SEM analysis offers unambiguous predictions for the measurement error variance guidelines. This means that it prevents prospective mistakes, which might be the result of significant measurement errors previously disregarded by exploratory factor analysis (Byrne, 2013).
- SEM can predict a significant amount of the dependence correlations at any one time (Hair et al., 2013).
- SEM methods are good for integrating unnoticed (latent) and identified (observed) factors (Byrne, 2013, Kline, 2011).

Therefore, this research incorporates both exploratory and confirmatory techniques, as part of summated scale measurements, and in accordance with correlation definition methods. To begin with, the descriptive data analysis was carried out using SPSS tools (Version 22.00). The descriptive analysis featured an investigation of participant demographics and data screening processes. This was achieved by verifying normality, standard deviations, outliers, and standard errors of the mean. These verification assessments were conducted as a way to observe the spread of data and its key tendency.

Measurement scale analysis was used to capture the meaning of the model constructs by an assessment of the scale reliability and validity. In order to test the scale reliability and validity, this study used factor analysis and Cronbach's alpha tests. After establishing the reliability and validity of the measurement scales, the conceptual model was assessed. In order to investigate the causal relationships, this study employed SEM for path analysis with latent variables (Kline, 2013). In this study we used Amos program (version 22) to perform SEM analysis. Next to the confirmation analysis of the measurement model, the latent variables were connected to show the relationships in the various hypotheses proposed the structural model. The significance of the path coefficients was assessed to test the hypotheses.

To measure the predictive power of the research model, the R2 values were used in the analysis to assess the percentage of the variance explained by the independent constructs in the structural model of this study (Hair et al., 2013).

4.3.6 Ethics for the Survey Analysis

This research involves human participants for the purpose of data collection. In order to ensure the anonymity and ethical protection of the participants, the Human Research Ethics Committee (HREC) – University of Technology Sydney guidelines were compiled to show the integrity of the research methodology. The protocol number approval is HREC2013000581

4.4 Qualitative Study

The main purpose of adopting the qualitative approach in this study was to confirm the findings generated from the quantitative atudy; for example, to validate the conceptual model that was assessed and refined from the statistical analysis. Qualitative research has been defined as involving, "the use of qualitative data, such as interviews, documents, and participant observation to understand and explain social phenomena" Myers (1997: p.241). To achieve this, the study used a qualitative focus group research method. Typically, the focus group's discussion is instigated and assisted by the investigator who provides points for debate, with the group's participants then interacting and producing data (Morgan, 1998). Therefore, a focus group approach was selected in this study because it can provide the researcher with the opportunity to investigate individual attitudes, beliefs, feelings, motivation, experiences and reactions of the topic under investigation (Walden, 2006). Litosseliti (2003) argued that the different qualitative approaches of observing participants or holding one-to-one interviews cannot produce the same information as focus groups. a primary advantage of focus groups over other qualitative methods is that a significant volume of information can be accrued quickly on the chosen area of research (Morgan, 1998).

4.4.1 Sample Size for the Focus Group

Crucially, the focus group sample size and characteristics should reflect those of the questionnaire sample for the quantitative component of the study, in order that the results from the latter can be properly validated. Therefore, the participants in the focus group were also Saudi citizens who had a similar level of past experience with Saudi Arabia e-government websites as the survey respondents. The screening questions

below were used during the recruitment process to determine whether the participants should be invited to participate in the focus group or not:

- Have you ever visited e-government websites?
- How do you classify your experience with the Internet? (Expert, experienced or novice user)
- Have you ever participated in e-participation activities on e-government websites?
- Are you interested in having a discussion about your experience with e-government websites?

A written outline of the aims and objectives of the research was provided to each individual partaking in the focus group, as well as information regarding the location and date of the discussion. A formal request was made to the individual and personal information obtained, once they had consented to involvement in the focus group.

Sharts-Hopko (2001) determined that with regard to the research topic, it was crucial that focus group contributors have a comparative degree of familiarity. The capture of related degree of perspectives and responses to the issue is much more likely as a consequence. For this research, a single focus group was initiated with eight participants in total, all with similar levels of e-government experiences. For example, participants were expert Internet users who were well informed about Internet technology. They were also experienced e-government users who were accustomed to e-government transactions. Furthermore, they had conducted e-participation activities on e-government websites such as post their ideas and filling online survey posted on e-government websites.

4.4.2 Focus Group Questions Formulation

For a focus group discussion to be productive, the form, amount and timing of questions should be reflected upon (Litoselliti, 2003). Litoselliti (2003) suggested that the researcher's amount of questions should be restricted, as well as the duration of the discussion to around ninety minutes, as this is typically the maximum amount of time individuals can effectively debate. The discussion should be pleasant and stimulating for debate, thus engaging and open questions should be posed to facilitate this, as well as questions that are clear and can be readily comprehended by each individual. Additionally, a comfortable and focus group context and setting should be chosen. In

this research, all of these factors were considered during the process of formulating the focus group questions.

4.4.3 Focus Group Procedure

All of the focus group participants were again informed of the location and date of the focus group discussion a day before the event. On the day itself, the participants were retold that a recording of the discussion would be made using an audio recorder, before the commencement of the talk. The focus group was conducted in Arabic, as all participants were Saudi citizens and native Arabic speakers. The researcher started the focus group by explaining the purpose of the research. Each question was then used to ask the participants about their opinions, beliefs and experiences about e-participation and the factors influencing citizens' intention to engage in e-participation activities on e-government websites. The participants' responses throughout the discussion were recorded and noted for further analysis. The discussion lasted for an hour and a half. As a means of thanking the participants, a light lunch was held following the focus group's conclusion. Through the assistance of professional translators, the focus group discussion transcript was given an English rendering. The data obtained from the focus group was analyzed by using content analysis technique.

4.4.4 Ethics for the Focus Group

Ethics approval from the University of Technology Sydney – Human Research Ethics Committee was obtained to conduct data collection for the focus group analysis. The protocol number approved is HREC 2013000581

4.5 Chapter Summary

This chapter outlines the research methodology used in this study to test the proposed conceptual model that addresses the research questions related to e-participation in a Saudi context. This chapter outlined the research methodology employed in this study, along with the research approach and relevant analytical techniques. The research approach employed a mixed-method design that incorporated both quantitative and qualitative research approaches. The research design began with a literature review and logical relationship among constructs, and then a quantitative approach (a questionnaire survey of citizens in Saudi Arabia) was applied to provide more concrete empirical evidence. Complementary to this approach, a qualitative study was also used to provide more insights into the relationships identified.

The analysis of the quantitative data set required a number of statistical techniques, including basic descriptive analyses and multivariate, such as EFA, CFA, and SEM using SPSS (Version 22.00) and Amos (Version 22.0) programs. The ultimate aim of this phase was to test the conceptual model and hypotheses in order to produce a final empirical model that best captures the interrelationships among the model constructs. Then, in the second phase, a qualitative approach (a focus group of Saudi citizens) was used to validate the survey findings. The following chapter discusses the data analysis of the quantitative component of the mixed-method research.

CHAPTER 5 QUANTITATIVEDATAANALYSIS

5.1 Introduction

The aim of this research is to investigate the factors that influence the decision to engage in e-participation services in a Saudi Arabian context. In order to do that, an extensive literature review of the relevant fields was conducted and a conceptual model developed. Quantitative data analysis was then conducted to test the proposed research model.

The chapter begins by presenting the questionnaire survey and the respondent profiles. Then, data screening techniques and results, in terms of the normality and outliers of the data set, as well as the standard deviation and standard error of the mean are presented. This is followed by the assessments of the measurement model's validity, such as scale reliability, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). After the acceptable measurement model, assessment of the structural model is performed to test hypotheses.

5.2 Questionnaire Survey and Respondents' Profiles

As described in Chapter 4, a survey instrument was developed in order to examine the factors that influence citizens' intention to engage in e-participation on e-government websites in Saudi Arabia. The survey contained 13 constructs and was evaluated on a five-point Likert scale. The following sections describe the survey and the participants' profiles.

5.2.1 Questionnaire Survey

A questionnaire survey was conducted in Saudi Arabia between December 2014 and February 2015. The survey was posted online to participants through the Qualtrics website, whose URL was embedded online via social networking sites, calling for participants to take part in the survey. A total of 1,233 surveys were completed and returned. After removing incomplete responses, 770 were used in the analysis. Saudi citizens are the target population for this research study. The criterion of selecting the sample was Saudi citizens who have an experience using e-government websites. This means that the target sample needs to have some level of computer and Internet literacy

in order to answer the survey questions.

5.2.2 Respondents' Profiles

An analysis of the respondents' profiles was done to reveal the ability of the study sample to sufficiently exhibit the study population. Table 5.1 provides a general overview of the demographic characteristics of the respondents.

Table 5.1:Respondents'Profiles

Category	Frequency	Percentage (%)	Cumulative percentage (%)
Gender			
Male	583	75.7	75.7
Female	187	24.3	100
Age			
Less than 20 years	54	7	7
20 – 29 years	359	46.6	53.6
30 – 39 years	284	36.9	90.5
40 – 49 years	59	7.7	98.2
50 years and older	14	1.8	100
Education Level			
High school	158	20.5	20.5
College degree	92	11.9	32.5
Bachelor degree	370	48.1	80.5
Postgraduate degree	150	19.5	100
Internet experience			
Less than 12 months	7	0.9	0.9
1 – 3 years	12	1.6	2.5
3 – 5 years	89	11.6	14
More than 5 years	662	86	100
E-government experience			
Less than six months	81	10.5	10.8
Less than 12 months	98	12.7	23.2
1 – 3 years	300	39	62.2
More than 3 years	291	37.8	100
Frequency of access to e-government websites			
A few times every six months	300	39	39
About once a month	129	16.8	55.7
A few times a month	233	30.3	86
A few times a week	78	10.1	96.1
A few times a day	20	2.6	98.7
Once a day	10	1.3	100
Purpose of using e-government websites			
Getting information	474	61.6	
Using a transaction service	560	72.7	
Proposing idea/suggestions	55	7.1	
Participating in discussion	17	2.2	
Contacting officials	122	15.8	
Other	21	2.7	
Ways of expressing opinions to government agencies			
Phone	150	19.5	
Face to face	163	21.2	
Government agency website	546	70.9	
Media	79	10.3	
Other	99	12.9	

Gender

Table 5.1 and Figure 5.1 shows that majority of the respondents are male (75.7%), with only 24.3% female. This distribution of the gender is fairly representative of the population of citizens using e-government websites in Saudi Arabia(Abu-Nadi, 2012).

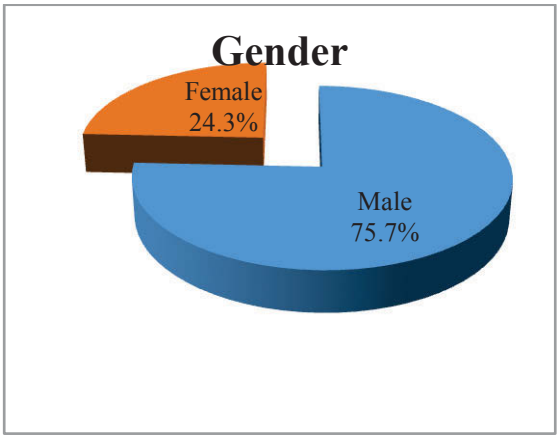

Figure 5.1: Gender of participants of survey study

Age

As shown in Figure 5.2 and Table 5.1 above, the group with the most respondents was 20-29 years old 46.6%, followed by 30–39 years old with 39.9%. Then 7.7% of the respondents were 40–49 years old, followed by 7% who were younger than 20 years old. The lowest number of respondents were in the age range of 50 years of age and older, with only 1.8%.

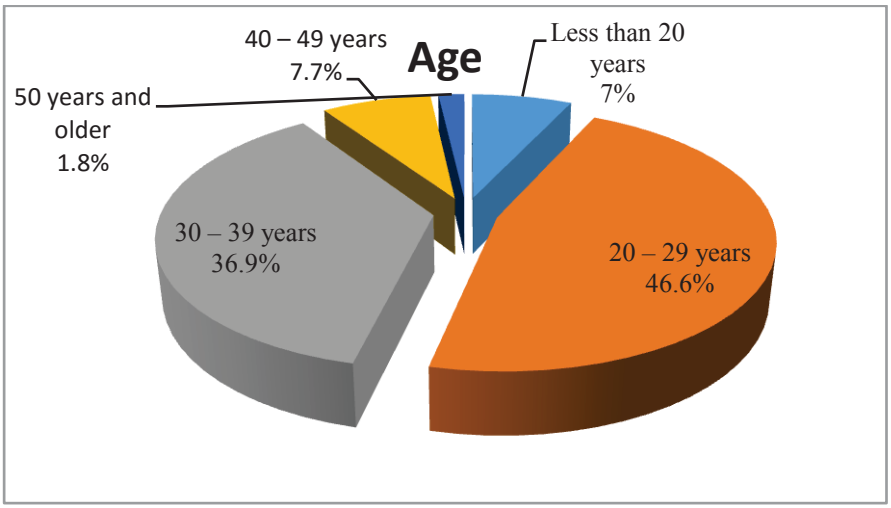

Figure 5.2: Age of participants of survey study

Education Level

As Table 5.1 and Figure 5.3 show, the group with the highest number of respondents had a bachelor's degree with 48.1%, followed by 20.5% of the respondents were from high school level. Then 19.5% of postgraduate degree level followed by 11.9% of college level. This show all the participants are literate and educated enough to understand and answer the questions.

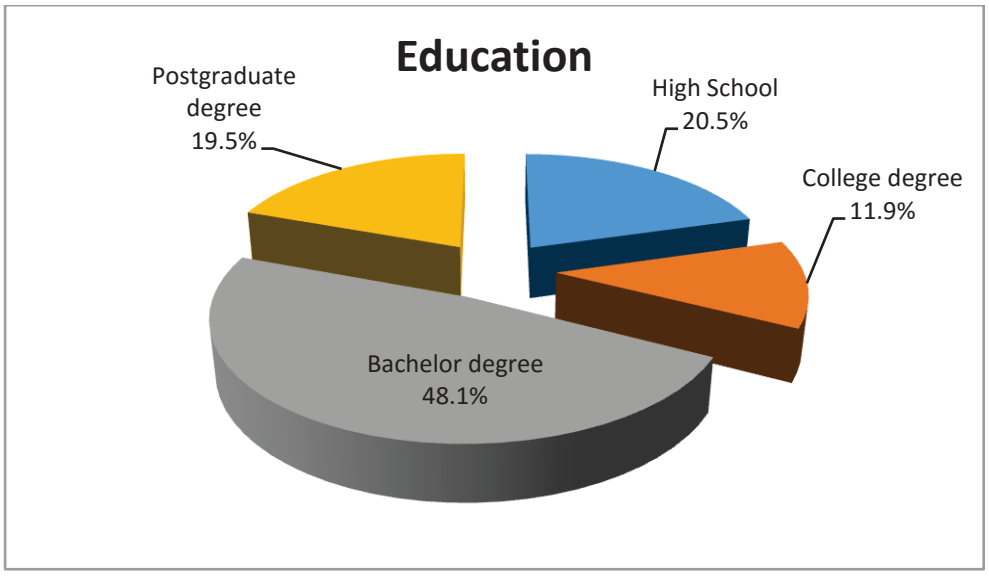

Figure 5.3: Education level of participants of survey study

Internet Experience

As shown in Figure 5.4 and Table 5.1, 86% of participants have more than five years of Internet experience, followed by three to five years 11.6%. The lowest Internet experience is 0.9% with less than 12 months, followed by one to three years, which is 1.6%. This high percentage shows clearly that the respondents have the required experience to use the Internet.

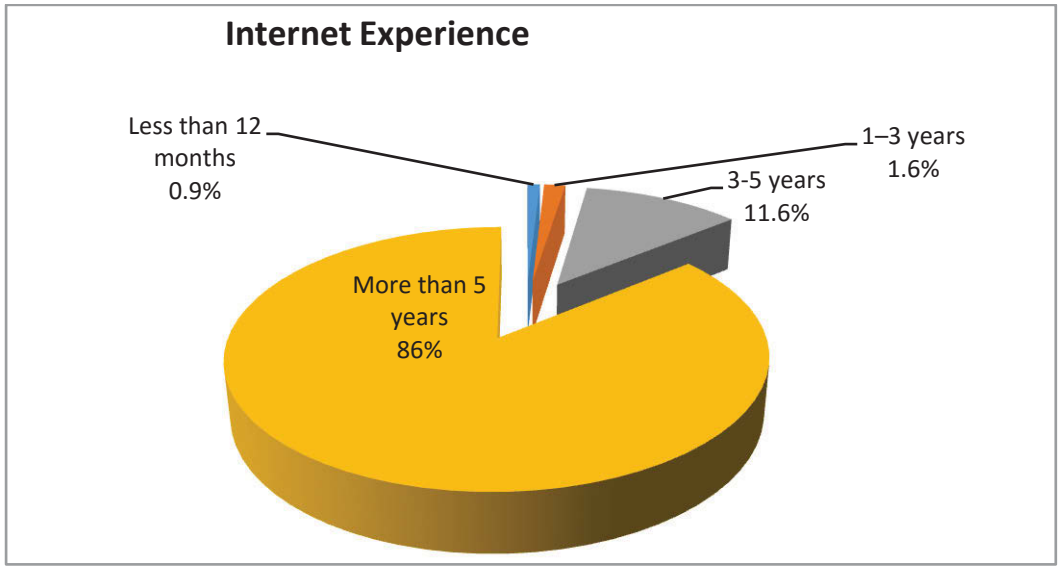

Figure 5.4: Internet experiences of participants of survey study

E-government Experience

Concerning the e-government use experience of respondents, as shown in Figure 5.5 and Table 5.1, 39% of participants have more than one to three years of experience, followed by 37.8% with more than three years. The lowest experience is 10.5% with less than six months, followed by less than 12 months (12.7%). These figures demonstrate that those respondents have the required e-government experience.

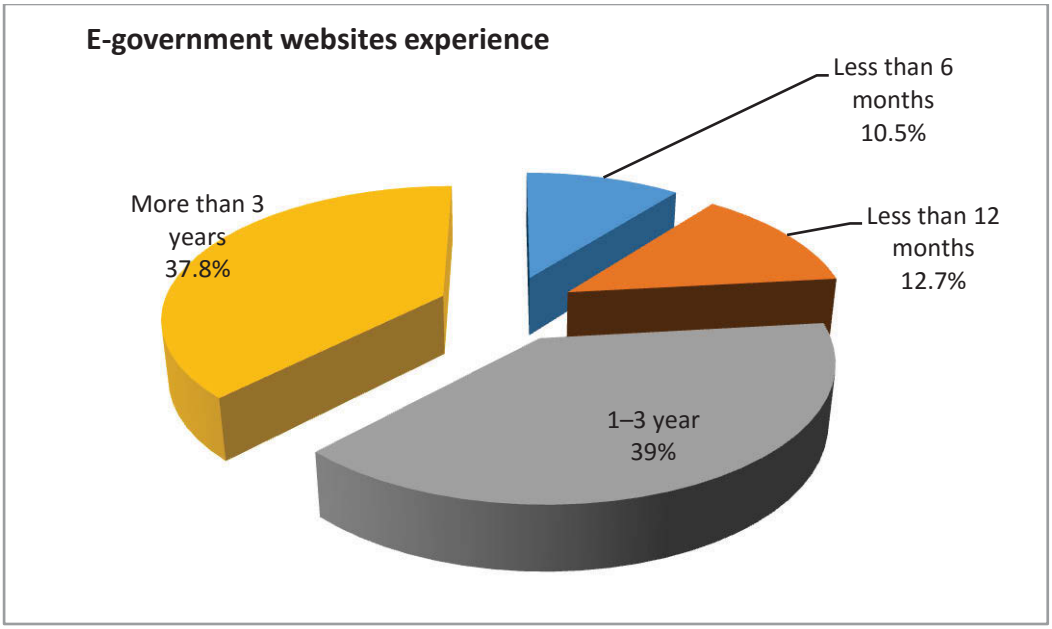

Figure 5.5: E-government experiences of participants of survey study

Access to E-government Websites

With respect to e-government use frequency, as shown in Figure 5.6 and Table 5.1, 30.3% of participants visit e-government websites a few times a month, 10.1% participants use them a few times a week and 3% a few times a day, followed by 1.3% of respondents who use them once a day. 16.8% use the e-government websites once a month followed by 39% a few times every six months. This shows all participants are well aware of the e-government websites.

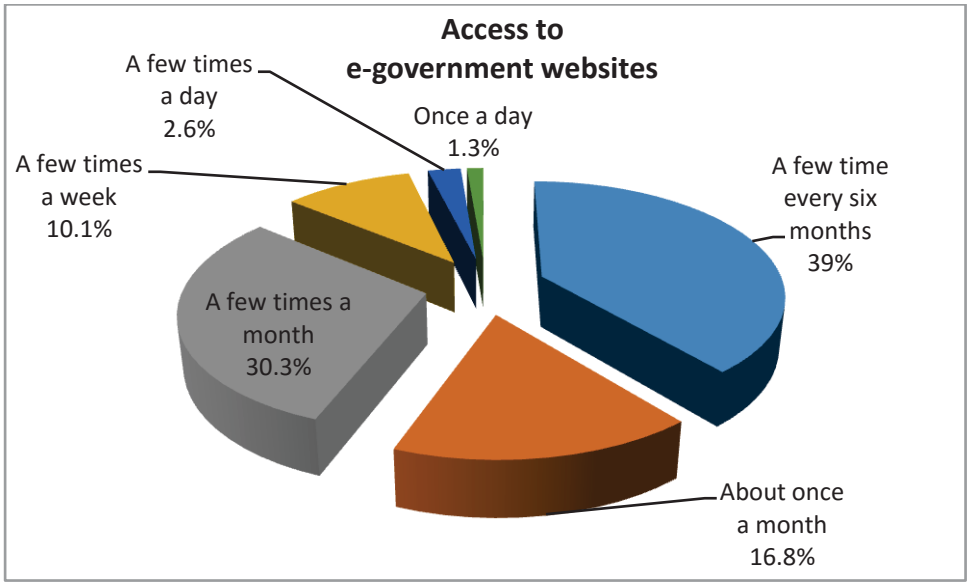

Figure 5.6: E-government websites access by participants of survey study

Purpose of Using E-government Websites

Concerning the purpose of the respondents' e-government website use, Table 5.1 and Figure 5.7 show that the highest percentage of participants 72.7% use it for transactional services, followed by 61.6% to get information. 15.8% of participants use it to contact government officials, while 7.1% use it to propose ideas or suggestions. 2.2% of participants use e-government websites to participate in online discussions, while 2.7% use it for other reasons. This data shows all participants actively use the e-government services for various purposes. In addition, this data shows low level of interest in using e-government websites by participants for e-participation activities such as (proposing ideas or suggestions and online discussions).

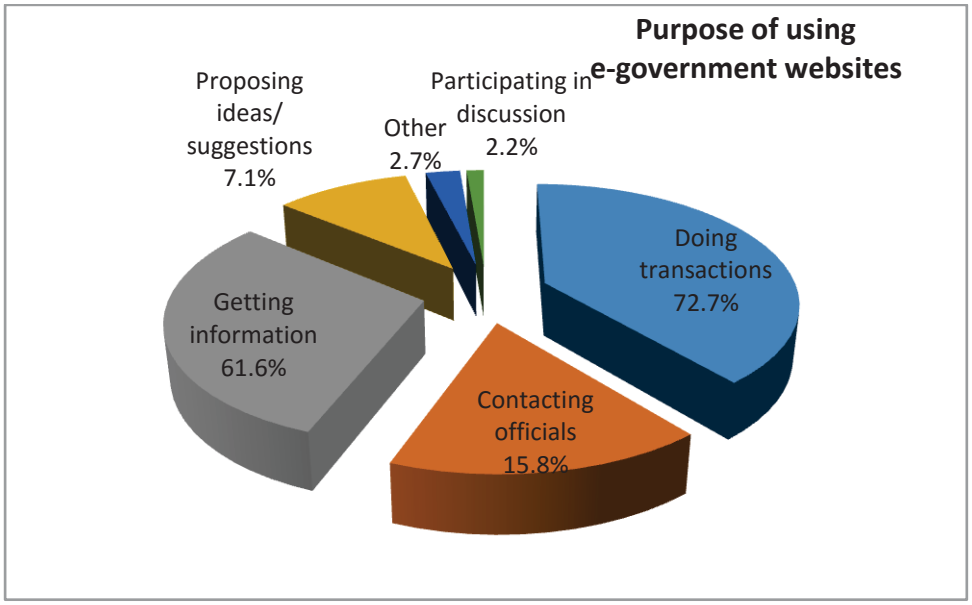

Figure 5.7: Purpose of using e-government websites by participants

5.3 Data Examination

The different statistical analyses used in this study such as normality and linearity were sensitive to outlier cases in the data. Therefore, the data screening techniques were employed in this study for all variables in order to assess their distributions (Kline 2011). The descriptive statistics include (missing data analysis, outlier screening, assessment of normality, standard deviations and standard errors of the mean) were used in this study. These statistics are discussed in the following subsections.

5.3.1 Missing Data Analysis

In order to successfully evaluate data, data sets must first be monitored for missing observations (Kline, 2011). However, as outlined in Section 5. 2.1, for this research, all of the missing data were eradicated before additional analyses were conducted. Tables 5.3 to 5.15 demonstrate that there are no missing responses relating to any construct of the survey.

5.3.2 Assessment of Normality

The evaluation of normality is an essential part of the overall examination of study data (Hair et al., 2013). There are two key aspects of normality; they are skewness and kurtosis (Hair et al., 2013; Tabachnick & Fidell, 2007). Whilst skewness is a measurement of symmetry (and 'evenness'), kurtosis signifies the peakedness of the

data spread (Hair et al., 2013). A fairly average data spread would show a kurtosis and skewness value somewhere between -2.00 and +2.00. For this research, the skewness and kurtosis values for all measurement items did lie within this average predicted value range (see Tables 5.3 to 5.15).

5.3.3 Outlier Screening

Within the realm of statistical analysis, an outlier is a piece of data (or a data set) which exhibits notably distinct characteristics; it is significantly different to the rest of the results(Hair et al., 2006). Thus, it is important to check the data for the presence of outliers. They have the power to bias the average values and increase the standard deviation (Field, 2013). As Kline (2011) states, data sets with values of more than three standard deviations, beyond the average, can be reliably perceived as outliers To identify these distinctions within this research, all of the values from all of the tested variables (relating to all 77 cases) were changed into standardized z-scores. If cases with an absolute value of z-scores ($|z|$) larger than 3.29 were found, they were treated as outliers (Tabachnick&Fidell, 2007). Once eradicated, none of the variables featured cases with absolute z-scores larger than 3.29 (refer to Tables 5.3 to 5.15). This is a clear sign that the data is free of outliers. Following this process, all 450 data sets were progressed to the analysis stage.

5.3.4 Standard Deviations and Standard Errors of the Mean

The standard deviation (SD) is employed as an indication of how accurately the average value represents the data at hand. However, the standard error of the mean (SE) indicates how accurately a specific sample reflects the wider population (Field, 2013). A large standard deviation (SD) score suggests dispersed results spread around the average value. In other words, the average value is not a suitable representation of the data as a whole. On the other hand, a smaller standard deviation score suggests fewer dispersed data sets around the mean and, therefore, a more accurate reflection of the entire data. A standard error of the mean (SE) signifies the variability of sample mean. Therefore, a larger SE indicates that the sample should not and cannot be used as a model for a wider population. Alternatively, a smaller SE signifies that the sample can be applied to a larger sample. Tables 5.3-5.15 demonstrate small results for SD and SE, across all of the tested variables. Thus, the sample can be deemed a reliable reflection of the wider Saudi Arabia population.

Table 5.2: Descriptive statistics for perceived usefulness construct

	Item: Description	Missing values	Cases with $z > 3.29$	Mean	Std error	Std deviation	Skewness	Kurtosis
USF1	electronic participation (e-participation) activities in e-government websites would enable me to interact with government agencies effectively	0.0%	0.0%	4.11	0.028	0.786	-0.630	0.165
USF2	e-participation in e-government websites would enhance my effectiveness in interacting with government agencies	0.0%	0.0%	4.11	0.028	0.765	-0.709	0.495
USF3	e-participation in e-government websites is a convenient way to interact with government agencies	0.0%	0.0%	4.34	0.027	0.758	-0.884	0.051
USF4	e-participation in e-government websites would enhance the effectiveness in searching for and utilizing government information	0.0%	0.0%	4.33	0.028	0.772	-1.015	0.838
USF5	e-participation in e-government websites would give me a greater chance to express my opinion to the government agencies	0.0%	0.0%	4.12	0.031	0.871	-0.751	0.153
USF6	e-participation in e-government websites would enable me to participate in decision-making	0.0%	0.0%	3.76	0.036	1.001	-0.405	-0.476
USF7	e-participation in e-government websites would be useful to participate in decisions	0.0%	0.0%	4.25	0.028	0.768	-0.832	0.352

Table 5.3: Descriptive statistics for the compatibility construct

	Item: Description	Missing values	Cases with z> 3.29	Mean	Std error	Std deviation	Skewness	Kurtosis
COM1	e-participation in e-government websites fits well with the way that I like to interact with government agencies	0.0%	0.0%	4.04	0.031	0.868	-0.585	-0.168
COM2	e-participation in e-government websites fits into my beliefs	0.0%	0.0%	3.84	0.032	0.877	-0.322	-0.416
COM3	e-participation in e-government websites is compatible with my religious aspects in decision-making	0.0%	0.0%	4.03	0.030	0.843	-0.448	-0.538
COM4	e-participation in e-government websites is compatible with my values in decision-making	0.0%	0.0%	3.91	0.031	0.860	-0.389	-0.325
COM5	e-participation in e-government websites is compatible with my needs to communicate with government agencies	0.0%	0.0%	4.00	0.032	0.885	-0.718	0.166

Table 5.4: Descriptive statistics for the attitude construct

	Item: Description	Missing values	Cases with z> 3.29	Mean	Std error	Std deviation	Skewness	Kurtosis
ATT1	using e-participation in e-government websites is a good idea	0.0%	0.0%	4.45	0.026	0.733	-1.490	1.989
ATT2	I like the idea of e-participation in e-government websites	0.0%	0.0%	4.34	0.028	0.774	-1.070	0.824
ATT3	I think that using e-participation in e-government websites is a pleasant experience	0.0%	0.0%	4.20	0.029	0.805	-0.838	0.560
ATT4	e-participation in e-government websites is an interesting idea	0.0%	0.0%	4.33	0.028	0.778	-1.204	1.655

Table 5.5: Descriptive statistics for the trust in government construct

	Item: Description	Missing values	Cases with $z>$ 3.29	Mean	Std error	Std deviation	Skewness	Kurtosis
TGO1	Government agencies have the skills and expertise to provide e-participation in an expected manner	0.0%	0.0%	3.61	0.034	0.937	-0.391	-0.323
TGO2	Government agencies have the ability to meet citizens' needs	0.0%	0.0%	3.62	0.035	0.982	-0.423	-0.344
TGO3	Government agencies can be trusted to participate in decisions faithfully	0.0%	0.0%	3.49	0.038	1.049	-0.230	-0.602
TGO4	Government agencies are truthful in consulting with me	0.0%	0.0%	3.36	0.036	1.012	-0.189	-0.338
TGO5	I trust that the government agencies take my opinions in consideration	0.0%	0.0%	3.24	0.039	1.081	-0.171	-0.523
TGO6	I trust that government agencies care about my opinions and suggestions	0.0%	0.0%	3.24	0.039	1.082	-0.126	-0.556
TGO7	In my opinion, government agencies are trustworthy	0.0%	0.0%	3.52	0.035	0.964	-0.249	-0.203
TGO8	I think that I can trust government agencies to provide interactive e-participation services	0.0%	0.0%	3.61	0.035	0.982	-0.365	-0.247

Table 5.6: Descriptive statistics for the trust in internet construct

	Item: Description	Missing values	Cases with $z>$ 3.29	Mean	Std error	Std deviation	Skewness	Kurtosis
TTT1	The Internet has enough safeguards to make me feel comfortable when using e-participation in e-government websites	0.0%	0.0%	3.75	0.035	0.967	-0.586	-0.120
TTT2	I feel assured that legal and technological structures adequately protect me from problems on the Internet	0.0%	0.0%	3.49	0.037	1.021	-0.339	-0.474
TTT3	I feel confident that encryption and other technological advances on the Internet make it safe for me to communicate with government agencies	0.0%	0.0%	3.67	0.036	0.986	-0.540	-0.181
TTT4	In general, the Internet is a robust and safe environment in which to interact with government and other citizens	0.0%	0.0%	3.72	0.036	0.998	-0.526	-0.252

Table 5.7: Descriptive statistics for the social trust construct

Item: Description		Missing values	Cases with $z>3.29$	Mean	Std error	Std deviation	Skewness	Kurtosis
ST1	Most citizens are reliable	0.0%	0.0%	3.45	0.033	0.930	-0.213	-0.324
ST2	Most citizens keep commitments	0.0%	0.0%	3.29	0.035	0.981	-0.106	-0.479
ST3	Most citizens are honest in their opinions	0.0%	0.0%	3.38	0.035	0.982	-0.246	-0.401

Table 5.8: Descriptive statistics for the trust in e-participation construct

Item: Description		Missing values	Cases with $z>3.29$	Mean	Std error	Std deviation	Skewness	Kurtosis
TRST1	I would trust e-participation in e-government websites to express my opinion	0.0%	0.0%	3.62	0.032	0.896	-0.462	0.119
TRST2	I trust e-participation in e-government websites	0.0%	0.0%	3.65	0.031	0.866	-0.392	0.096
TRST3	I believe that e-participation in e-government websites would be trustworthy	0.0%	0.0%	3.61	0.031	0.854	-0.311	0.082

Table 5.9: Descriptive statistics for the family influence construct

	Item: Description	Missing values	Cases with $z>$ 3.29	Mean	Std error	Std deviation	Skewness	Kurtosis
FAM1	My family thinks that I should use e-participation in e-government websites to express my opinion	0.0%	0.0%	3.50	0.034	0.942	-0.250	-0.330
FAM2	My family think that using e-participation is a good idea	0.0%	0.0%	3.77	0.031	0.864	-0.440	-0.033
FAM3	My family has an influence on my decision to try out e-participation	0.0%	0.0%	3.59	0.034	0.932	-0.230	-0.473

Table 5.10: Descriptive statistics for the friends/colleagues influence construct

	Item: Description	Missing values	Cases with $z>$ 3.29	Mean	Std error	Std deviation	Skewness	Kurtosis
FRD1	My friends/colleagues think that I should use e-participation in e-government websites to express my opinion	0.0%	0.0%	3.75	0.031	0.864	-0.466-	0.052
FRD2	My friends/colleagues think that using e-participation is a good idea	0.0%	0.0%	3.88	0.028	0.788	-0.406-	0.008
FRD3	My friends/colleagues have an influence on my decision to try out e-participation	0.0%	0.0%	3.73	0.031	0.849	-0.371-	-0.154

Table 5.11: Descriptive statistics for the media influence construct

	Item: Description	Missing values	Cases with $z>$ 3.29	Mean	Std error	Std deviation	Skewness	Kurtosis
MD1	I read/saw news reports that using e-participation in e-government websites was a good way of expressing opinion/voice to government agencies	0.0%	0.0%	3.50	0.038	1.052	-0.599	-0.212
MD2	The popular press depicts a positive sentiment concerning engaging in using e-participation in e-government websites	0.0%	0.0%	3.58	0.037	1.036	-0.581	-0.160

MD3	Mass media reports would influence me to try out e-participation	0.0%	0.0%	3.58	0.037	1.024	-0.554	-0.205

Table 5.12: Descriptive statistics for the subjective norms construct

	Item: Description	Missing values	Cases with $z > 3.29$	Mean	Std error	Std deviation	Skewness	Kurtosis
SN1	People who influence me think that I should use e-participation in e-government websites	0.0%	0.0%	3.70	0.031	0.849	-0.316	-0.151
SN2	People important to me think that I should use e-participation in e-government websites	0.0%	0.0%	3.72	0.030	0.833	-0.420	0.104
SN3	People whose opinions I value would prefer that I use e-participation in e-government websites	0.0%	0.0%	3.76	0.030	0.829	-0.459	0.122
SN4	People who influence my decisions think that I should use e-participation in e-government websites	0.0%	0.0%	3.74	0.030	0.841	-0.400	-0.020

Table 5.13: Descriptive statistics for the web design construct

	Item: Description	Missing values	Cases with $z > 3.29$	Mean	Std error	Std deviation	Skewness	Kurtosis
WD1	E-government websites have clear directions for navigating the website	0.0%	0.0%	3.83	0.033	0.916	-0.725	0.275
WD2	E-government websites provide good navigation facilities to the website's content	0.0%	0.0%	3.75	0.033	0.911	-0.704	0.244
WD3	I can easily navigate e-government websites	0.0%	0.0%	3.73	0.036	0.988	-0.620	-0.206
WD4	E-government websites have well-organised content	0.0%	0.0%	3.60	0.035	0.980	-0.505	-0.212
WD5	E-government websites have reliable and updated information	0.0%	0.0%	3.65	0.035	0.979	-0.506	-0.260

WD6	E-government websites provide simple and understandable information	0.0%	0.0%	3.56	0.035	0.958	-0.542	-0.191
WD7	The e-government website adequately meets my information needs	0.0%	0.0%	3.49	0.037	1.028	-0.379	-0.505
WD8	E-government websites have attractive presentation (colour and images)	0.0%	0.0%	3.43	0.038	1.052	-0.419	-0.430
WD9	E-government websites have meaningful animations	0.0%	0.0%	3.38	0.040	1.122	-0.353	-0.653

Table 5.14 :Descriptive statistics for the intention to engage construct

	Item: Description	**Missing Values**	**Cases with $z > 3.29$**	**Mean**	**Std error**	**Std deviation**	**Skewness**	**Kurtosis**
INT1	I intend to engage in e-participation activities on e-government websites	0.0%	0.%	4.06	0.026	0.723	-0.754	1.328
INT2	I would use e-participation provided on e-government websites to participate in decision-making	0.0%	0.%	4.04	0.028	0.767	-0.650	0.626
INT3	Using e-participation is something that I would do	0.0%	0.%	4.08	0.026	0.734	-0.902	1.765
INT4	I would not hesitate to use e-participation on e-government websites to interact with government agencies	0.0%	0.0%	3.99	0.032	0.891	-0.882	0.747

5.4 Measurement Scale Analysis

The objective of the analysis of measurement scales is to determine scale reliability. Factor analyses such as exploratory factor analysis and confirmatory factor analysis are used to uncover and confirm the appropriate factor structures of the model's constructs. In the following sections, each assessment procedure and its associated results are presented.

5.4.1 Scale Reliability

An analysis of scale reliability of all constructs used in the current study (perceived usefulness, compatibility, attitude, trust in government, trust in the Internet, social trust, subjective norms, family influence, friends'/colleague's influence, media influence, web design and intention to use) was performed through internal consistency and item-total correlations. The following sections present each assessment procedure (internal consistency and item-total correlations) and its related results.

5.4.1.1 Internal Consistency

The degree to which survey responses are consistent across the items (constructs) within a single measurement scale is called internal consistency (Kline, 2011). To assess the quality of the measurement scale, internal consistency is measured by Cronbach's alpha, which denotes the estimated correlation of a set of indicators (items)(Churchill Jr, 1979). A low Cronbach's alpha shows that the constructs are unrelated, which may represent the construct poorly (Kline, 2011). According to Hair et al. (2013), the acceptable limit of Cronbach's alpha values is 0.60 to 0.70 which are considered as the acceptable limit. Kline (2011) states that a Cronbach's alpha coefficient greater or equal to 0.90 is excellent, greater or equal to 0.80 is very good, and greater or equal to 0.70 is adequate.

Table 5.16 shows the Cronbach's alpha coefficient of the construct's measurement scales used in the current study. All scales had alpha values ranging from 0.765 to 0.951. Therefore, the measurement scales are well above the acceptable limit suggested by Kline (2011).

Table 5.15:Cronbach's alphas of the measurement scales

Construct	No of items	Cronbach'salpha	Result
Perceived usefulness	7	0.878	Very good
Compatibility	5	0.864	Very good
Attitude	4	0.836	Very good
Trust in government	8	0.951	Excellent
Trust in Internet	4	0.872	Very good
Social trust	3	0.885	Very good
Trust in e-participation	3	0.822	Very good
Family influence	3	0.894	Very good
Friends/colleagues Influence	3	0.899	Excellent
Media influence	3	0.831	Very good
Subjective norms	4	0.885	Very good
Web design	9	0.922	Excellent
Intention to use	4	0.784	Acceptable

5.4.1.2 Item-total Correlations

The item-total correlation is the composite score of all the variables showing the correlation of the construct (Lu et al., 2007). Churchill (1979) states that the item-total correlation analysis determines the construct by representing the correct items and eliminating unnecessary items. Pallant (2010) suggests that a corrected item-total correlation value of less than 0.30 indicates that the item is measuring something different from other items. Therefore, item-total correlation value of less than 0.30 is not recommended. Tables5.16 to5.28 show that the construct item-total correlations for each factor are greater than 0.30.

Table 5.16: Item-total correlations of the perceived usefulness

Item: Description	Corrected item-total correlation	Cronbach' salpha if item deleted
USF1.electronic participation (e-participation) activities in e-government websites would enable me to interact with government agencies effectively	0.672	0.860
USF2.e-participation activities in e-government websites would enhance my effectiveness in interacting with government agencies	0.744	0.852
USF3. e-participation in e-government websites is a convenient way to interact with government agencies	0.691	0.858
USF4. e-participation in e-government websites would enhance the effectiveness in searching for and utilizing government information	0.621	0.866
USF5.e-participation in e-government websites would give me a greater chance to express my opinion to the government agencies	0.655	0.862
USF6.e-participation in e-government websites would enable me to participate in decision-making	0.588	0.874
USF7.e-participation in e-government websites would be useful to participate in decisions	0.701	0.856
Cronbach'salpha (0.878)		

Table 5.17: Item-total correlations of the compatibility

Item: Description	Corrected item-total correlation	Cronbach's alpha if item deleted
COM1.e-participation in e-government websites fits well with the way that I like to interact with government agencies	0.675	0.838
COM2.e-participation in e-government websites fits into my beliefs	0.671	0.839
COM3. e-participation in e-government websites is compatible with my religious aspects in decision-making	0.670	0.839

COM4.e-participation in e-government websites is compatible with my values in decision-making	0.729	0.824
COM5.e-participation in e-government websites is compatible with my needs to communicate with government agencies	0.674	0.838
Cronbach'salpha (0.864)		

Table 5.18: Item-total correlations of attitude

Item: Description	Corrected item-total correlation	Cronbach's alpha if item deleted
ATT1.using e-participation in e-government websites is a good idea	0.665	0.793
ATT2.I like the idea of e-participation in e-government websites	0.709	0.772
ATT3.using e-participation in e-government websites is a pleasant experience	0.653	0.798
ATT4.e-participation in e-government websites is an interesting idea	0.638	0.804
Cronbach'salpha (0.836)		

Table 5.19: Item-total correlations of trust in government

Item: Description	Corrected item-total correlation	Cronbach's alpha if item deleted
TGO1.Government agencies have the skills and expertise to provide e-participation in an expected manner	0.777	0.947
TGO2. Government agencies have the ability to meet citizens' needs	0.785	0.947
TGO3.Government agencies can be trusted to participate in decisions faithfully	0.822	0.945
TGO4.Government agencies are truthful in consulting with me	0.834	0.944
TGO5.I trust that the government agencies take my opinions in consideration	0.847	0.943
TGO6.I trust that government agencies care about my opinions and suggestions	0.842	0.943

TGO7.In my opinion, government agencies are trustworthy	0.819	0.945
TGO8.I think that I can trust government agencies to provide interactive e-participation	0.832	0.944
Cronbach'salpha (0.951)		

Table 5.20: Item-total correlations of trust in the Internet

Item: Description	Corrected item-total correlation	Cronbach'salpha if Item deleted
TIT1.The Internet has enough safeguards to make me feel comfortable when using e-participation in e-government websites	0.693	0.849
TIT2.I feel assured that legal and technological structures adequately protect me from problems on the Internet	0.745	0.829
TIT3.I feel confident that encryption and other technological advances on the Internet make it safe for me to communicate with government agencies	0.793	0.809
TIT4.In general, the Internet is a robust and safe environment in which to interact with government and other citizens	0.676	0.856
Cronbach'salpha (0.872)		

Table 5.21: Item-total correlations of social trust

Item: Description	Corrected item-total correlation	Cronbach's alpha if item deleted
ST1. Most citizens are reliable	0.740	0.868
ST2. Most citizens keep commitments	0.785	0.828
ST3. Most citizens are honest in their opinions	0.805	0.810
Cronbach's alpha (0.885)		

Table 5.22: Item-total correlations of trust

Item: Description	Corrected item-total correlation	Cronbach'salpha if item deleted
TRST1.I would trust e-participation in e-government websites to express my opinion	0.685	0.747
TRST2.I trust e-participation in e-government websites	0.722	0.710
TRST3.I believe that e-participation in e-government websites would be trustworthy	0.626	0.850
Cronbach'salpha (0.822)		

Table 5.23: Item-total correlations of family influence

Item: Description	Corrected item-total correlation	Cronbach'salpha if item deleted
FAMI1.My family thinks that I should use e-participation in e-government websites to express my opinion	0.779	0.861
FAMI2.My family thinks that using e-participation is a good idea	0.801	0.842
FAMI3.My family has an influence on my decision to try out e-participation	0.797	0.845
Cronbach'salpha (0.894)		

Table 5.24: Item-total correlations of friends/colleagues'influence

Item: Description	Corrected item-total correlation	Cronbach'salpha if item deleted
FRDI1. My friends/colleagues think that I should use e-participation in e-government websites to express my opinion	0.792	0.865
FRDI2. My friends/colleagues think that using e-participation is a good idea	0.808	0.852

FRDI3. My friends/colleagues have an influence on my decision to try out e-participation	0.805	0.852
Cronbach'salpha (0.899)		

Table 5.25: Item-total correlations of media influence

Item: Description	Corrected item-total correlation	Cronbach'salpha if item deleted
MDI1.I read/saw news reports that using e-participation in e-government websites was a good way of expressing opinion/voice to government agencies	0.582	0.872
MDI2. The popular press depicts a positive sentiment concerning engaging in using e-participation in e-government websites	0.747	0.709
MDI3.Mass media reports would influence me to try out e-participation	0.751	0.707
Cronbach'salpha (0.831)		

Table 5.26: Item-total correlations of subjective norms

Item: Description	Corrected item-total correlation	Cronbach'salpha if item deleted
SN1.People who influence me think that I should use e-participation in e-government websites	0.739	0.856
SN2.People important to me think that I should use e-participation in e-government websites	0.754	0.850
SN3.People whose opinions I value would prefer that I use e-participation in e-government websites	0.765	0.846
SN4.People who influence my decisions think that I should use e-participation in e-government websites	0.737	0.857
Cronbach'salpha (0.885)		

Table 5.27: Item-total correlations of web design

Item: Description	Corrected item-total correlation	Cronbach'salpha if item deleted
WD1.E-government websites have clear directions for navigating the website	0.720	0.913
WD2.E-government websites provide good navigation facilities to the website's content	0.727	0.912
WD3.I can easily navigate e-government websites	0.729	0.912
WD4. E-government websites have well- organized content	0.745	0.911
WD5.E-government websites have reliable and updated information	0.721	0.913
WD6. E-government websites provide simple and understandable information	0.740	0.912
WD7. The e-government website adequately meets my information needs	0.735	0.912
WD8.E-government websites have attractive presentation (colour and images)	0.707	0.914
WD9.E-government websites have meaningful animations	0.670	0.917
Cronbach'salpha (0.922)		

Table 5.28: Item-total correlations of intention to engage

Item: Description	Corrected item-total correlation	Cronbach's alpha if item deleted
INT1. I intend to engage in e-participation activities on e-government websites	0.617	0.719
INT2. I would use e-participation provided on e-government websites to participate in decision-making	0.562	0.746
INT3. Using e-participation is something that I would do	0.638	0.709
INT4. I would not hesitate to use e-participation on e-government websites to interact with government agencies	0.557	0.753
Cronbach's Alpha (0.784)		

5.4.2 Exploratory Factor Analysis

Once the scale reliability has been measured, exploratory factor analysis (EFA) becomes a valuable method for assessing evaluating the underlying constructs (Gerbing and Anderson, 1988). While the factors used in this study were mostly derived from previous research and are thus already validated, EFA is considered necessary since these factors had not been operationalised extensively within the e-participation context. Given that an independent scale measured each of the model constructs, the EFA was conducted separately for each individual factor. EFA can be measured using either R-type factor analysis or Q-type factor analysis (Gerbing and Anderson, 1988; Hair et al., 2013). R-type factor analysis classifies a set of measurements that are latent in a large set of variables, whilst the Q-type factor analysis identifies a summary of large numbers of people within a larger population into particularly different groups (Hair et al., 2013). This study adopts the R-type factor analysis, which is the most common type of factor analysis. The following sections provide details of the exploratory factor analysis.

5.4.2.1 Data Factorability

The degree of crossover correlation among the concepts is a significant focus of determining data validity and factorability. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett's test of sphericity was related to the fundamental concepts, in order to assess the correlation matrix factorability. Pallan (2010) identified that 0.60 is the smallest satisfactory degree.

As shown in Table 5.29, the values of the KMO for each factor ranged from 0.77 to 0.93 The Bartlett's test of sphericity statistic for each factor was significant at $p < 0.001$ level, which shows satisfactory relationships between the factors included in the analysis (Field, 2013). These results confirmed the factorability of the EFA conducted for each construct (Hair et al., 2013; Pallant, 2010).

Table 5.29: KMO and Bartlett's test of sphericity

Construct	KMO*	Bartlett's test of sphericity		
		Approx chi-square	*df*	Sig
Attitudinal factors	0.933	6492.768	120	0.000
Trust factors	0.919	10473.752	153	0.000
Social influence factors	0.887	6392.957	78	0.000
Web design	0.930	4997.797	36	0.000
Intention to use	0.774	778.964	6	0.000
All constructs	0.934	32188.961	1770	0.000

* Kaiser-Meyer-Olkin Measure of Sampling Adequacy

5.4.2.2 Factor Extraction and Rotation

Pallant (2010) explained that factor extraction and factor rotation and interpretation were two crucial processes in carrying out EFA, following the quantification of data factorability. The purpose of the two steps is to produce a suitable solution that justifies an adequate number of items representing a construct. In particular, the aim of factor extraction is to determine the acceptability of the number of factors, whereas the aim of factor rotation is to improve the interpretation of a given factor solution (Field, 2013). Principal Component Analysis (PCA) is adopted in this research as a means of undertaking factor extraction. A number of criteria were determined by Hair et al. (2013) as important to achieving PCA.

- Latent root (eigenvalue) criterion: which stipulates that factors should be excluded if they have an eigenvalue lower than one, while factors are meaningful if their eigenvalue is above one.
- Catell's scree test: Catell's scree takes an amount of extracted factors and produces a graph in relation to the eigenvalues. When the plotted graph curvature makes an abrupt alteration, the mining of the largest amount of factors should take place.
- Percentage of variance criterion: the percentage of variance criterion guarantees the explication of a particular variance quantity. The resulting constructs are thus guaranteed in their actual meaningfulness. In information systems investigations, an answer that is equivalent to 60% or lower of entire variance should be aimed

for.

- A priori criterion: which guarantees that before factor analysis is begun, the amount of constructs is recognised. If one investigator is mining an equal amount of constructs from a pre-existing study, a priori criterion is particularly instructive. This criterion is useful when the researcher is to repeat another researcher's findings by extracting the same number of constructs. It is recommended that the researcher should combine their theoretical foundation with some empirical evidence. Therefore, the researcher can determine the suitable number of constructs to extract or to retain rather than only relying on the outcomes produced from specific criterion.

Once the above methods are performed for the factors' extraction, it is possible to examine the factor loadings (Field, 2013). However, the initial factor solution does not provide an adequate interpretation regardless of the extraction method employed. This is because the most important constructs will have high loadings and the other constructs will have low loadings (Field, 2013; Hair et al., 2006). Therefore, factor rotation is used to succeed in meaningful solutions. According to Tabachnick and Fidell(2007), varimax orthogonal rotation is the preferred technique and it is therefore used in the current study. After this rotational technique is employed, specific criterion should be used to justify the significance of factor loadings to ensure a meaningful correlation between the constructs (Field, 2013; Hair et al., 2013; Tabachnick and Fidell, 2007). The recommended cut-off factor loading of 0.40 is used in the current study in order to guarantee that the items in each construct are of practical significance.

5.4.2.3 EFA Results for the Constructs

After the factorability of data, the factor extraction and rotation were completed, EFA was performed for each factor used in the current study. Using a principal axis extraction method with varimax rotations for all of the items measuring attitude (usefulness, compatibility and attitude), trust (trust in e-government, trust in the Internet, social trust and trust in e-participation), social influence (subjective norms, friends'/colleagues' influence, family influence and media influence), web design and intention to use. This study consists of 770 cases, which is well above the recommended sample size of 100 for

EFA (Tabachnick and Fidell, 2007). To explain variance in the data set, Kaiser's criteria and Catell's scree test are used to determine the number of factors to be retained (Pallant, 2010). The Kaiser's criteria extracts all factors using an eigenvalue of 0.1 or more, while Catell's scree determines which factor should be retained using plotting each eigenvalue (Pallant, 2010).

As shown in Table 5.30, the total variance cumulative percentage of the factors ranged from 59.4% to 76.6%. This is consistent with the research in information systems (Hair et al., 2013). The details of EFA for each factor are discussed in the following sections.

Table 5.30: Total variance explained and reliability of the factors

Construct and factors	Total variance explained (%)	Cronbach'salpha
Attitudinal factors (three factors)	63.398	0.914
Trust factors (four factors)	76.644	0.911
Social influence (four factors)	71.157	0.904
Web design	65.748	0.922
Intention to use	59.487	0.784

5.4.2.3.1 Attitudinal Factors

Attitudinal factors consist of three variables: usefulness, compatibility and attitude. Usefulness is measured by seven items, compatibility is measured by five items and attitude is measured by four items. The purpose of the EFA was to determine whether all three dimensions could represent the attitudinal factor. As shown in Table 5.30, attitudinal factor explains 63.4% of total variance. Additionally, Figure 5.8 shows an eigenvalue of greater than 1 in the scree plot and Table 5.31 shows all 16 items have a significant loading greater than 0.50 and range from 0.58 to 0.80. As a result, all factors were retained.

Table 5.31: EFA of the attitudinal factors

Rotated component matrix[a]

Variable	Component 1	2	3
	Usefulness	Compatibility	Attitude
USF2	0.757		
USF1	0.712		
USF5	0.704		
USF3	0.667		
USF6	0.664		
USF4	0.627		
USF7	0.589		
COM4		0.809	
COM2		0.776	
COM3		0.736	
COM5		0.689	
COM1		0.673	
ATT1			0.782
ATT2			0.778
ATT4			0.713
ATT3			0.707

Extraction method: principal component analysis.
Rotation method: varimax with Kaiser normalisation.
a. Rotation converged in six iterations.

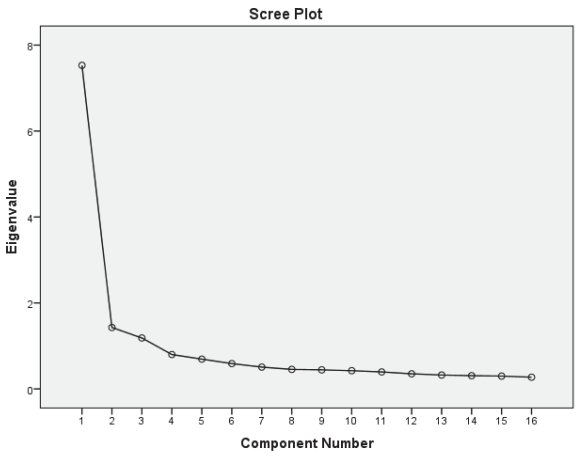

Figure 5.8: Scree plot attitudinal factors

5.4.2.3.2 Trust factors

Trust factors were operationalised with four factors: trust in government, trust in the Internet, social trust and trust in e-participation. Trust in government was measured by eight items, trust in the Internet was measured by four items, three items measured social trust, and three items measured trust in e-participation. As shown in Table 5.30, trust factors explain 76.6% of total variance. Additionally, Figure 5.9 shows an eigenvalue of greater than 1 in the scree plot. As shown in Table 5.32, all items have a significant loading greater than 0.50 and range from 0.76 to 0.90. Thus, all factors were retained.

Table 5.32: EFA of the trust factors

Rotated component matrix[a]

Variable	Component			
	1	2	3	4
	Trust in government	Trust in the Internet	Social trust	Trust in e-participation
TGO5	0.874			
TGO6	0.862			
TGO4	0.843			
TGO8	0.828			
TGO3	0.828			
TGO7	0.825			
TGO2	0.818			
TGO1	0.813			
TIT3		0.860		
TIT2		0.836		
TIT1		0.805		
TIT4		0.767		
ST7			0.904	
ST6			0.883	
ST5			0.862	
TRST2				0.832
TRST1				0.818
TRST3				0.773

Extraction method: principal component analysis.
Rotation method: varimax with Kaiser normalisation.
a. Rotation converged in five iterations.

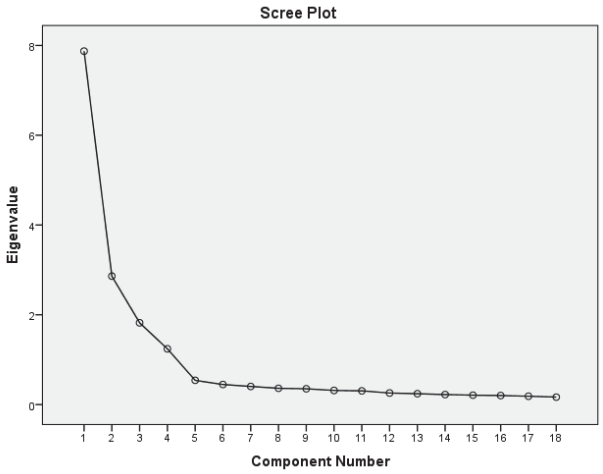

Figure 5.9: Scree plot trust factors

5.4.2.3.3 Social Influence

The social influence factors were operationalised with four constructs: subjective norms, family influence, friends'/colleagues' influence and media influence. Subjective norms were measured by four items, while family influence, friend's/colleagues' influence and media influence were each measured by three items. As shown in Table 5.30, social factors explain 71.157% of total variance. The EFA results revealed three components for social factors. An inspection of the scree plot (see Figure 5.10) reveals a very clear break after the three points. Additionally, Table 5.33 shows that all items have a significant loading greater than 0.50 and range from 0.690 to 0.882. Thus, four constructs were retained.

Table 5.33: EFA of social influence factors

Rotated component matrix[a]

Variable	Component			
	1	2	3	4
	Subjective norms	Family influence	Colleagues' /friends' influence	Media influence
SN2	0.838			
SN1	0.825			
SN3	0.820			
SN4	0.779			
FAM2		0.862		
FAM1		0.850		
FAM3		0.839		
FRD1			0.822	
FRD3			0.820	
FRD2			0.810	
MDI2				0.882
MDI3				0.877
MDI1				0.690

Extraction method: principal component analysis.
Rotation method: varimax with Kaiser normalisation.
a. Rotation converged in five iterations.

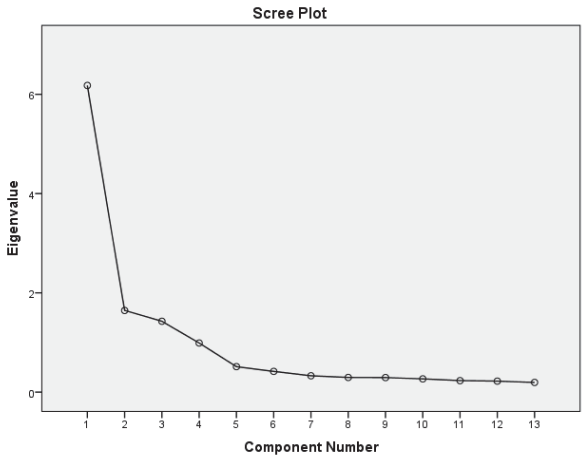

Figure 5.10: Scree plot of social influence factors

5.4.2.3.4 Web Design

The web design factor was operationalised with nine items. As shown in Table 5.30, the web design factor explains 65.7% of total variance. Additionally, Figure 5.11 shows an eigenvalue of greater than 1 in the scree plot. In Table 5.34 all items have significant loadings of greater than 0.50 and range from 0.76 to 0.83. Thus, all factors were retained for the analysis.

Table 5.34: EFA of the web design factor

Component matrix[a]

Variable	Component 1
	Web design
WD6	0.838
WD4	0.834
WD3	0.827
WD7	0.819
WD5	0.812
WD2	0.812
WD1	0.802
WD8	0.782
WD9	0.769

Extraction method: principal component analysis.
As only one component was extracted, the solution cannot be rotated.

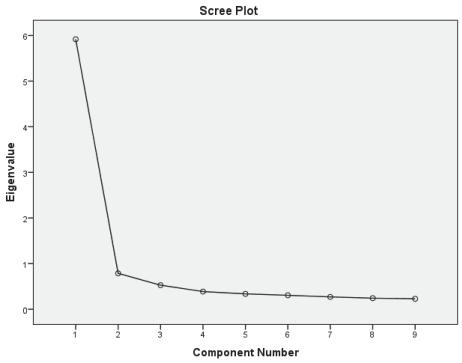

Figure 5.11: Scree plot for the web design factor

5.4.2.3.5 Intention to engage in e-participation

The intention to use factor was operationalised using four items. As shown in Table 5.30, the intention to engage factor explains 59.5% of total variance. Additionally, Figure 5.12 shows an eigenvalue of greater than 1 in the scree plot. In Table 5.35 all items have significant loadings of greater than 0.50, ranging from 0.71 to 0.81. Thus, all factors were retained for the analysis.

Table 5.35: EFA of the intention to engage factor

Component matrix[a]

Variable	Component 1
	Intention to use
INT3	0.813
INT1	0.799
INT2	0.757
INT4	0.712

Extraction method: principal component analysis.
As only one component was extracted, the solution cannot be rotated.

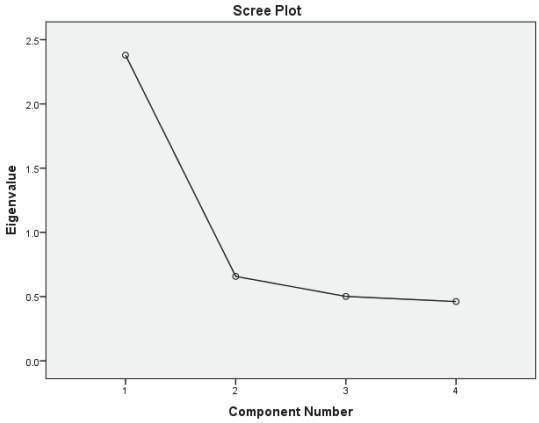

Figure 5.12: Scree plot of the intention to use factor

5.4.2.4 Test of Common Method Variance

Harman's one-factor test was adopted as a means of EFA in order for the common method variance to be determined. Podsakoff et al. (2003) outlined the procedure, whereby if the benchmark variable or dependent variable covariance can be explained largely by a single overall aspect, or the factor analysis assessment produces a sole factor, then a large degree of common method variance can be deemed as present. To do the test, EFA was performed on all 60 variables based on criteria similar to the above analysis. The results, presented in Table 5.36, show that there were 13 thirteen components (factors) extracted, with the first factor accounting for only 22.604 %. This finding suggests that common method variance was not an issue in this study.

Table 5.36: Results for the common method variance test

Component	Initial eigenvalues		
	Total	% of variance	Cumulative %
1	13.562	22.604	22.604
2	6.803	11.338	33.942
3	4.140	6.900	40.841
4	3.649	6.082	46.924
5	2.612	4.353	51.276
6	2.329	3.881	55.158
7	1.847	3.079	58.236
8	1.439	2.399	60.635
9	1.400	2.333	62.968
10	1.311	2.186	65.154
11	1.217	2.028	67.181
12	1.033	1.722	68.904
13	1.001	1.665	70.569

5.4.3 Confirmatory Factor Analysis

Although measurement gauge dependability can be assessed by EFA as outlined in the parts above, Heir et al. (2013) emphasised that unidimensionality and factor validity cannot be completely determined through EFA. Consequently in order to determine all of the measurement gauges' reliability, Confirmatory Factor Analysis (CFA) was adopted.

The objective of CFA is to test whether the data fits a hypothesized measurement model or not, thus CFA is considerably used as a first step to test the measurement model in a structural equation model (Byrne 2011). CFA was estimated as a preliminary step to confirm the factor structure and to provide an initial test of the reliability and validity of the factors. The structural equation modeling (SEM) software SPSS Amos 22 was used to undertake the CFA. The following sections provide details of the analysis.

5.4.3.1 Assessment of the Model Fit and Estimation Techniques

CFA is employed to assess the validity of research model constructs by establishing an acceptable level of the measurement model goodness-of-fit to find the specific evidence of construct validity (Heir et al. 2013). The three types of model indices are absolute fit indices, incremental fit indices and parsimony fit indices (Byrne 2011, Heir et al. 2013).

- **Absolute fit indices:** This index is used to measure the extent the hypothesized model reproduces the sample data(Shah and Goldstein, 2006). The most common absolute fit is known as chi-square (X^2) and includes the degree of freedom (df) and the significance level (p-value). Due to the sample size issues in chi-square measurements, various alternative fit indices have been developed to quantify the degree of fit (Shah and Goldstein, 2006) such as the relative chi-square (X^2/df), goodness-of-fit indices (GFI), adjusted goodness-of-fit indices (AGFI) and the root mean square residual (RMR). The possible range of GFI and AGFI values is 0 to 1.00, with the higher value the better (Heir et al. 2013). RMR represents the average value across all standardized residuals and ranges from 0 to 1.00. An RMR small value of less than 0.05 is acceptable (Byrne 2011). The literature shows that the chi-square index carries a high vulnerability to a big sample size and the varying intricacy of the framework (Heir et al. 2006). Plus, as Fan and Sivo' state (2007), indices like AGFI and GFI do usually exhibit a greater vulnerability so sample size.
- **Incremental fit indices:** The incremental fit indices are not the same as absolute fit indices, because they assess how successfully the predicted model matches, relative to a substitute baseline model (Hair et al., 2013). Some common incremental fit indices are normed fit indices (NFI), the Tucker-Lewis index

(TLI), comparative-fit index (CFI) and incremental fit indices (IFI). NFI and TLI have acceptable values ranges of 0 to 1. A value exceeding 0.90 is considered very good (Heir et al. 2013). The CFI is an improved version of the NFI because it takes into account the sample size. CFI values above 0.90 are usually associated with a good model fit (Byrne 2011; Heir et al. 2010).

- **Parsimony fit indices:** The parsimony fit indices provide information about which model among the set of competing models is better related to the complexity (Heir et al. 2013). The two methods of parsimony in the assessment of the model fit used in this study are the adjusted goodness of fit index (AGFI) and parsimony normed fit index (PNFI).
- **Estimation technique:** The maximum likelihood (ML) is considered appropriate when the sample size is greater than 200 (Kline, 2011). Therefore in this study ML estimation technique is employed and the following measurement criteria are used.
  - $(X^2/df) < 3.0$ (Hair et al. 2013; Kline, 2011)
  - GFI, AGFI, NFI, CFI, TLI, IFI > 0.90(Garson, 2012, Hair et al., 2013)
  - RMSEA< 0.08 (Kline, 2011, Garson, 2012, Hair et al., 2013)

5.4.3.2 Assessment of Construct Validity and Unidimensionality

Construct validity is used to measure items to reflect the theoretical latent construct (Heir et al. 2013). It can be measured by convergent validity, discriminant validity and nomological validity. Convergent validity is measured by factor loading and it should have a value of greater than 0.50 in addition to significant loadings. Reliability is also measured by investigating R^2. The discriminant validity is the degree to which a factor is truly distinct from other factors in a measurement model (Heir et al. 2013). A higher value such as 0.80 is significant, which means the variables represent the same concept (Kline 2011). The matrix of factor correlations is used to assess factors' nomological validity. The discriminant validity is the degree to which the construct is different from other constructs in the model (Heir et al. 2013). The discriminant can be tested by assessing the correlation between factors. If the correlation value is greater than 0.875, then the factors may measure the same concept and should be combined as one factor.

Unidimensionality can be examined by fit indices (Koufteros, 1999). If the model fit indices is satisfactory then the unidimensionality can be established.

5.4.3.3 CFA Results for the Constructs

The CFA was performed on each factor using SPSSAmos 22. The following section shows the analysis process for CFA.

5.4.3.3.1 CFA for Attitudinal Factors

In the proposed model, the attitudinal factor has three dimensions: perceived usefulness (USF), compatibility (COM) and attitude (ATT). The perceived usefulness factor is operationalised with seven items, the compatibility factor is operationalised with five items and attitude is operationalised with four items. Table 5.37 shows the results of the CFA. The results show the factor loading is higher than 0.50 and correlation between the three factors is less than the high limit of 0.85, which means there is a good discriminant validity. The R^2 values represent the acceptable convergent validity. The model fit indices (GFI, AGFI, NFI, CFI, TLI, IFI, X^2/df and RMR values) are in the acceptable value range, which represent better model fit.

Table 5.37: CFA results of the attitudinal factors

Factor/variable	Factor loading	t-value	R^2	Correlations between Factors
Perceived Usefulness				**USF - COM = 0.69** **USF – ATT = 0.74** **COM – ATT = 0.70**
USF7	0.73	f.p	0.54	
USF6	0.60	15.813***	0.35	
USF5	0.67	17.863***	0.45	
USF4	0.68	18.233***	0.47	
USF3	0.73	19.474***	0.53	
USF2	0.79	21.098***	0.62	
USF1	0.71	18.875***	0.50	
Compatibility				
COM5	0.74	f.p	.55	
COM4	0.80	21.659***	.64	
COM3	0.75	20.081***	.56	
COM2	0.74	19.913***	.54	
COM1	0.75	20.275***	.56	

Attitude			
ATT4	0.76	f.p	.58
ATT3	0.75	22.461***	.57
ATT2	0.79	21.333***	.62
ATT1	.79	21.533***	.62

Model fit indices: $\chi 2 = 536.557$, $df = 101$, $\chi 2/df = 5.312$, GFI = 0.91, TLI = 0.92, CFI = 0.932, IFI = 0.932, RMSEA = 0.075.
f.p., fixed parameter for estimation; *** $p < 0.001$.

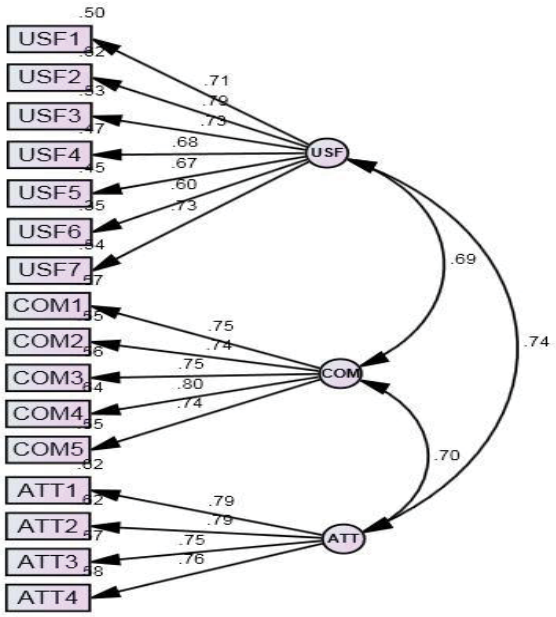

Figure 5.13: CFA results for attitudinal factors

5.4.3.3.2 CFA for Trust Factors

In the proposed model, the trust factor has four dimensions: trust in government (TGO), trust in the Internet (TIT), social trust (ST) and trust in e-participation (TRST). The trust in government factor is operationalised with eight items, the trust in the Internet factor is operationalised with four items, while the social trust and trust in e-participation factors are operationalised with three items each. Table 5.38 shows the results of the CFA for the trust factor. The results show the model fit indices $\chi 2 = 549.953$, $df = 129$, $\chi 2/df = 4.263$, GFI = 0.924,TLI = 0.952 ,CFI = 0.960, IFI = 0.960,RMSEA = 0.065,which are within the acceptable value range and represent better model fit. The items loading are higher than

0.50 and correlation between the three factors is less than the high limit of 0.85, which means a good discriminant validity. The R^2 values also represent acceptable convergent validity.

Table 5.38: CFA results of the trust factors

Factor/variable	Factor loading	t-value CR	R^2	Correlations between factors
Trust in government				
TGO8	0.86	f.p	0.74	**TIT – ST = 0.31**
TGO7	0.85	31.062***	0.72	**ST – TRST = 0.37**
TGO6	0.87	32.565***	0.76	**TGO – TIT = 0.38**
TGO5	0.87	32.867***	0.76	**TIT - TRST = 0.49**
TGO4	0.86	31.956***	0.74	**TGO – ST = 0.187**
TGO3	0.85	30.955***	0.72	**TGO – TRST = 0.58**
TGO2	0.80	27.918***	0.64	
TGO1	0.79	27.457***	0.62	
Trust in the Internet				
TIT4	0.74	f.p	0.54	
TIT3	0.88	23.178***	0.77	
TIT2	0.82	21.989***	0.68	
TIT1	0.74	19.907***	0.55	
Social Trust				
ST3	0.89	f.p	0.79	
ST2	0.86	28.884***	0.75	
ST1	0.80	26.310***	.63	
Trust in e-participation				
TRST3	0.78	f.p	0.62	
TRST2	0.90	26.618***	0.81	
TRST1	0.84	25.237***	0.71	

Model fit indices: $\chi 2 = 549.953$, $df = 129$, $\chi 2/df = 4.263$, GFI = 0.924, TLI = 0.952 , CFI = 0.960, IFI = 0.960, RMSEA = 0.065, f.p., fixed parameter for estimation; ***$p < 0.001$.

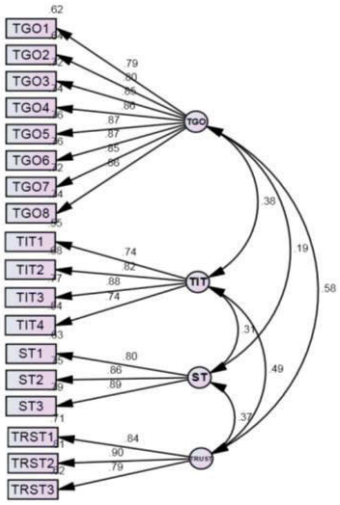

Figure 5.14: CFA results for trust factors

5.4.3.3.3 CFA for Social Influence Factors

In the proposed model, the social influence factor has four dimensions: family influence (FAM), friends'/colleagues' influence (FRD), media influence (MD) and subjective norms (SN). The family influence, friends'/colleagues' influence and media influence factors are each operationalised with three items. The subjective norms factor is operationalised with four items. Table 5.39 shows the results of the CFA for the social influence factors. The results shows the model fit indices values ($\chi2$ = 186.713, *df*= 59, $\chi2/df$= 3.165, GFI = 0.964, TLI = 0.978, CFI = 0.983, IFI = 0.983, RMSEA = 0.045) are within the acceptable value range, which represent better model fit. The items loading are higher than 0.50 and correlation between the three factors is less than the high limit of 0.85, which means a good discriminant validity. The R^2 values also represent acceptable convergent validity.

Table 5.39: CFA results of the social influence factors

Factor/Variable	Factor Loading	t-value	R^2	Correlations between Factors
Family Influence				
FAM3	0.87	f.p	0.76	**FAM - FRD = 0.689**
FAM2	0.85	28.774***	0.71	**FAM - SN = 0.734**
FAM1	0.83	28.120***	0.69	**FAM - MDI = 0.482**
Friends'/colleagues' influence				**MDI - SN = 0.619** **FRD - MDI = 0.538** **FRD - SN = 0.729**
FRD3	0.87	f.p	0.76	
FRD2	0.88	32.158***	0.77	
FRD1	0.86	31.205***	0.75	
Media influence				
MD3	0.88	f.p	0.77	
MD2	0.86	26.567***	0.75	
MD1	0.66	19.638***	0.43	
Subjective norms				
SN4	0.89	f.p	0.78	
SN3	0.87	33.785***	0.76	
SN2	0.88	34.366***	0.77	
SN1	0.86	33.331***	0.75	

Model fit indices: $\chi 2 = 186.713$, $df = 59$, $\chi 2/df = 3.165$, GFI = 0.964, TLI = 0.978 , CFI = 0.983, IFI = 0.983, RMSEA = 0.045
f.p., fixed parameter for estimation; ***$p < 0.001$.

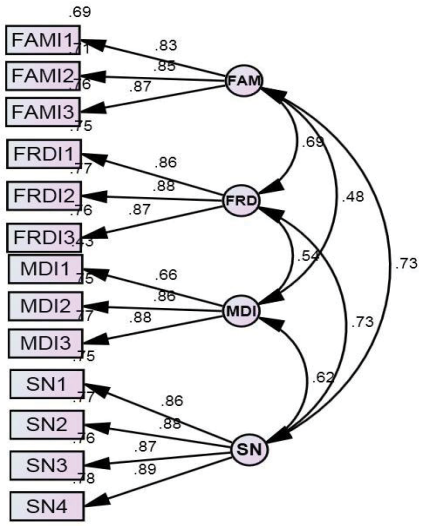

Figure 5.15: CFA results for social influence factors

5.4.3.3.4 CFA for Web Design Factor

Web design is operationalised with nine items. Table 5.40 shows the results of the CFA for the web design factor. The results show the model fit indices values ($\chi 2$ = 105.723, *df*= 14,$\chi 2/df$= 7.552, GFI = 0.959,TLI = 0.960,CFI = 0.973, IFI = 0.973,RMSEA = 0.092) are within the acceptable value range and represent better model fit. The item loadings are higher than 0.50 and correlation between the three factors is less than the high limit of 0.85, which means a good discriminant validity. The R^2 values are also representing acceptable convergent validity.

Table 5.40: CFA results of the web design construct

Factor/variable	Factor loading	*t*-value	*R*2
WD9	0.72	f.p	**0.52**
WD8	0.71	20.143***	0.51
WD7	0.79	20.917***	0.62
WD6	0.83	22.138***	0.70
WD5	0.81	21.424***	0.65
WD4	0.82	21.884***	0.68
WD3	0.81	21530***	0.66
WD2	0.79	21.568***	0.62
WD1	0.75	19.985***	0.56

Model fit indices: χ 2 = 105.723, *df*= 14 χ 2/*df*= 7.552, GFI = 0.959, TLI = 0.960, CFI = 0.973, IFI = 0.973, RMSEA = 0.092, f.p., fixed parameter for estimation; ***p < 0.001.

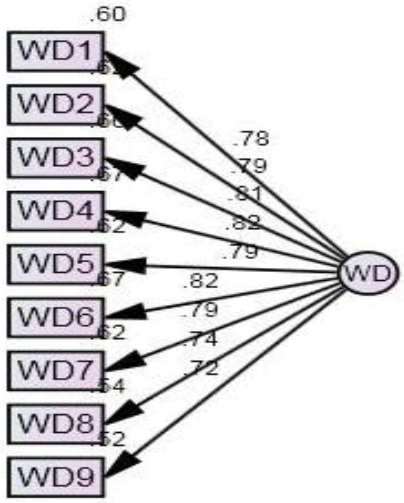

Figure 5.16 : CFA results for web design factor

5.4.3.3.5 CFA for the Intention to Engage Factor

The intention to engage factor is operationalised with four items. Table 5.41 shows the results for the CFA for the intention to engage factor. The results shows the model fit indices values ($\chi 2 = 6.482$, *df*= 2,$\chi 2/df = 3.241$,GFI = 0.996,TLI = 0.983,CFI = 0.994, IFI = 0.994,RMSEA = 0.054) are within the acceptable value range and represent a better model fit. The items loading are higher than 0.50 and correlation between the three factors is less than the high limit of 0.85, which means there is a good discriminant validity. The R^2 values are also representing acceptable convergent validity.

Table 5.41: CFA results of the intention to engage factor

Factor/Variable	Factor Loading	*t*-value	*R*2
INT4	0.59	f.p	0.34
INT3	0.75	13.777***	0.57
INT2	0.66	12.979***	0.43
INT1	0.72	13.558***	0.51

Model fit indices: $\chi 2 = 6.482$, *df*= 2 , $\chi 2/df = 3.241$, GFI = 0.996, TLI = 0.983 , CFI = 0.994, IFI = 0.994, RMSEA = 0.054, f.p., fixed parameter for estimation; ***$p < 0.001$.

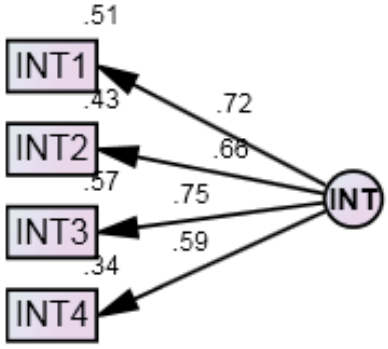

Figure 5.17 : CFA results for intention to engage

5.5 Research Model Assessment

5.5.1 Structural Equation Modelling (SEM) Overview

Structural equation modelling (SEM) is an extension of multivariate techniques that allows the use of various indicators to measure unobserved constructs whilst taking into

account measurement errors when statistically examining data (Hair et al., 2006). The main purpose of SEM is to specify, estimate and evaluate the linear relationships among a set of observed and unobserved constructs(Shah and Goldstein, 2006) whose estimated path coefficients are used for hypothesis testing (Shah and Goldstein, 2006). SEM analysis is the combination of a measurement model and structural model analysis as shown in Figure 5.10 (Shah and Goldstein, 2006). The measurement model depicts the relationships between the variables and the constructs and can be used to determine whether the constructs are accurately measured (discussed in Sections 5.4.2 and 5.4.3). The structural model represents the relationship between the factors only and is used to test the hypothesized relationships (Shah and Goldstein, 2006).These are discussed in the following sections.

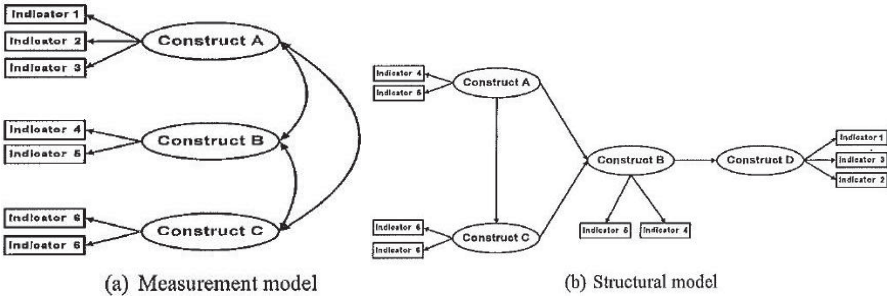

Figure 5.18: Two key SEM components

5.5.2 Measurement Model Assessment

5.5.2.1 *Specification and Assessment Criteria*

As outlined below in section 5.4.3, the CFA method was utilised to assess the measurement model. Unidimensionality, discriminant and convergent validity, as well as a determination of the degree of fit for the model were all evaluated in the measurement model. Table 42 below outlines the procedures adopted.

Table 5.42 Model assessment criteria

Measure	Requirement	Used to assess	References
X^2	$X^2 < df$	Model fit indices/ Unidimensionality	Garson 2006 Hair et al. 2013 Kline, 2011 Koufteros 1999 Lu et al. 2007
df	> 0		
X^2/df	< 3		
GFI	> 0.90		
TLI	> 0.90		
CFI	> 0.90		
IFI	> 0.90		
PCFI	> 0.80		
RMSEA	< 0.80		
Factor loadings	>0.50	Convergent validity	Hair et al. 2013 Koufteros 1999
Critical ratio (CR)	> 1.96		
R^2	>0.50		
Correlation coefficient between constructs	< 0.85	Discriminant validity	Kline, 2011

In addition to this, the reliability of the constructs was assessed using a more accurate measure of composite reliability and average variance extracted, rather than the traditional Cronbach's alpha. Composite reliability refers to the degree to which a set of two or more variables share their measurement of a construct (Koufteros 1999; Lu et al., 2007).

5.5.2.2 *Measurement Model Results*

The results of the measurement model assessment were evaluated against the criteria listed above. The model yielded an acceptable level of the fit: x^2= 3426.06; *df*=1632; x^2/df= 2.099; GFI= 0.896; TLI= 0.938; IFI = 0.943; CFI= 0.943; PCFI= 0.869; RMSEA=0.038. The convergent validity can be tested in the measurement model through evaluating the variables' loading on their respective constructs. The accepted cut-off value for item loading should be equal or greater than 0.50 (Hair et al., 2013). All variables had a significant loading greater than 0.50 at $p < 0.001$ on their respective factors. Regarding the indicator reliability, there were three variables (USF4, USF6 and MDI1) that had R^2 values less than the recommended value of 0.50, suggesting the potential for elimination.

However, these variables were retained because they had high significant factor loadings. Furthermore, composite reliability (CR) and average variance extracted (AVE) were examined to test the convergent validity. In this study, composite reliability was computed by the following formula suggested by Hair et al. (2006):

$$C.R. = \frac{\left(\sum_{i=1}^{n} \lambda_i\right)^2}{\left(\sum_{i=1}^{n} \lambda_i\right)^2 + \left(\sum_{i=1}^{n} \delta\right)}$$

where λ *is item loading*, δ *is the* construct error variance, $\delta = 1 - \lambda^2$,

n *is the number of items in each construct*

With respect to the average variance extracted (AVE), it was computed by the following formula (Hair et al., 2006):

$$AVE = \frac{\sum_{i=1}^{n} \lambda_i^2}{n}$$

where λ *is item loading*, n *is the number of items in each latent variable*

The values of composite reliability (CR) and average variance extracted (AVE) for all factors in the model were above the recommended value (CR > 0.70 and AVE > 0.50).Thus, the results indicated that the measurement model achieved the substantial convergent validity and unidimensionality. Additionally, all the correlation coefficients between the constructs were less than 0.85, suggesting there was discriminant validity (Kline, 2011).

Table 5.43: Composite reliability and average variance extracted

	Factors												
	SN	**ATT**	**USF**	**COM**	**ST**	**TIT**	**TGO**	**TRST**	**FAM**	**FRD**	**MDI**	**WD**	**INT**
CR	0.928	0.855	0.872	0.870	0.887	0.874	0.952	0.883	0.886	0.905	0.847	0.935	0.774
AVE	0.764	0.597	0.505	0.573	0.723	0.636	0.711	0.716	0.721	0.761	0.652	0.615	0.501
CR: Composite reliability **AVE:**average variance extracted													

5.5.3 Structural Model Assessment

An analysis of the interrelations among different constructs of the structural model was undertaken, following the determination and evaluation of the measurement model's unidimensionality and soundness. As figure 5.19 shows, mono-pointed arrows denoting cause all substituted the factor correlation signifying dual-pointed arrows, in order to create the structural model. As illustrated by the conceptual model, in the structural model the predicted associations among factors were represented by the mono-pointed arrows. The predicted associations and significant assemblies of factors in the structural model are indicated in figure 5.19. The predictions pertaining to the hypotheses and the decision whether to admit or decline them can be determined by the uniform coefficients of the paths, alongside an evaluation of the model fit indices in relation to the structural model. Section 5.5.2.2 which outlines the analysis of the measurement model, clearly indicates the likeness in the factors utilised in the evaluation of the indices for the model fit. The subsequent section outlines the structural model evaluation outcomes.

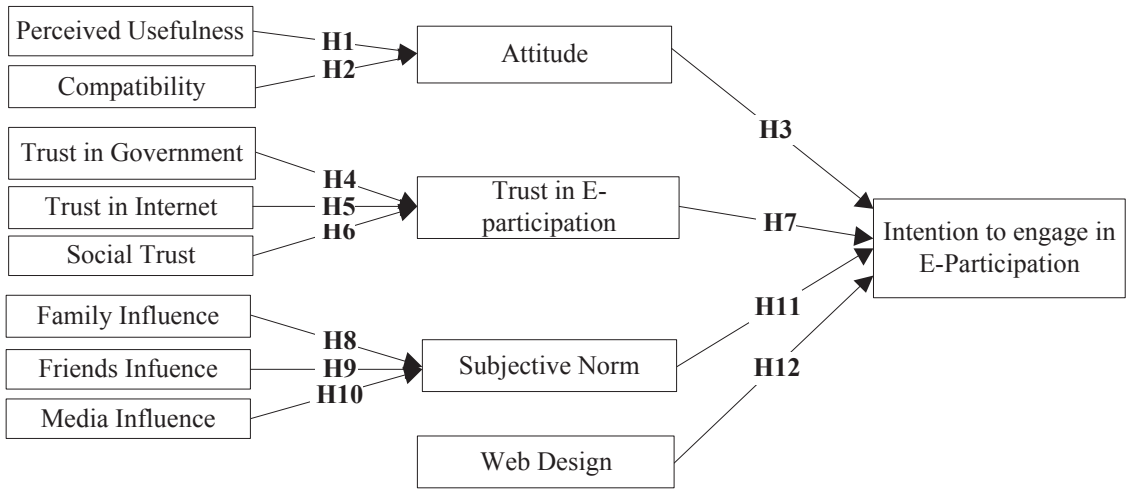

Figure 5.19: Research structural model

5.5.3.1 *Structural Model Assessment Results*

The results of the structural model assessment were evaluated against the criteria presented in Table 5.42. The results derived to a not acceptable level of model fit: $\chi 2$ = 5916.285;*df*= 1699; $\chi 2/df$= 3.482; GFI = 0.760; TLI = 0.860; CFI = 0. 865; IFI = 0.866; PCFI = 0.835; RMSEA = 0.057. In order to improve the structural model fit, Many suggested methodological procedures in the literature were done by examining the factors loadings and standardized residuals matrix in relation with the modification indices of the regression weights(Segars and Grover, 1998, Hair et al., 2013). To do this, the study firstly did an inspection of the factors loadings, which revealed that all items showed good loadings into latent constructs above recommended value of 0.50. Secondly, a visual examination procedure was conducted for residual matrix in relation to the modification indices of the regression weights for the confirmation purposes. The aim is to identify any substantial residuals variance that exceeds the suggested limit +- 4 (Hair et al., 2010) and any modification indices that exceeds the suggested limit of 5(Segars, 1997). The inspection revealed that FAM1 and FAM3 have the highest degree of residual variances with USF4and FRD1. This observation shows that these items become prime candidates for deletion. However, the study should confirm this procedure by assessment of the modification indices of these items (Hair et al., 2010). The assessment of the modification indices of regression weights revealed that these items (FAM1 and FAM3) cross-loaded into subjective norms (SN), trust in government (TGO) and friends'/colleagues' influence (FRD) constructs, confirming the first suggestion for removing and excluding FAM1 and FAM3 from further analysis (Segars, 1997; Hair et al., 2013). Additionally, the modification indices revealed that the family influence (FAM) construct has high modification indices (100 and 289) with subjective norms (SN) and friends'/colleagues' influence (FRD) constructs respectively. Therefore, it was recommended to remove family influence (FAM) construct from the model to increase the model fit.

After removing the family influence (FAM) construct, the structural model was evaluated again without the offending construct and the model failed in showing an acceptable level of fit. The values received for the model fit indices were $\chi 2$ = 5184.186; *df*= 1529; $\chi 2/df$= 3.391;GFI = 0 .784; TLI = 0.870; CFI = 0. 875; IFI = 0.876; PCFI = 0.860; RMSEA =

0.056. Although $\chi 2$ dropped from 5916.285 to 5184.186 ($df = 1529$, $p = 0$), demonstrating a good improvement, it still shows that the model failed to fit the data. GFI, TLI and CFI were still below the recommended value (> 0.90).The results of goodness-of-fit indices exhibited a very low value and need an iteration procedure to increase the level of significance and the stated fit indices (shown in Table 5.42). The modification indices revealed that the all items of the friends'/colleagues' influence (FRD) and media influence (MDI) constructs have a high error level. Therefore, it was recommended to remove friends'/colleagues' influence (FRD) and media influence (MDI) constructs from the model to increase the model fit.

The structural model was evaluated again without the offending constructs and the model again failed in showing an acceptable level of fit. The model fit indices were $\chi 2$ = 44381.654;*df*= 1216; $\chi 2/df$= 3.650; GFI = 0 .796; TLI = 0.869; CFI = 0. 875; IFI = 0.876;PCFI = .861; RMSEA = 0.059.Thus, the results of goodness-of-fit indices still exhibited a very low value and need an iteration procedure to increase the level of significance and the stated fit indices. The fit of indices needed to be improved by deleting the items that showed a standard error rate. All of the items (variables) had a significant loading ($p < 0.001$) on their respective constructs. The inspection of the residual matrix and the modification indices illustrated that the USF4 and WD9 items have high degrees of residual variance and high modification indices. Consequently, these items were eliminated from the model.

The assessment for the structural model was re-run again without the offending items. The model yielded an acceptable level of fit, with model fit indices of $\chi 2$ = 1690.904;*df*= 844; $\chi 2/df$= 2.003; GFI = 0.904; TLI = 0.954; CFI = 0.957; IFI = 0.957; PCFI = 0.894; RMSEA = 0.036. As mentioned earlier, the chi-square does not work properly with a large sample size to which it is very sensitive. All of the items (variables) had a significant loading ($p < 0.001$) on their respective constructs. The results of model fit indices exhibited an acceptable level of model fit and therefore provided support to the structural model validity. Additionally, all of the correlation coefficients between each pair of the constructs were less than 0.850, suggesting an adequate discriminate validity (Kline, 2011).Table5.44 compares the fit-indices of the four models. The results show that Models A, B and C are not admissible, since they contained the offending parameter

estimates and less acceptable fit indices. Only Model D has an acceptable model fit indices, indicating that it has an explanatory power. Consequently, Model D was chosen as the final model that best represented the study model.

Table 5.44: Comparison of hierarchical models' fit indices

Fit indices	Hierarchical models			
	A	B	C	D
$\chi 2$	5916.285	5184.186	4438.654	1690.904
df	1699	1529	1216	844
$\chi 2/df$	3.482	3.391	3.650	2.003
GFI	.760	.784	.796	.904
TLI	860	.870	.869	.954
CFI	.865	.875	.875	.957
IFI	.866	.876	.876	.957
PCFI	.835	.860	.861	.894
RMSEA	.057	.056	.059	.036
AIC	6178.285	5432.186	4658.654	1894.904
	Original model with all items	FAM construct removed	RED and MDI constructs removed	USF4and WD9 items removed

Since there are items and constructs were removed from the structural model, it is recommended to test the convergent validity of the model. Therefore, composite reliability (CR) and average variance extracted (AVE) were evaluated to test the convergent validity. The values of composite reliability (CR) and average variance extracted (AVE) for all factors in the model were above the recommended value (CR > 0.70 and AVE > 0.50). Thus, the results indicated that the structural model achieved the substantial convergent validity and unidimensionality.

Table 5.45 : Composite reliability and AVE for the structural model

	CR	AVE	SN	ATT	USF	COM	ST	TIT	TGO	TRST	WD
SN	0.908	0.763	**0.873**								
ATT	0.856	0.597	0.341	**0.773**							
USF	0.816	0.671	0.377	0.455	**0.696**						
COM	0.847	0.580	0.202	0.596	0.321	**0.761**					
ST	0.887	0.724	0.154	0.048	0.144	0.181	**0.851**				
TIT	0.874	0.636	0.013	0.279	0.321	0.379	0.313	**0.797**			
TGO	0.907	0.720	0.023	0.124	0.240	0.203	0.183	0.381	**0.849**		
TRST	0.883	0.716	0.179	0.268	0.389	0.361	0.366	0.489	0.580	**0.846**	
WD	0.721	0.624	0.160	-0.029	-0.034	0.001	0.108	0.216	0.292	0.193	**0.790**

5.6 Hypothesis Results Discussion

As discussed in above sections, following the acceptable structural model fit, the path coefficient was assessed to answer the research question and address the hypotheses proposed in the current study. The following sections discuss the path model for latent variables to test the hypotheses. The main research question is: What are the key factors that influence citizens' intention to engage in e-participation on e-government websites in Saudi Arabia? Table5.46 shows the path testing. The research question is answered in the following sections by addressing each hypothesis.

Table 5.46: Hypothesis testing

Hypothesis	Path	Path coefficient	t_value	P_value	Hypothesis testing results
H1: Perceived usefulness has a significant positive effect on citizens' attitudes towards e-participation activities	**USF→ATT**	0.537	12.298	***	Supported
H2: Compatibility has a significant positive effect on citizens' attitudes towards e-participation activities	**COM→ATT**	0.329	8.265	***	Supported
H3: a Favorable attitude towards e-participation positively affects citizens' intention to engage in e-participation activities	**ATT→INT**	0.299	6.880	***	Supported
H4: Trust in the government has a significant positive effect on citizens' trust in e-participation activities	**TGO→TRST**	0.402	9.774	***	Supported
H5: Trust in the Internet has a significant positive effect on citizens' trust in e-participation activities	**TIT→TRST**	0.248	6.330	***	Supported
H6: Social trust has a significant positive effect on citizens' trust in e-participation activities	**ST→TRST**	0.288	7.379	***	Supported
H7: Citizens' trust in e-participation has a significant positive effect on citizens' intention to engage in e-participation activities	**TRST→INT**	0.308	7.033	***	Supported
H8: Family influence has a positive effect on subjective norms	**FAM→SN**	Path removed from the final model			Not tested
H9: Friends'/colleagues' influence has a positive effect on subjective norms	**FRD→SN**	Path removed from the final model			Not tested
H10: Media influence has a positive effect on subjective norms	**MID→SN**	Path removed from the final model			Not tested
H11: Subjective norms have a significant positive effect on citizen's intention to engage in e-participation activities	**SN→INT**	0.336	7.959	***	Supported

H12: Good Web design has a significant positive effect on citizens' intention to engage in e-participation activities	**WD→INT**	0.176	4.472	0.005**	Supported

Model fit indices: $\chi 2 = 1690.904$,*df* = 844, $\chi 2/df = 2{,}003$, GFI = 0 .904 , AGFI= 0.895,TLI = 0.954, CFI = 0. 957, IFI = 0.957, RMSEA = 0.036, f.p., fixed parameter for estimation; $^{**}p < 0.01$, $^{***}p < 0.001$.

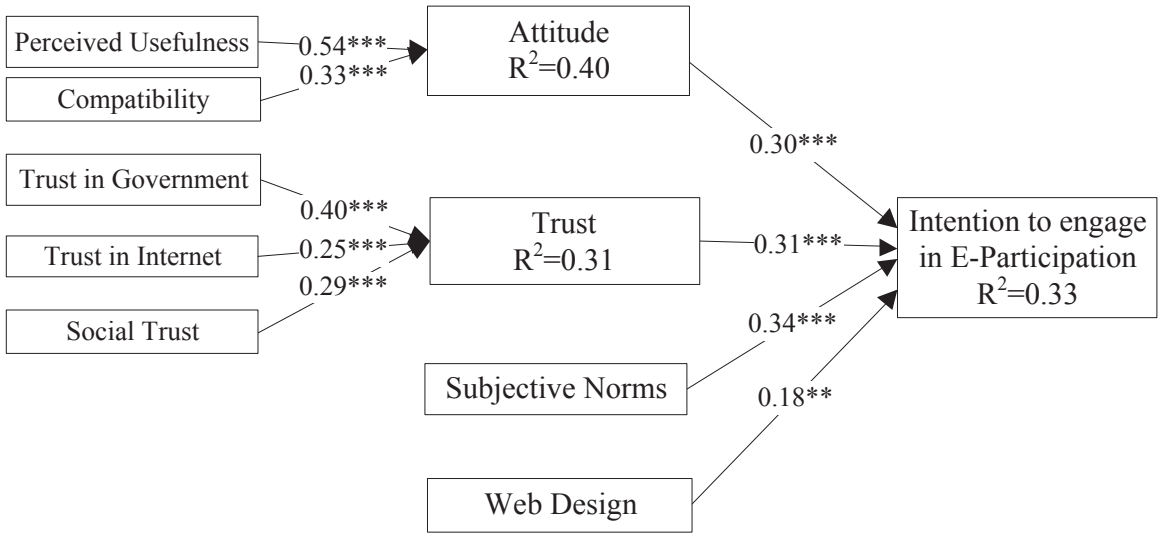

Figure 5.20: Structural model with standardised path

5.6.1 Attitudinal Factors

This section shows the model hypothesis results in relation to attitudinal factors (attitude, perceived usefulness and compatibility).

Perceived usefulness: Hypothesis **H1** suggests that perceived usefulness has a significant positive effect on citizens' attitudes towards e-participation. Table 5.46 and Figure 5.20 show that the relationship between perceived usefulness and citizens' attitudes is stronger with path coefficient 0.54 at p value < 0.001. The structural model result is consistent with Hypothesis 1 and thus H1 is accepted. This reflects that citizens are more likely to have a positive attitude towards e-participation activities on e-government websites if they perceive the e-participation activities to be useful.

Compatibility: Hypothesis **H2** suggests that compatibility has a significant positive effect on citizens' attitudes towards e-participation. Table 5.46 and Figure 5.20 show that the effect of compatibility on citizens' attitudes is significant with path coefficient 0.33at p value < 0.001. This means H2 is accepted, showing that citizens will have favorable attitude towards e-participation activities on e-government websites if they believe that e-participation is compatible with their values in expressing their voice.

Attitude: Hypothesis **H3** suggests that favorable attitudes towards e-participation positively affect citizen's intention to engage in e-participation. Table 5.46 and Figure 5.20 show that the effect of citizens' attitudes on citizens' intention to engage in e-participation is significant, with path coefficient 0.31 at p value < 0.001. Therefore, H3 is accepted. This means that a citizen who has a positive attitude is more likely to engage in e-participation initiatives in e-government websites in Saudi Arabia.

Additionally, R^2 of the attitude factor is 0.40, as shown in Figure 5.21. This means variance in citizens' attitudes is 52% towards citizens' intention to engage in e-participation. The results of the attitudinal factors (perceived usefulness, compatibility and attitude) suggest that the proposed model is strongly supported by the data.

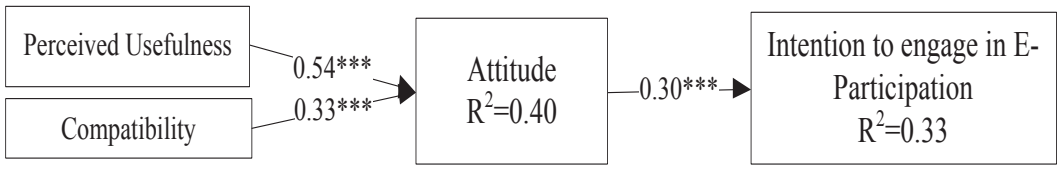

Figure 5.21: Attitudinal factors hypotheses

5.6.2 Trust Factors

This section shows the model hypothesis results in relation to trust factors (trust, trust in government, trust in the Internet and social trust).

Trust in the Internet: Hypothesis **H4** suggests trust in the Internet has a positive effect on citizens' trust in e-participation. Table 5.46 and Figure 5.20 show that the effect of trust in the Internet on citizens' trust is significant, with path coefficient 0.25 at p value <

0.001. Therefore, H4 is accepted. It can be interpreted that trusting the Internet promotes citizens' trust in e-participation in the Saudi context.

Social trust: Hypothesis **H5** suggests Social trust has a positive effect on citizens' trust in e-participation. Table 5.46 and Figure 5.20 show that the effect of social trust on citizens' trust is significant with path coefficient 0.29 at p value < 0.001. Therefore, H5 is accepted. This means that Saudi citizens are more likely to engage in e-participation, if their social trust is high.

Trust in government: Hypothesis **H6** suggests trust in government has a positive effect on citizens' trust in e-participation. Table 5.46 and Figure 5.20 show that the effect of trust in government is significant with path coefficient 0.40atp value < 0.001. This means H6 is accepted. It can be interpreted that trust in the government is an important indicator for Saudi citizens' trust concerning the use of e-participation.

Trust: Hypothesis **H7** suggests that citizens' trust in e-participation has a positive relationship with citizen's intention to engage in e-participation. Table 5.46 and Figure 5.20 show that the relationship of citizens' trust with citizens' intention to engage is significant with path coefficient 0.31 at p value < 0.001. This means H7 is accepted. This indicates the significance of trust to engage in e-participation activities in the Saudi context.

R^2 of the trust factor is 0.31 as shown in Figure 5.22. This means there is 31% variance in citizens' trust in e-participation towards the intention to engage in e-participation. The results of the trust factors (trust in government, social trust and trust in the Internet) suggest that the proposed model is strongly supported by the data.

The findings show the order of significance of factors that influence on citizens' trust in e-participation, which has a high impact, is trust in government followed by social trust and then trust in the Internet. This indicates that trust in e-participation is an important factor to be associated with the intention to engage in e-participation.

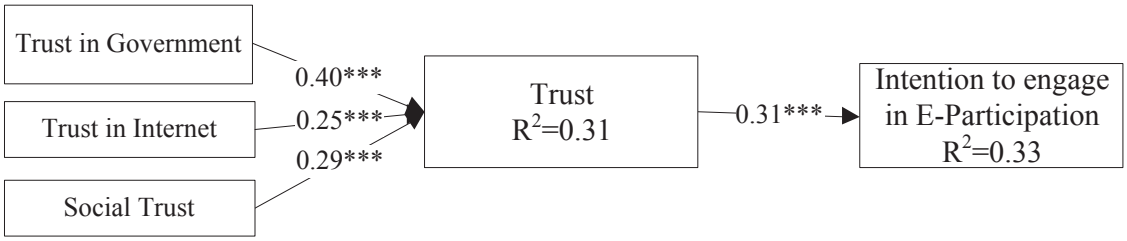

Figure 5.22: Trust factors hypothesese

5.6.3 Social Influence Factors

This section shows the model hypothesis results in relation to the social influence factors (subjective norms, family influence, friends influence and media influence).

Subjective norms: Regarding subjective norms, hypothesis 11 (H11) suggests that subjective norms have a positive relationship with citizens' intention to engage in e-participation. Table 5.46 and Figure 5.23 show that the relationship of subjective norms with citizen's intention to engage is significant, with path coefficient 0.34 at p value < 0.001. Therefore, H11 is accepted. This means that citizens' behaviour is affected by the pressure received from others people. The original model in this study proposed that citizens' subjective norms are influenced by other sub factors such as the influence from family, friends, colleagues and the media. However, these sub factors were removed from the final model because of the high error level and it was necessary to remove them to increase the structural model fit.

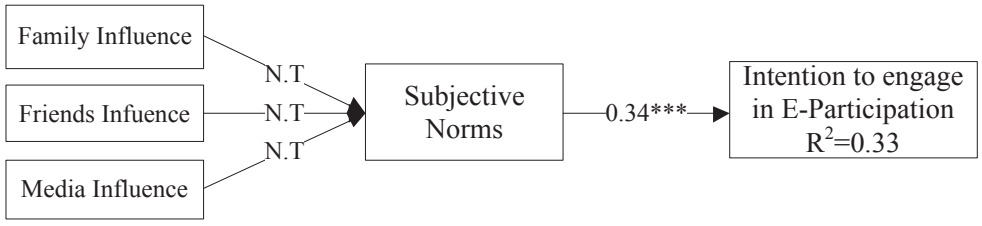

Figure 5.23: Social influence factors hypotheses (N.T : not tested)

5.6.4 Web Design

In relation to the influence of web design on intention to engage in e-participation,

Hypothesis 12 (H12) suggests that web design has a significant positive effect on

citizens' intention to engage in e-participation. Table 5.46 and Figure 5.24 show that the relationship of web design with citizens' intention to engage is significant with path coefficient 0.18 at p value < 0.001. This means H12 is accepted. The reason behind the significance of web design is that navigation, accuracy/accessible information and visual appearance of e-government website facilitate using e-participation activities.

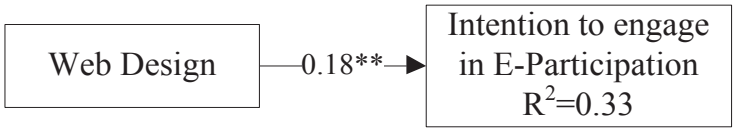

Figure 5.24: Web Design Hypothesis

5.6.5 Intention to Engage in E-participation

The results of the dependent variable on intention to engage in e-participation (INT) suggest that the proposed model is strongly supported by the data. As shown in Figure 5.14, R^2 of the INT is 0.33. This means variance in intention to engage in e-participation (INT) is 33%. This means that attitude, trust subjective norms and web design strongly reflect the factors that influence on the intention to engage in e-participation activities on e-government websites.

The findings show that that among the factors tested in the current study, subjective norms have the highest significant effect towards intention to engage in e-participation. This is because of the Saudi Arabia is considered a high collectivist culture(Hofstede et al., 1991) and citizens' behaviour in collectivistic country is affected by social norms and social pressure received from people who are important to them. Other noteworthy findings are that both citizen attitude and trust occupy a central role in e-participation. Citizens who have a positive attitude and trust are more likely about becoming part of participatory activities are more likely to use e-participation.

Finally, e-government website design has the potential to determine the citizens' intention to engage in e-participation initiatives. Well-designed e-government websites attract citizens' to use e-participation activities.

5.7 Chapter Summary

This chapter presented the descriptive analysis for the survey respondents and tested the hypotheses in the proposed research model. Firstly, descriptive data analysis was carried out to provide a comprehensive insight to the characteristics of the data collected through the online survey. Secondly, the data set was screened in relation to normal distribution and outliers. The data screening revealed that the data set had an acceptable normal distribution without extreme outliers. In addition, the assessment of the standard deviation and standard error of the mean indicated that the 770 respondents obtained from the survey represented the population. Thirdly, the measurement scale analysis was carried out to assess the scale reliability for model constructs. The scale reliability tests showed that the measurement scales used in this study were reliable based on the high values of Cronbach's alpha for each construct. In addition, the item-total correlations of all the measurement items were substantial, showing that each item adequately measured its underlying construct. Following this, exploratory Factor Analysis (EFA) was conducted for model constructs to reveal the number of factors. Further, based on Harman's one-factor test, EFA was carried out on all of the measurement items to assess the common-method variance. The result of this test showed that common-method variance was not a major issue in relation to the scale reliability. The factor structures obtained from EFA were then tested by CFA technique to confirm the validity. The results of the CFA showed adequate reliability, validity and unidimensionality. Next, the chapter presented details of the analytical procedures and evaluation results for the proposed model in this study. The measurement model and the structural model assessments were carried out to test the model convergent validity and discriminate validity. CFA was employed to assess the measurement model. The assessment results showed that the measurement model revealed an acceptable level of model fit, convergent validity, discriminate validity and unidimensionality. The structural model then was assessed before testing the hypotheses. The structural model assessment indicated an acceptable model fit, convergent validity, discriminate validity and unidimensionality after removing three constructs (FAM, FRD and MID) and two items (USF4 and WD4) from the structural model. Finally, the path estimations test showed that all the hypotheses were supported except H10, H9 and H8 because they were removed

from the structural model due to the model fit. Although, the results of SEM analysis appears to show satisfactory answer to the research question, the findings of the quantitative study were explored in the focus group study described in the next chapter.

CHAPTER 6 QUALITATIVE DATA ANALYSIS

This study employed focus group to obtain Saudi citizens' opinions about the influencing factors on citizens' intention to engage in e-participation. The focus group study aims to confirm the quantitative results from the survey outlined in the previous chapter.

This chapter presents an analysis of the qualitative data acquired from the focus group. It begins by describing the aim and procedure of the focus group followed by a presentation of the respondents' profiles. Then the findings and the relevant statements made by the respondents were interpreted. The analyses were compared to the quantitative analysis in order to explain the hypotheses.

6.2 Focus Group

The main purpose of the conducting a focus group is to confirm the findings generated from the quantitative data. The rationale behind using focus group discussions is described in Chapter 4 in detail. Because it is important to match the sampling frame of the focus group with that of the survey study (quantitative), like the participants of the survey, the participants in the focus groups were also Saudi Arabian citizens. The criteria for recruiting participants were to have experience with the Internet and e-government websites. One focus group was conducted. The focus group consisted of eight participants, all of whom had similar levels of e-government experiences. All participants were expert Internet users who were well informed about Internet technology as well as being experienced e-government users who were accustomed to e-government transactions. Furthermore, some of them had engaged in e-participation activities in e-government websites and they also had knowledge about Saudi government law and precise judgment about e-participation.

Before starting the focus group discussion, the researcher opened the session by explaining the purpose of the research to the attendees. Additionally, the researcher gave the participants a background about e-participation and the factors under investigation. All participants were informed that their discussion would be recorded and were asked to

sign a consent form. The researcher then started to ask questions about the opinions, beliefs and experiences of the participants concerning e-participation and its related issues in the context of the Saudi Arabian e-government. The participants' responses throughout the discussion were recorded on an audio recorder and notes were also taken for further analysis. The focus group was conducted in Arabic, as all participants were Saudi citizens and native Arabic speakers. The researcher transcribed the discussion for the data analysis and then translated it to English with assistance from expert translators.

6.2 Participants' Profiles

The participants were labeled as P1 to P8 to meet the ethics committee requirements for maintaining their anonymity. All the participants were males. This gender imbalance may be because of the restrictions in the interaction between men and women in Saudi culture. Out of eight participants, five were 30–39 years old while three participants were aged 20–29 years old. In regard to the highest level of education, four participants had a postgraduate's degree, three had a bachelor's degree and one had a college degree. All of the participants had sufficient experience in using the Internet, with Internet experience of more than five years. In terms of e-government experience, the participants had a good level of experience in using e-government. Five participants had experience of more than three years of e-government use, while the other participants differed in their access to e-government websites. Most of the participants access the e-government websites either once a month or a few times a month. All participants had different purposes for using e-government websites. For example, eight participants used it for getting information, while all participants use e-government websites for transactional services. Two participants said they use it for proposing ideas or suggestions and participating in discussion forums and five participants reported using e-government websites to contact officials. Table 6.1 presents the background information of all of the focus group participants.

Table 6.1: Participants' Profile

Characteristics		Frequency	Percentage (%)
Age	20-29	3	37.5
	30-39	5	62.5
Education level	College degree	1	12.5
	Bachelor degree	3	37.5
	Postgraduate degree	4	50
Internet experience	More than 5 years	8	100
Experience using e-government websites	1–3 years	3	37.5
	More than 3 years	5	62.5
E-government website access	About once a month	4	50
	A few times a month	3	37.5
	A few times a week	1	12.5
Purposes of using e-government websites	Getting information	7	87.5
	Doing transactional services	8	100
	Proposing ideas/ suggestions	2	25
	Participating in discussions	2	25
	Contacting officials	4	50

6.3 Analysis of the Focus Group Responses

The findings emerged of the analysis of the focus group discussion are outlined below. The discussion highlights the important factors influencing citizens' intention to engage in e-participation on e-government websites in Saudi Arabia.

6.3.1 Trust

As shown in the quantitative results described in Chapter 5, trust was found to be a significant factor affecting the intention to use e-participation. The survey results reveal that citizens' trust in e-participation is strongly influenced by their trust in government and the Internet. Additionally, Saudi citizens' trust in others (social trust) has a

significant effect on their trust in e-participation activities on e-government websites. Aligned with the survey results, the majority of the participants agreed that trust in e-participation is a significant prerequisite for engaging in e-participation. Five participants clearly mentioned that their tendency to trust in e-participation has a positive influence on their intentions to engage in e-participation. They indicated that having trust in provided services is necessary before using such services. Two participants mentioned that they have limited trust when dealing online, such as on the Internet. One participant mentioned that they had had a bad experience using e-participation in the Saudi context.

Some of the responses from participants are as follows.

> *Trust is important for me.In order to ensure successful acceptance of e-government services, I should have confidence in e-government services and technologies. (P2)*
>
> *The services offered by the website should be clear to me… As I said, I must be aware and sure to trust the services I will use. (P5)*
>
> *I usually trust the government and their services because I think the people are more professional and provide trustworthy services. (P6)*
>
> *There are e-participation services, but in reality it often does not work, that's why I have a very limited trust… Citizens need to trust in e-participation activities/tools before using them. Without trust, engaging in e-participation is useless. (P4)*
>
> *Actually, I am afraid of participating in online discussion through e-government websites. The government can take action if something goes wrong. That's why I have low trust in e-participation. (P8)*
>
> *I trusted them initially before I experienced any interaction, but once I did not get the required information and now I just browse to get contact numbers and make my inquires directly over the phone. (P7)*

All the participants revealed that trust is a crucial factor engaging in e-participation. In relation to trust in e-participation on e-government websites, the analysis shows interesting distinctions among the factors affecting trust in e-participation for those using it or do not make at least some use. Trust in government is the dimension with the strongest influence on participants' trust in e-participation. Four participations (P1, P3, P5, and P7) stated trust in the government was their dominant criterion for trusting in e-participation. They agreed on the importance of trust in government in order to trust in e-participation activities. Additionally, four participants also cited trust in the Internet as a

strong reason to trust e-participation activities. They argued that trust in the Internet is a vital predictor to trust in e-participation because of the different online tools used. Only three participants said that social trust contributes to their trust in e-participation.

The participant's statements supporting the above summary are as follows:

> *There is no point of using e-participation if I don't trust the government. I trust in e-participation because I trust in government. The government is making an effort to improve the relationship with its citizens. (P1)*
>
> *I can confidently say that trust in government is the main reason for me, and without it there is no surety to trust the e-participation. The government competence in providing e-participation is important. If I see that government agencies care about e-participation in their websites, that I will increase my trust in such services. (P3)*
>
> *I absolutely agree with P3… Trust in government agencies will impact on our trust in e-participation. (P5)*
>
> *My trust in government depends on the ministries' effort. For example, I trust more ministry of (removed) than ministry of (removed), because I can see that they are honest in seeking consultations from citizens…" (P7)*
>
> *I stopped to post my suggestions on idea scale webpage in the ministry of (removed) because I do not believe in their ability and their care about such activities. (P3)*
>
> *I read the policy first about the government and then Internet usage, that's why my trust becomes high to participate in online discussion… Through e-participation, I will interact with government so I need to feel secure over the Internet…. Actually I am using my nickname to interact with government agencies over the social networking sites because I don't want to expose my identity. (P6)*
>
> *I must have trust in technology and the Internet first before trusting in e-participation… I think trust in the Internet is necessary because there are many tools used for e-participation such as Twitter. (P2)*
>
> *One reason why I am not interested in such services is that some people do know what is needed from them. So, they just participate without any care. That affects the outcomes. (P3)*
>
> *As member of this society, it gives me confidence to engage in e-participation and share my opinions. (P4)*
>
> *Based on your definition of social trust, yes, I keep that in mind when I engage in e-participation… I usually trust in others. (P8)*

The above responses show that trust in government, trust in the Internet and social trust are all important for trust in e-participation. This indicates a positive relationship with

trust and the intention of participants to engage in e-participation activities on e-government websites. These responses provide evidence to support that trust in e-participation significantly influences citizens' intention to engage in e-participation on e-government websites. In addition to this, three sub factors were found to be significant determinants to trust in e-participation; namely, trust in government, trust in the Internet and social trust. These findings support the quantitative data findings.

6.3.2 Attitude

The survey results show that attitude towards e-participation is an important influencing factor on citizens' intention to engage in e-participation. Perceived usefulness and compatibility were found to have significant impacts on citizens' attitude. In relation to the survey findings, there was agreement between all participants that a positive attitude towards e-participation plays a vital role on engaging in e-participation. The participants reported that they tend to get involved in e-participation activities if they have a positive attitude. Two participants (P3 and P5) strongly insisted that attitude is the most important requirement to intention to engage in e-participation. One respondent (P2) explained that he has a positive feeling about using e-government services and this feeling encourages him to try the services provided on e-government websites.

> *I always have a positive attitude towards e-government services. This feeling will encourage me to use them. So, I think attitude in important factor. (P2)*
> *Of course yes… E-participation the interaction between government and its citizens, my attitude towards e-participation service in an important factor to use such services. (P3)*
> *I agree with P3 having a positive attitude towards e-participation would be the first step to engage in it. (P5)*

The majority of respondents agreed that the usefulness and compatibility of e-participation influences their attitude towards their intention to engage in e-participation. Two respondents (P4 and P8) explained that based on their experience, their attitudes were influenced by the usefulness of the e-government services. Participant P4 recognized the usefulness of e-participation, saying that e-participation is an effective way to express opinions to government. He also indicated that through e-participation initiatives, government agencies can share decision-making with citizens. On other hand, participant P7 reported not being able to have a favorable attitude about e-participation unless its benefits were fully known. Participant P1 agreed with participant P7 and said

that citizens would have a positive attitude towards e-participation once they learned about its benefits. They also criticized government agencies for not advertising and educating citizens about e-participation activities. Additionally, respondent P2 explained he would not hesitate to engage in e-participation if he was convinced that the services were compatible with his beliefs and background. He stated that e-participation is good practice for Islamic values concerning seeking advice. In Islam, people are encouraged to share opinions and decisions with others.

Some of the respondents' responses supporting the above statements are as follows:

> *I think through e-participation, citizens can be decision-makers. I like the idea of e-participation…I think e-participation is useful. Citizens can express their voice to government agencies. It is an effective way to interact with government agencies. (P4)*
>
> *The government needs to train people, old people in particular; about what contribution they can provide using such services… One of the reason for why I do not willing to engage in e-participation is that I think e-participation is not beneficial especially in our culture. (P8)*
>
> *The government agencies did not tell us about benefits of engaging in e-participation… We need to see these benefits first in order to like the idea of e-participation. (P7)*
>
> *I agree with P7. Citizens will have a positive attitude towards e-participation if they receive benefits from engaging in e-participation…. To like something, you need to get good things from it. This is the truth. (P1)*
>
> *I think e-participation is compatible with our culture and values… We are required to seek the advice of others. I think that e-participation is the same practice. (P2)*

Based on the analysis of the responses, there is strong evidence indicating that citizens' attitude towards e-participation positively affects citizens' intention to engage in e-participation. The findings also revealed that citizens' attitude towards e-participation is affected by perceived usefulness and compatibility. They expressed their opinions that using e-participation is convenient to them and they feel it makes their voices heard with the government.

6.3.4 Subjective Norms

As shown in Chapter 5, the survey findings reveal that subjective norms have a strong impact on citizens' intention to engage in e-participation. In line with survey finding, all

participants in the focus group supported the importance of subjective norms on their intention to engage in e-participation in the Saudi context. Participant P2 argued that Saudi culture affects individual behaviour and hence social influence affects citizens' intention to engage in e-participation activities on e-government websites. However, one participant (P6) mentioned that they avoided being involved in e-participation activities because they did not know many citizens interested in such services.

Additionally, many of the participants in the focus group believed family and friends have no influence on subjective norms. The participants do not agree on the effects of family and friends on their subjective norms. However, all participants strongly emphasized the effect of the media and friends on citizens' subjective norms. For example, one participant (P1) mentioned that they visited an e-government website because of an advertisement about it. Participants such as P4 made strong recommendations to government agencies to employ the media and social media to educate citizens about e-participation and its benefits for both government and citizens.

Some statements from respondents supporting the above are listed here.

> *Actually, I do not like to engage in e-participation because there are not many people using such services. (P6)*
>
> *Our culture and lifestyle play important roles in our behaviours. So, social influence is a crucial factor to engage in e-participation (P2)*
>
> *To be honest, I visited the website of ministry of (removed) to learn more about a specific service after I saw advertising in the street. (P1)*
>
> *Yes, I think that an advertising campaign about e-participation and its benefits for government and citizens will encourage people to use it. (P4)*

Based on the above analysis of the focus group responses, it can be interpreted that subjective norms have a positive influence on citizens' intention to engage in e-participation activities on e-government websites in the Saudi context. Additionally, the influence of family and friends/colleagues were found to have no effect on subjective norms, while media influence was found to be an important predictor for subjective norms

6.3.4 Web Design

In the survey study, web design was found to have a significant effect on citizens' engagement in e-participation. In the focus group study, all participants agreed that e-government website design is an important factor that affects their intention to use e-government websites services. Participants agreed that a well-designed website encourages visitors to browse the website. Participant P2 reported that high-quality website design positively affects his intention to engage in e-participation activities on e-government websites. Another participant, P6, agreed about the importance of the website design. He explained that the website design is one of the significant indicators of the quality of e-government websites.

In regard to the web design aspects, clear navigation and updated contents were mentioned in the discussion as the most-used aspects of e-government services. Two participants (P5 and P7) suggested that government agencies should have simple and clear navigation for e-participation activities in the main pages of websites. Participant P3 argued that most of the e-government websites in Saudi Arabia are not easy to navigate and have old content. During the discussion, participant P1 shared their bad experience finding e-participation activities and instructions on one e-government website. Therefore, one participant (P8) emphasized that citizens would not engage in e-participation if they find e-government websites hard to navigate. One participant (P4) argued that good website design is a sign that the government is interested in providing e-participation on their website. They explained that many e-government websites do not give the impression that e-participation is an important service.

Some of the respondents' statements supporting the above points are as follows:

> *The well-designed e-government websites encourage citizens to browse the website and use the provided services. (P2)*
>
> *I agree with P2, the web design is important. It gives the user the first impression about the website's quality. (P6)*
>
> *There should be a clear link for e-participation activities on the homepage. (P5)*
>
> *I browsed the website of the ministry of (removed) but I could not find a link or anything about e-participation activities on the website. (P1)*

In my opinion, there must be clear instructions and information about e-participation activities on the website. We need to know what to do and how to do it. (P7)

How we can engage in e-participation if we cannot navigate the websites easily? (P8)

Unfortunately, many e-government websites are hard to navigate and have out-of-date information. For example, I remember that I did need help to find a specific form on the website of ministry of (removed) (P3)

I can see that many e-government websites have a small link for e-participation in the bottom of the page. That gives me the impression that this service is not important enough to be used. (P4)

From the analysis of responses, it is evident that e-government website design positively affects the intention to engage in e-participation on e-government websites in the Saudi context. The discussion highlighted that users do not wish to spend a lot of time looking for information on the website and that the ability to navigate the content they want plays an essential role in determining the use of e-government services. Therefore, navigation and content are the most important aspects of the quality of e-government websites. Participants argued that easy navigation for e-participation activities on e-government websites demonstrates that the government agencies respect their citizens and care about e-participation. In particular, citizens use website design as a first step to gauge the competence of e-government websites.

6.4 Findings of Focus Group Analysis

Based on the findings from the focus group, all the final hypotheses resulted from the survey analysis were supported. This means that attitude, trust in e-participation, subjective norms and web design positively affect citizens' intention to engage in e-participation on e-government websites; usefulness and compatibility have positive effects on attitude towards e-participation; and trust in e-participation is positively affected by trust in government, trust in the Internet and social trust. Although hypothesis H10 was dropped from the model in SEM analysis, the responses from the focus group indicate that hypothesis H10 was supported. These hypotheses could be investigated in the future research to confirm the evidence emerging from the focus group. Table 6.2 presents a comparison of the hypotheses' results in the quantitative study (survey) and qualitative study (focus group).

Table 6.2: Comparison between survey and focus group findings

Hypothesis	Survey	Focus Group	Findings
H1: Usefulness ➔attitude	Supported	Supported	Usefulness positively affects attitude towards e-participation
H2: Compatibility ➔attitude	Supported	Supported	Compatibility positively affects attitude towards e-participation
H3: Attitude ➔ intention to engage	Supported	Supported	Attitude is important in fostering the intention to engage in e-participation
H4: Trust in government ➔trust in e-participation	Supported	Supported	Trust in government is a very important antecedent factor for trust in e-participation.
H5: Trust in the Internet➔ Trust in e-participation	Supported	Supported	Trust in the Internet positively affects citizens' trust in e-participation.
H6: Social trust ➔trust in e-participation	Supported	Supported	Social trust affects citizens' trust in e-participation
H7: Trust in e-participation ➔ intention to engage	Supported	Supported	Trust plays a vital role in fostering the intention to engage in e-participation
H8: Family influence ➔subjective norms	Path removed	Not supported	There is no relationship with subjective norms
H9: Friends'influence➔subjective norms	Path removed	Not supported	There is no relationship with subjective norms
H10: Media influence ➔subjective norms	Path removed	Supported	Media is an important antecedent factor for subjective norms
H11: Subjective norms ➔ intention to engage	Supported	Supported	Subjective norms are a very important factor in fostering intention to engage in e-participation
H12: Web design ➔ intention to engage	Supported	Supported	Web design is a very important factor in fostering citizens' intention to engage in e-participation

6.5 Chapter Summary

In this chapter, an analysis of the qualitative data (focus group) was carried out to validate and confirm the findings of the quantitative data (survey) in the previous chapter. The findings of analysis of the responses from the focus group revealed that all the hypothesized relationships between constructs in the model were validated by the citizens' responses obtained from the focus group. In the next chapter, the findings from both the quantitative and qualitative studies are discussed to provide insightful guidance for government agencies to foster citizens' intention to engage in e-participation activities on e-government websites.

CHAPTER 7 DISCUSSIONAND CONCLUSION

The objective of this chapter is to present the research findings by answering the research questions. Firstly, this chapter begins by revisiting the research aim, questions and hypotheses. Secondly, the research findings are discussed. This is followed by the identification of the key contributions of this study and the implications for theory and practice. Finally, this chapter concludes by identifying the limitations of research and suggesting directions for future research.

7.1 Research Aim and Questions

The aim of this study was to investigate the underlying factors that influence the intention to engage in e-participation on e-government websites in Saudi Arabia. To meet this aim, this research answers the following main question:

What are the key factors that influence citizens' intention to engage in e-participation on e-government websites in Saudi Arabia?

This question is further divided into sub questions to describe the research context, as well as add depth to the understanding of e-participation engagement. The relevant sub-questions are:

1- How does citizens' attitude affect intention to engage in e-participation in the Saudi Arabian e-government context?
2- How does citizens' trust affect intention to engage in e-participation in the Saudi Arabian e-government context?
3- How do the citizens' subjective norms affect intention to engage in e-participation in the Saudi Arabian e-government context?
4- How does e-government website design affect citizens" intention to engage in e-participation in the Saudi Arabian e-government context?

On the basis of these research questions and following an extensive review of the literature, 12 hypotheses were developed. These hypotheses were quantitatively tested and qualitatively validated to determine the significance of the relationships that exist

between the intention to engage in e-participation and each of the following factors: trust, attitude, subjective norms and website design. In this chapter, both significant and non-significant findings are discussed. The discussion of the findings is organized with the list of the research questions and their associated hypotheses in the next section.

7.2 Findings

As indicated before, the main aim of this study is to identify the key factors that influence citizens' intention to engage in e-participation. Structural equation modelling was used to examine the research hypotheses to identify the relationships among the key factors of citizens' engagement in e-participation in Saudi context. The findings reveal that trust, attitude, subjective norms and web design have a significant influence on citizens' intention to engage in e-participation. The SEM findings were validated by focus group findings. The results of the quantitative and qualitative data analysis generated mixed findings for the research hypotheses. The findings are discussed below.

7.2.1 The Role of Citizens' Attitude towards E-participation

The first factor examined in this study in relation to citizens' intention to engage in e-participation is attitude. This section discusses the significant findings related to the following research sub question and hypotheses:

> **Subquestion1:** How does citizens' attitude affect intention to engage in e-participation in the Saudi Arabian e-government context?

H1: *Perceived usefulness has a significant positive effect on citizens' attitudes towards e-participation activities.*

H2: *Compatibility has a significant positive effect on citizens' attitudes towards e-participation activities.*

H3: *Citizens' attitude towards e-participation affects citizens' intention to engage in e-participation activities.*

The study found that attitude has a significant positive influence on citizens' intention to engage in e-participation activities. The SEM structural assessment supported Hypothesis H3. This means that attitude is a significant driver for citizens' engagement in e-

participation. Moreover, it revealed that a positive attitude is required before accepting or using an innovation, which in this case is e-participation (Nor and Pearson, 2008). The findings are consistent with similar studies that found a positive relationship between attitude and using e-government services (Taylor and Todd, 1995a, Wu and Chen, 2005, Hung et al., 2006, Alzahrani, 2011).

The study also found that attitude is shaped by two factors: perceived usefulness and compatibility. Therefore, the findings supported Hypothesis H1 & H2. Perceived usefulness is found to have a significant positive impact on citizens' attitudes towards e-participation. The results are consistent with previous researches (Taylor and Todd, 1995a; Alzahrani, 2011).The concept of perceived usefulness reflects the belief of citizens to what extent engaging in e-participation activities is beneficial. The perceptions of citizens about the usefulness of e-participation seem to be the most significant determinant of their attitude towards e-participation. The strength of the result is not surprising since e-participation has a wide range of benefits to both governments and citizens. E-participation enables citizens to express their voices to government. Citizens were able to recognise the benefits of e-participation and this may explain why perceived usefulness is the strongest determinant of attitude.

Additionally, the study found that compatibility is a significant predictor of citizens' attitudes towards e-participation. This result supported Hypothesis 2, which argued that compatibility has a significant positive effect on citizens' attitudes towards e-participation. Previous studies in the literature have found the same result of the correlation between attitude and intention (Taylor and Todd, 1995a, Hung et al. 2006, Alzahrani, 2011).It can be inferred that citizens are more likely to have a positive attitude towards e-participation activities if they view such activities as being compatible with their values and lifestyle. The findings also confirm that religious beliefs and Saudi values are compatible with the beneficial usage of e-participation.

The SEM structural assessment shows that perceived usefulness and compatibility are important predictors of citizens' attitude towards e-participation. The strong correlations between perceived usefulness, compatibility and attitude show that engaging in e-

participation requires a positive attitude. Citizens who have a positive attitude are more likely to engage in e-participation initiatives.

The focus group confirmed the findings of the SEM assessment. All of the participants agreed on that having a positive attitude is important for their intention to engage in e-participation. Moreover, the participants argued that their attitude is shaped by the perceived usefulness and compatibility of e-participation activities. Additionally, the respondents explained they would not hesitate to engage in e-participation if the services were useful and compatible with their beliefs and background. These results are also aligned with the literature (Alzahrani, 2011, Hung et al., 2006), where it is found that attitude has a positive influence in the context of citizens' use of e-government services.

7.2.2 The Role of Citizens' Trust in E-participation

The second factor examined in this study in relation to citizens' intention to engage in e-participation is trust. This section discusses the significant findings related to the following research sub question and hypotheses:

> **Subquestion2:** How does citizens' trust affect intention to engage in e-participation in the Saudi Arabian e-government context?

H4: *Trust in government has a significant positive effect on citizens' trust in e-participation activities.*

H5: *Trust in the Internet has a significant positive effect on citizens' trust in e-participation activities.*

H6: *Social trust has a significant positive effect on citizens' trust in e-participation activities.*

H7: *Citizens' trust in e-participation has a significant positive effect on citizens' intention to engage in e-participation activities.*

Citizens' trust in e-government services, and more particularly in e-participation, is identified in the literature as a determinant of acceptance (Scherer and Wimmer, 2014, Lee and Kim, 2014). The trust perceptions related to the Saudi context were included in

the research model for hypothesis testing. The survey and focus group assessment show that trust in government, trust in the Internet and social trust are significant factors that affect trust towards engaging in e-participation. These constructs have a positive significant effect on citizens' trust in e-participation in Saudi context. The order of significance of the factors that have a significant effect on trust in e-participation is trust in government, followed by social trust and then trust in the Internet. This means trust in the government is the most important factor to be associated with trust in e-participation towards the intention of citizens to engage in e-participation.

The findings from the SEM structural assessment show that there is a positive relationship between trust in government and trust in e-participation. This illustrates that Saudis who have trust in the government, feel a sense of collaboration with the government. Additionally, the positive relationship between trust in the Internet and trust in e-participation means that Saudi citizens who trust the Internet as a medium for conducting e-participation with government agencies, are more likely to have trust in e-participation activities offered on e-government websites. Furthermore, the positive relationship between social trust and trust in e-participation indicates that citizens' trust in others citizens who engaged in e-participation activities actively fosters their trust in such activities. The findings confirm that Saudi citizens' trust in e-participation positively affects their intended usage and occupies a central role in creating effective conversation between citizens and government for e-participation.

The focus group confirmed the findings generated from the quantitative analyses. All participants revealed that trust is a crucial factor in the intention to engage in e-participation in a Saudi context. The majority of the participants clearly mentioned that their tendency to trust in e-participation had a positive influence on their trust in e-participation.

These results are consistent with the literature (Carter and Weerakkody, 2008, Alsaghier et al., 2011, Reddick, 2011, Alzahrani, 2011, Lee and Kim, 2014), which highlight that citizens will be more confident to become part of consultative and participatory activities when they trust in such activities.

7.2.3 The Role of Subjective Norms in E-participation

The third factor examined in this study in relation to citizens' intention to engage in e-participation is subjective norms. This section discusses the significant findings related to the following research sub question and hypothesis:

> **Sub question 3:** How do the citizens' subjective norms affect intention to engage in e-participation in the Saudi Arabian e-government context?

H8: *Family influence has a positive effect on subjective norms.*
H9: *Friends'/colleagues' influence has a positive effect on subjective norms.*
H10: *media influence has a positive effect on subjective norms.*
H11: *Subjective norms have a significant positive effect on citizen's intention to engage in e-participation activities.*

The results reveal that there is a strong relationship between subjective norms and the intention to engage in e-participation activities. The SEM structural assessment supports Hypothesis H11. Surprisingly, subjective norms were found to be the most important predictor of citizens' intention to engage in e-participation. This means citizens are willing to engage in e-participation if their social norms are high towards e-participation. Our results are aligned with Al-hujran (2014), who found that subjective norms have a positive influence on citizens' usage of eDemocracy tools in Jordan. It was proposed that there are determinants for subjective norms; namely, family influence, friends'/colleagues' influence and media influence. However, the SEM structural assessment shows an insignificant relationship between family, friends'/colleagues', and media influences and subjective norms. Therefore, these sub factors were removed from the final model in order to improve the model fit of the structural model. However, the relationship between subjective norms and the intention to engage in e-participation is significant.

Findings from the focus group showed that all participants agree that Saudi culture has an active role in the lives of its citizens and engenders strong relationships among community members. Therefore, the relationship between subjective norms and intention to engage in e-participation is strong. This means that citizens' behaviour in a collectivist

culture such as Saudi Arabia is affected by social norms received from people who are considered important to them. However, while the participants did not highlight the influence from family and friend on their subjective norms, they all recognized the effect of media on subjective norms. It can be argued that different channels of the media such as TV, newspapers, social media and radio that are operated by governments are able to deliver reports and educate citizens about e-participation activities on e-government websites and hence affect citizens' perceptions about e-participation. The findings are consistent with the literature (Hung et al., 2006, Al Awadi and Morris, 2009, Alzahrani, 2011, Al-hujran, 2014).

7.2.4 The Role of Web Design in E-participation

The fourth factor examined in this study in relation to citizens' intention to engage in e-participation is web design. This section discusses the significant findings related to the following research question and hypothesis:

> **Sub question 4:** How does e-government website design affect citizens' intention to engage in e-participation in the Saudi Arabian e-government context?

H12: *Good Web design has a significant positive effect on citizens' intention to engage in E-participation activities.*

The findings show that e-government website design has the potential to determine the citizens' intention to engage in e-participation activates. This means well-designed e-government websites affect citizens' intention for e-participation activities. Statistically significant support shows a significant relationship between web design and intention to engage in e-participation which supports Hypothesis 12. This denotes that the design of e-government website has a positive impact on citizens' intention to engage in e-participation. It is evident that a well-designed e-government website delivers services that conform to citizens' expectations and fosters trust, which in turn enhances citizens' intention to use engage in e-participation (Chee-Wee et al., 2008).

Analysis of the focus group discussion also confirms that well designed e-government websites can enhance citizens' intention to engage in e-participation services. For example, all participants revealed that website design, including ease of navigation,

aesthetics and accessibility, has a positive effect on their satisfaction with e-participation adoption. This indicates that a well-designed e-government website has the potential to determine Saudi citizens' intention to engage in e-participation initiatives. These results are consistent with the literature (Kumar et al., 2007, Chee-Wee et al., 2008, Segovia et al., 2009, Alshehri et al., 2012, Alomari et al., 2012).

7.3 Citizens' Engagement in the E-participation Model

This study employed the structural equation modelling technique to evaluate the proposed model. The proposed model included nine independent and four dependent constructs. The study shows that the validated proposed model explains about 33% of the variance of the intention to engage in e-participation activities on e-government websites from citizens' perceptions. Consequently, the proposed model seems to have a desirable predictive power, which is consistent and comparable with previous results found in the literature. This reveals that this study succeeded in evaluating the proposed model in Saudi Arabia with respect to citizens' engagement in e-participation activities on e-government websites. The study shows that the key factors in the model – attitude, trust, subjective norm and web design – have a significant impact on citizens' intention to engage in e-participation activities on e-government websites in Saudi Arabia. Subjective norms have the strongest impact on intention, followed by trust, attitude and web design.

The findings of testing the determinants of attitude show that perceived usefulness and compatibility are considered as the main determinants of citizens' attitudes. These two antecedents of attitude explain 40% of the variation of attitude towards e-participation in the proposed model. Perceived usefulness is found in this study to have the most impact on attitude, followed by compatibility. This implies that the potential benefits of e-participation activities have a greater impact on citizens' attitude towards e-participation activities than the compatibility.

In terms of the predictors of subjective norms, the study suggests that subjective norms are formed by three predictors: the influence of family, friends/colleagues and the media. However, these three predictors were dropped from the proposed model because of the model fit during the evaluation of the structural model. The findings from the focus group

show that media does have an influence on subjective norms. This means that citizens are more influenced by external elements (the media) than internal elements (friends, family or colleagues). As the media is operated and managed by the government in Saudi Arabia, this suggests that Saudi citizens are waiting to see government's interest towards e-participation in order to get involved in such activities.

With respect to the trust factors, the study findings show that trust in e-participation is an essential element of engaging in e-participation activities. The findings of the evaluation of the trust factors reveal that trust in government has a significant impact on citizens' trust in e-participation. Citizens with more trust in the government are more willing to trust e-participation activities. Furthermore, the findings found that trust in the Internet has a significant influence on citizens' trust in e-participation. As citizens can interact with others over the e-participation activities, the findings show that social trust has significant influence on citizens' trust in e-participation. It implies that social trust (the disposition to trust) has a great impact on sharing opinions among citizens. The three antecedents of trust (trust in government, trust in the Internet and social trust) explain 31% of the variation of trust in e-participation in the proposed model.

Lastly, with respect to the web design factor, the findings show that the web design of e-government websites plays a vital role in attracting citizens to engage in e-participation activities. The study measured web design based on three key aspects: navigation, content and presentation style. E-government websites that are easy to navigate, have updated content and have attractive presentation encourage citizens to engage in e-participation activities.

In summary, it can be concluded that the key aspects of citizens' engagement in e-participation activities are four dependent factors (subjective norms, trust, attitude and web design) and the six independent factors (perceived usefulness, compatibility, trust in government, trust in the Internet, social trust and media influence). Table 7.1 shows a summary of the study findings.

Table 7.1: Summary of study's findings

Literature	Survey findings	Focus group findings	Impact
The literature shows that trust has a significant impact on the intention to use e-government services. The literature also identified trust in government, trust in the Internet and social trust as antecedent factors for trust in e-services (Reddick, 2011, Carter and Weerakkody, 2008, Lee and Kim, 2014, Scherer and Wimmer, 2014).	The SEM results show that trust in government (TGO), social trust (ST), and trust in the Internet (TIT) positively influence trust in e-participation (TRST) towards the intention to engage in e-participation (INT).	All participants emphasized the important role of trust on citizens' intention to engage in e-participation. Trust in the government is the participants' dominant criterion towards trust in e-participation. The majority of participants also cited as trust in the Internet and social trust as other strong reasons to trust e-participation.	The analysis of both survey and focus group results confirm that citizens' trust is very important and citizens' trust in government, Internet and in the social trust to engage in use of e-participation in Saudi Arabia. These findings are consistent with the literature.
Attitude is an important influencing factor on the intention to use e-services. The literature pointed out that perceived usefulness and compatibility are the important determinants of attitude towards e-service (Wu and Chen, 2005, Hung et al. 2006,Alzahrani, 2011, (Alomari et	The SEM results show that perceived usefulness (USF) and compatibility (COM) have a significant positive effect on citizens' attitude (ATT) towards e-participation and citizens' attitude (ATT) has a significant positive effect on intention to engage in e-participation (INT).	Many of respondents agreed that the usefulness and compatibility of e-government websites influences their attitude towards their intention to engage in e-participation. They also agreed on the importance of attitude towards e-participation	The analyses of both quantitative and qualitative results confirm that perceived usefulness and compatibility are important factors of citizens' attitude towards intention to engage in e-participation in the Saudi context. The results are consistent with the literature.

al., 2012)			
Previous studies reveal that subjective norms have a significant effect on intention behaviour to use the technology (McGrath et al., 2011, Al Awadi and Morris, 2009, Hung et al., 2006, Alzahrani, 2011, Al-hujran, 2014)	The SEM results show that subjective norms (SN) have a significant positive effect on citizens'intention to engage in e-participation (INT). The paths between family influence, friends'/colleagues' influence and media influence were dropped from the model.	All participants suggested recommendations to government agencies to employ the media and social media to educate citizens about e-participation and its benefits for both government and citizens. They agreed on the role of subjective norms on the intention to engage in e-participation.	It can be interpreted that subjective norms have a positive influence on citizens' intention to engage in e-participation activities on e-government websites in the Saudi context. Additionally, the media influence was found to be an important predictor for subjective norms. The findings are consistent with the literature.
Web design is one of the important factors that influence the intention to use e-services (Chee-Wee et al., 2008,Segovia et al., 2009, Alomari et al. 2012, Alshehri et al., 2012).	The SEM results show that website design (WD) has a significant positive effect on citizens'intention to engage in e-participation (INT).	All participants expressed their opinions that e-government website design, such as ease of navigation, increases their intention to engage in e-participation.	The analysis of both survey and focus group results confirms that well-designed e-government websites attract citizens' intention to engage in e-participation activities. The findings are consistent with the literature

By combining the findings from both survey and focus group, guidelines for government to foster citizens to engagement in e-participation activities on e-government websites

can be proposed. The guidelines represented below are based on the four main factors in this study.

- **Subjective norms:** Subjective norms are identified as the most influential factors on citizens' intention to engage in e-participation. Findings from the focus group revealed that citizens' decisions are influenced by social pressure received from others. The participants identified media as the most effect on their subjective norms towards e-participation. Therefore, government should use the media and social media as the means of encouraging citizens' participation. Additionally, using social networking and other media means to educate and encourage citizens towards e-participation.
- **Trust:** Trust is identified as an important and influential factor in both survey and focus group studies. Therefore, government should make effort to increase citizens' trust in e-participation. This might be done by using media and social media to express the government's interest in such services. In addition to this, government should have a clear vision and aim for providing e-participation on the e-government websites. Having this might build citizens' trust.
- **Attitude**: from the findings of both survey and focus group, attitude is identified as a fundamental element to engage in e-participation. Thus, education citizens about e-participation benefits for both government and citizens may assist government to Citizens need to see their inputs applied in the reality. Thus, government should provide citizens with updates in relation to decisions made based on their inputs. This might form a positive attitude about e-participation especially in a country with high power distance culture as in Saudi Arabia. Government can benefit from the growing usage of smart phones to increase the opportunities e-participation for citizens. Government might design an application in particular for e-participation activities and link it with e-government websites. This will help citizens to be connected and updated with e-participation activities. Using such applications might be compatible for citizens' life style.
- **Web Design**: government should design the e-government websites professionally to attract citizens to e-participation. In a country with low context culture as in Saudi Arabia, people prefer images and emotions rather than text.

Government may use such features in designing e-government websites. In addition to this, e-government websites need to be easily navigated and updated.

7.4 Research Contribution and Implications

The findings of the current study contribute to the understanding of the influencing factors on citizens' engagement in e-participation Saudi citizens' viewpoints. This research has made significant contributions to e-participation research and practice. The implications of the current study are presented below.

7.4.1 Theoretical Implications

The study has provided insights into the factors that influence citizens' engagement in e-participation in Saudi Arabia from the citizens' viewpoints. Thus, the current study has several theoretical implications. These are as follows:

- The main focus of this research was proposing a new model in an e-participation context. The literature review provided a comprehensive account of existing research in the e-government context where the main outcome showed a lack of consideration of the e-participation component. This study is the only known research study that proposes a model for e-participation.
- This study verifies the validity of the trust, attitude, web design and subjective norms factors in the e-participation context in Saudi Arabia, a developing country. These factors have only previously been primarily studied in an e-government context and developed countries context.
- The study provides both quantitative and qualitative evidence for the significant role of the key factors (attitude, trust, subjective norm and web design) on citizens' intention to engage in e-participation activities on e-government websites.
- This study specifically investigated e-participation in Saudi Arabia, a developing country whose government is attempting to improve e-participation in the country. As there is no research dedicated to exploring the influencing factors on e-participation in Saudi Arabia this research addressed a gap in the knowledge.

This study will be a foundation for understanding the drivers of citizens' engagement in e-participation in Saudi Arabia and other Middle East countries.

- The proposed model in the current study could be a reference point for future studies that could be conducted in order to further test the model. For example, the current study's model can be tested in other contexts. Additionally, the study model can be used as a guide for researchers in the research area of e-participation. This will support academic researchers in obtaining insights about factors that influence citizens' intention to engage in e-participation activities and hence managerial insights into how to manage and enhance citizens' engagement in e-participation.
- The current study contributes to the knowledge by providing a comprehensive theoretical model of e-participation usage. The research model was built based on previous research models and theories. Most of the factors in the model have rarely been empirically tested under the e-participation context.
- Empirically, this study contributes to validating a reliable and valid survey instrument of the various factors used in the proposed model in the e-participation context. Additionally, the various hypotheses supported in this study all add to the literature for developing hypotheses for future studies.
- The current study supports researchers in identifying research gaps in the e-participation field, including identifying the additional research needed in this field. This includes examining the influencing factors on citizens' engagement in e-participation in different environments, such as Western countries. Therefore, the current study assists to fill the gap in the area of e-participation adoption.

7.4.2 Practical Implications

Given the importance of widespread adoption for the success of e-government and the slower than expected growth of e-participation among Saudi Arabian citizens, there is a great need for more understanding of what factors are important in the adoption of e-participation. This study represents an early attempt to investigate these factors in Saudi Arabia. Moreover, the findings of this research have a number of significant implications

that may assist Saudi e-government officials and policymakers with important guidelines in understanding how different factors affect Saudi citizens' use of e-participation. These implications are discussed below.

This research sought to help Saudi government to provide more successful e-participation by identifying the key factors (such as trust, attitude, subjective norms and web design) in e-participation adoption.

The findings of this study can help the Saudi government evaluate the resources needed for successful e-participation adoption. These include offering ways to help e-participation to understand the prerequisites for launching the citizens' online presence and developing an interactive website. The results showed that well-designed e-government websites impact citizens' intention towards e-participation activities. For example, the E-Government Satisfaction Index (Freed and Berg, 2012) recommends seven features to attract more citizens to the active use of e-government website: the functionality and usefulness of the online features; content (the accuracy and quality of information); search (the quality of search results available); navigation (the organization of the site and options for navigation); look and feel (the visual appeal of the website); transparency of the information about what the government is doing; and website performance (speed, consistency, and error-free loading of webpages). The findings of this study are consistent with Freed and Berg (2012); therefore, the Saudi Arabian government could use these findings to improve e-participation and thus enhance citizen engagement.

Furthermore, citizens' attitude and trust is particularly relevant to Saudi culture, which is characterized by lack of trust and high power distance (Hofstede et al., 2010). These results show that trust in government has a more significant influence than trust in the Internet and social trust towards citizens' trust in e-participation. Therefore, the government should focus on building confidence among its citizens to encourage them to engage in e-participation services. For example, using information and communication technologies (ICT) are necessarily the key solutions for e-participation. Understanding the key factors identified in this study could affect the performance of the Saudi Arabian government because it will help government bodies to invest in IT technologies wisely

and prevent their failures. Actions could include the Saudi government investing effort and resources into improving the citizens' trust in Internet by implementing privacy and security policies.

Concerning the increase of social trust, the government should include the ability for citizens to have a personal profile to connect to the government. The personal profile should have the option to include the citizen's real name or a username/pseudonym. This would improve the personal experience and remove the anxiety caused by dealing with government bodies. The service should allow citizens to link their profile to other users, thereby creating a networked community. Functionality should be included in the platform to allow users to network via connecting profiles. Additionally, the findings show that Saudi citizens are willing to use e-participation if their social norms have a positive view towards e-participation. Therefore, e-government websites should make effective use of a range of the tools for e-participation, such as using social networking sites, blogs and online chat. These features could create a compelling platform to engage in e-participation.

7.5 Conclusion

The purpose of this research was to investigate the key factors that influence citizens' intention to engage in e-participation activities on Saudi e-government websites. Based on a literature review, a conceptual model was proposed. Data was then collected from Saudi citizens to find out their perceptions towards the intention to engage in e-participation.

A mixed-method research methodology was employed in this study. This incorporated both quantitative and qualitative research approaches. Firstly, a quantitative approach (a survey questionnaire) was applied to empirically test the relationships among the constructs of the proposed model. Then, a qualitative study (focus group) was used to validate the quantitative results and provide more insights into the relationships identified.

The analysis of the quantitative data set was conducted using a number of statistical techniques, such as basic descriptive analyses and multivariate, which are EFA, CFA, and

SEM using SPSS (Version 22.00) and Amos (Version 22.0) programs. The aim of quantitative analysis was done to test the conceptual model and hypotheses and to produce a final empirical model that best captured the interrelationships among the model constructs. Then, the second phase's qualitative approach (a focus group) was conducted to validate the survey findings.

The results of the survey suggest that the proposed model is strongly supported by the data. The results of the focus group reveal the various factors influencing citizens' intentions to engage in e-participation activities, thus supporting the hypotheses and consistent with the quantitative results. The results highlighted that subjective norms, trust, attitude and web design significantly influence on citizens' intention to engage in e-participation activities. Additionally, citizens' trust in e-participation is affected by their trust in government, trust in the Internet and social trust. The results also showed that citizens' attitude is formed by two main determinants: perceived usefulness and compatibility.

In conclusion, citizens' engagement in e-participation in a directive culture as Saudi culture depends on the government's efforts concerning and expectations of e-participation. Governments should make explicit their interests in offering e-participation activities. The government should use media and social media to educate citizens about the benefits of e-participation and encourage them to use such services. Taking this suggestion in consideration will also increase the citizens' trust in government. Citizens will have a high level of trust in such activities, if they see the government is interested in their inputs in e-participation. In developing countries as Saudi Arabia, the digital divide is high, thus citizens should be aware of their roles in e-participation and the benefits of e-participation. This will result in increasing their trust in both the government and e-participation. E-government websites are the main gate to government services. Thus, governments should make an effort to have usable and interactive websites.

In conclusion, it is found that the key aspects of citizens' engagement in e-participation are subjective norms, trust, attitude and web design. The findings of this study can be used by governments to make business strategies to increase citizens' intention towards e-participation activities on e-government websites.

7.6 Research Limitations and Future Research

In this study, every effort has been made to develop a complete research model, use reliable and valid measurement and analyse the data using robust statistical techniques. However, like any other research, this study has some limitations. The following points highlight the possible limitations of the current study:

- The current study has not taken into account the first level of e-participation, which is the e-information level. Thus, future research is encouraged to investigate e-participation according to its levels. Furthermore, as there are several online tools used for e-participation on e-government websites, the current study was unable to focus on a specific tool for e-participation.
- From a research methodological point of view, data collection was conducted in Saudi Arabia, which has its unique social and political characteristics. This could impact the generalisability of the study to other countries. Future studies could extend the sample and collect data from other counties to further validation of the research model.
- Further limitations involved conducting a focus group. A larger sample size would have been more useful to evaluate the dependability of the findings. Additionally, all the participants in the focus group were males. This is because of the restrictions on interaction with females in Saudi culture. Inclusion of females in the focus group would have provided more useful findings. In addition to this, one focus group was conducted because of the time limitation.
- In this study, sound judgment was made in identifying the factors for the research model. However, this research did not provide a comprehensive view of all factors that influence on citizens' intention to engage in e-participation. Future studies can use the others factors such as cultural factors and perceived risks that are also likely to influence e-participation.
- The findings of this study were derived from the empirical analysis of the survey data. However, this study was unable to test statistically the influence of family, friends and media on subjective norms. Nevertheless, the literature suggests the

importance of these three factors, which implies that the influence of family, friends/colleagues and the media influence subjective norms. Further research may be needed in order to test the influence of these factors on subjective norms. Additionally, the study results have not taken testing the control variables into consideration for the following control variables (which may provide different statistical results): gender, age, education level and e-government experience. Thus, further research is needed to examine the effects of these control variables.

- With regard to the research sample, there was a gender imbalance in the participants who completed the survey.

In future work, this research can be used to assist other countries with similar characteristics in an e-participation context. It is encouraged to expand the proposed model to other countries in the region, such as other Middle Eastern countries. Additionally, cultural factors are suggested for inclusion in further studies to examine the effect of the culture factor on the use of e-participation. For example, researchers may consider the moderation effect of culture on trust, attitude and subjective norms towards intention to engage in e-participation.

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APPENDIX

Appendix A The English survey version

English - United Kingdom ▼

Utilization of E-participation in Saudi Arabian E-government Websites

Dear Respondent,

This study is being conducted as a part for my PhD degree. The purpose of the study is to find out the perceptions of citizens towards e-participation in e-government websites in Saudi Arabia in order to find the influencing factors that affect their intention to use e-participation in e-government websites. E-participation refers to Using Information and Communication Technology (ICT) to enhance government–citizen interaction and to build an online community providing citizens with an opportunity to discuss related issues with others and with government agencies
I am interested in your opinion about e-participation in government websites in Saudi Arabia. The questionnaire should take no more than 15 minutes. The researcher believes that there is little or no risk associated with your participation in this questionnaire. Your responses will be kept completely confidential.
The results from this research will help us understand people's perceptions towards e-participation in Saudi e-government websites. Participation in this research is completely voluntary. You have the right to withdraw at anytime or refuse to participate entirely.
If you have concerns about the research that you think I or my supervisor can help you with, please feel free to contact me (us) on +61 2 9514 1912. Or via E-mail [redacted] OR Kyeong.Kang@uts.edu.au.

If you would like to talk to someone who is not connected with the research, you may contact the Research Ethics Officer on 02 9514 9772 or Dr. Muteb Alharthi (Phone number: +966552477665, E-mail: muteb1404@hotmail.com) and quote this number 2013000581.
If you are interested in participating in this study, please click the "Next" button at the bottom of the page,

Thank you in advance for assisting me with my research.
Abdullah Alharbi
University of Technology, Sydney
Australia

Please answer the following questions:

Gender :

- ○ Male
- ○ Female

Age :

- ○ Less than 20 years old
- ○ 20 – 29 years old
- ○ 30 – 39 years old
- ○ 40 – 49 years old

- ○ 50 and more years old

Education Level :

- ○ High School
- ○ College degree
- ○ Bachelor degree
- ○ Postgraduate degree

Nationality :

- ○ Saudi
- ○ Non-Saudi

How long have you been using the internet?

- ○ Never
- ○ Less than 12 months
- ○ One to less than 3 years
- ○ 3-5 years
- ○ More than 5 years

Have ever you used electronic government (e-government) websites?

- ○ Yes
- ○ No

.

?how long have you been using electronic government (e-government) websites

- ○ Less than six months
- ○ Less than 12 months
- ○ 1 - 3 Years
- ○ More than 3 years

?how often do you access e-government websites

- ○ A few times in Six months
- ○ About once a month
- ○ A few times a month
- ○ A few times a week
- ○ A few times a day
- ○ Once a day

What activities do you use e-government websites for? *you can tick more than one*

- ☐ Getting information

- [ ] Doing transaction service
- [ ] Proposing idea/ suggestions
- [ ] participating in discussion
- [ ] Contacting officials
- [ ] Other

.

This part of the survey measures your preceptions about E-participation on E-government websites in Saudi Arabia

please read each statement below and indicate to what extent you agree or disagree with each statement

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
electronic participation (e-participation) activities in e-government websites would enable me to interact with government agencies effectively	○	○	○	○	○
e-participation activities in e-government websites would enhance my effectiveness in interacting with government agencies	○	○	○	○	○
e-participation in e-government websites is a convenient way to interact with government agencies	○	○	○	○	○
e-participation in e-government websites would enhance the effectiveness in searching for and utilising government information	○	○	○	○	○
e-participation in e-government websites would give me a greater chance to express my opinion to the government agencies	○	○	○	○	○
e-participation in e-government websites would enable me to participate in decision-making	○	○	○	○	○
	Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
e-participation in e-government websites would be useful to participate in decisions	○	○	○	○	○
e-participation in e-government websites fits well with the way that I like to interact with government agencies	○	○	○	○	○
e-participation in e-government websites fits into my beliefs	○	○	○	○	○

e-participation in e-government websites is compatible with my religious aspects in decision-making	○	○	○	○	○
e-participation in e-government websites is compatible with my values in decision-making	○	○	○	○	○
e-participation in e-government websites is compatible with my needs to communicate with government agencies	○	○	○	○	○

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
using e-participation in e-government websites is a good idea	○	○	○	○	○
I like the idea of using e-participation in e-government websites	○	○	○	○	○
using e-participation in e-government websites is a pleasant experience	○	○	○	○	○
e-participation in e-government websites is an interesting idea	○	○	○	○	○

Based on your experiencing to use e-government websites, please read each statement below and indicate to what extent you agree or disagree with each statement

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The government agencies have the skills and expertise to provide e-participation in an expected manner	○	○	○	○	○
The government agencies have the ability to meet citizen needs	○	○	○	○	○
The government agencies can be trusted to participate in decisions faithfully	○	○	○	○	○
I think that the government agencies are truthful in consulting with me	○	○	○	○	○
	○	○	○	○	○
I trust that government agencies care about my opinions and suggestions	○	○	○	○	○
In my opinion, the government agencies are trustworthy	○	○	○	○	○
I think that I can trust the government agencies to provide interactive e-participation service	○	○	○	○	○

Based on your experiencing with internet, please read each statement below and indicate to what extent you agree or disagree with each statement

	Strongly				Strongly

	Agree	Agree	Neutral	Disagree	Disagree
The internet has enough safeguards to make me feel comfortable to use e-participation activities in e-government websites	○	○	○	○	○
I feel assured that legal and technological structures adequately protect me from problems on the Internet	○	○	○	○	○
I feel confident that encryption and other technological advances on the Internet make it safe for me to use the internet to communicate with government agencies	○	○	○	○	○
In general, the Internet is a robust and safe environment to interact with government and other citizens	○	○	○	○	○
Most citizens are reliable	○	○	○	○	○
Most citizens keep commitments	○	○	○	○	○
Most citizens are honest in their opinions	○	○	○	○	○
I would trust e-participation in e-government websites to express my opinion	○	○	○	○	○
I trust e-participation in e-government websites	○	○	○	○	○
I believe that e-participation in e-government websites is trustworthy	○	○	○	○	○

Based on your social life, please read each statement below and indicate to what extent you agree or disagree with each statement

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My family thinks that I should use e-participation in e-government websites to express my opinion	○	○	○	○	○
My family would think that using e-participation is a good idea	○	○	○	○	○
My family has influence on me to try out e-participation	○	○	○	○	○
My friends/colleagues would think that I should use e-participation in e-government websites to express my opinion	○	○	○	○	○
My friends/colleagues think that using e- participation is a good idea	○	○	○	○	○
My friends/colleagues have influence on me to try out e-participation	○	○	○	○	○
I read/saw news reports that using e- participation in e-					

government websites was a good way of expressing opinion/voice to government agencies	○	○	○	○	○
The popular press depicte a positive sentiment to engage in using e- participation in e-government websites	○	○	○	○	○
Mass media reports influence me to try out e- participation	○	○	○	○	○
People who influence me think would that I should use e-participation in e-government websites	○	○	○	○	○
People important to me would think that I should use e-participation in e-government websites	○	○	○	○	○
People whose opinions I value would prefer that I use e-participation in e-government websites	○	○	○	○	○
People who influence my decisions would think that I should use e-participation in e-government websites	○	○	○	○	○

Based on your experience in using e-government website, please read each statement below and indicate to what extent you agree or disagree with each statement

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
E-government websites have clear directions for navigating the website	○	○	○	○	○
E-government websites provide good navigation facilities to website's content	○	○	○	○	○
I can easily navigate e-government websites	○	○	○	○	○
E-government websites have well organized content	○	○	○	○	○
E-government websites have reliable and updated information	○	○	○	○	○
E-government websites provide simple and understandable information	○	○	○	○	○
The e-government website adequately meets my information needs	○	○	○	○	○
E-government websites have attractive presentation (color and images)	○	○	○	○	○
E-government websites have meaningful animations	○	○	○	○	○

Please state how strong your intention to use e-participation in e-government websites

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I intend to engage in e-participation activities on e-	○	○	○	○	○

government websites					
I would use e-participation provided in e-government websites to participate in decision making	○	○	○	○	○
Using E-participation is something that I would do	○	○	○	○	○
I would not hesitate to use e-participation in e-government websites to interact with government agencies	○	○	○	○	○

?Do you have any suggestions or comments

Appendix B The Arabic survey version

العربية ▼

استخدام المواطنين لخدمة المشاركة الالكترونية في المواقع الحكومية الالكترونية في السعودية

السلام عليكم و رحمة الله وبركاته ،،،

هذه الاستبيان يشكل جزء من بحثي لرسالة الدكتوراة عن استخدام خدمة و مبادرات المشاركة الالكترونية في المواقع الحكومية الالكترونية في المملكة العربية السعودية. الغرض من هذا الاستبيان هو معرفة تصورات المواطنين حول خدمة المشاركة الالكترونية في المواقع الحكومية الالكترونية و دراسة العوامل التي قد تؤثر على قرار المواطنين في استخدام هذه الخدمة.
يقصد بخدمة المشاركة الإلكترونية : استخدام تقنية المعلومات و الاتصالات لتحسين الشفافية و تفاعل الحكومة مع المواطن حيث تتيح هذه الخدمة مشاركة المواطن في صنع القرار، تحسين الخدمات ، الاستشارات و الإستفسارات و الوصول للمعلومات العامة.

مشاركتك في هذا الاستبيان مهمة لنجاح البحث لذلك أرجو المشاركة في هذا الاستبيان بالاجابة على جميع الاسئلة و بمصداقية تامة. لا تستغرق الاجابة على هذه الاستبيان اكثر من عشر دقائق. جميع الاجوبة لهذا الاستبيان سوف يتم التعامل معا بسرية تامة.

نتائج هذا البحث سوف تساعد الباحث في معرفة تصورات و مرئيات المواطنين السعوديين حول خدمة المشاركة الالكترونية في المواقع الحكومية الالكترونية في المملكة العربية السعودية. المشاركة في هذا الاستبيان تطوعية و لك الحق بعدم اكمال الاستبيان في اي وقت.

اذا لديك اي استفسار حول هذا البحث يمكنك التواصل معي او مع المشرف الاكاديمي على الرسالة اما اذا كنت تريد التواصل مع شخص خارج فريق البحث يمكن الاتصال بـ مكتب اخلاقيات البحث في جامعة التقنية، سيدني على التلفون 0061295149772 أو التواصل مع الدكتور متعب الحارثي من خلال البريد الإلكتروني muteb1404@hotmail.com واستخدام هذا الرقم الخاص بالبحث 2013000581

شكرا مقدماً على إبداء الرغبة بالمشاركة بهذا الاستبيان

طالب مرحلة الدكتوراة / عبدالله الحربي
University of Technology, Sydney
Australia
البريد الإلكتروني

المشرف على الرسالة
Dr. Kyeong Kang
البريد الإلكتروني
Kyeong.Kang@uts.edu.au

الأسئلة الديموغرافية

الرجاء الإجابة على الأسئلة العامة التالية. الاجابات على هذه الأسئلة سوف تستخدم للأغراض الإحصائية فقط وسوف تعامل بكل سرية.

الجنس :

- ذكر
- انثى

الفئة العمرية :

- اقل من 20 سنة
- 20 - 29 سنة
- 30 - 39 سنة
- 40 - 49 سنة

- 50 سنة و أكثر

المستوى التعليمي :

- ثانوية عامة
- دبلوم
- بكلوريوس
- دراسات عليا

الجنسية :

- سعودي
- غير سعودي

منذ متى تستخدم الإنترنت ؟

- ابدا لم استخدم الإنترنت
- اقل من 12 شهر
- من سنة الى اقل من 3 سنوات
- 3 - 5 سنوات
- اكثر من 5 سنوات

هل سبق ان استخدمت / زرت المواقع الحكومية الإلكترونية السعودية؟ بعض الامثلة للمواقع الحكومية (موقع وزارة التعالي العالي - بوابة وزارة الخدمة المدنية "جدارة" - بوابة وزارة العمل - بوابة وزارة الداخلية - أبشر - حافز - سفير - بوابة وزارة التجارة - إلخ) **هذه أمثلة وليست حصرا على هذه المواقع**

- نعم
- لا

منذ متى تستخدم المواقع الحكومية الإلكترونية في السعودية؟

- أقل من 6 اشهر
- اقل من 12 اشهر
- 1 - 3 سنوات
- أكثر من 3 سنوات

عادةً ، كم مرة تستخدم المواقع الحكومية الإلكترونية؟

- عدة مرات كل 6 أشهر
- مرة واحدة في الشهر
- عدة مرات في الشهر
- عدة مرات في الاسبوع
- عدة مرات في اليوم تقريبا
- مرة واحد في اليوم تقريبا

لأي غرض تستخدم المواقع الحكومية الالكترونية بشكل فعال ؟

- ☐ الحصول على المعلومات
- ☐ استخدام التعاملات الحكومية الالكترونية
- ☐ تقديم المقترحات و الافكار
- ☐ المشاركة في النقاشات
- ☐ التواصل مع المسؤولين
- ☐ اخرى

هذا الجزء من الاستبيان يقيس تصوراتك و توقعاتك حول خدمة المشاركة الالكترونية في المواقع الحكومية الالكترونية في السعودية.

الرجاء اختيار الاجابة المناسبة التي تعبر عن مدى موافقتك على كل عبارة من العبارات التالية

	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية يمكنني من التفاعل مع الجهات الحكومية بشكل فعال	○	○	○	○	○
استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية يحسن فاعليتي في التواصل مع الجهات الحكومية	○	○	○	○	○
خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية وسيلة مريحة للتفاعل مع الجهات الحكومية	○	○	○	○	○
المشاركة الإلكترونية في المواقع الحكومية الإلكترونية تحسن فاعلية البحث عن المعلومات الحكومية العامة	○	○	○	○	○
استخدام المشاركة الإلكترونية في المواقع الحكومية الإلكترونية يعطيني فرصة أكبر للتعبير عن رأيي للجهات الحكومية	○	○	○	○	○
استخدام المشاركة الإلكترونية في المواقع الحكومية الإلكترونية يمكنني من المشاركة في صنع القرار	○	○	○	○	○

	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية مفيدة	○	○	○	○	○
خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية تتناسب تماما مع الطريقة التي أفضلها في لتفاعل مع الجهات الحكومية	○	○	○	○	○
خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية تتوافق مع اعتقاداتي	○	○	○	○	○
خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية تتوافق مع التعاليم الدينية في صنع القرار	○	○	○	○	○
خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية متوافقة مع قيمي في صنع القرار	○	○	○	○	○
خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية متوافقة مع احتياجاتي في التواصل مع الجهات الحكومية	○	○	○	○	○

	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
استخدام المشاركة الإلكترونية في المواقع					

الحكومية الإلكترونية فكرة جيدة	○	○	○	○	○
أحبذ فكرة استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○
استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية تجربة ممتعة	○	○	○	○	○
خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية فكرة جديرة بالاهتمام	○	○	○	○	○

بناءا على خبرتك في استخدام المواقع الحكومية الإلكترونية ، الرجاء اختيار الاجابة المناسبة التي تعبر عن مدى موافقتك على كل عبارة من العبارات التالية

	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
الجهات الحكومية لديها المهارات والخبرات لتقديم خدمة المشاركة الإلكترونية بالطريقة المتوقعة	○	○	○	○	○
الجهات الحكومية لديها القدرة على تلبية احتياجات المواطنين من خلال تقديم خدمة المشاركة الإلكترونية	○	○	○	○	○
الجهات الحكومية يمكن الوثوق بها في المشاركة في القرارات بأمانة	○	○	○	○	○
الجهات الحكومية صادقة في إستشاراتها مع المواطنين من خلال خدمة المشاركة الإلكترونية	○	○	○	○	○
أثق في الجهات الحكومية في اخذ أرائي بالاعتبار	○	○	○	○	○
أثق بالجهات الحكومية بأنها تهتم بأرائي و مقترحاتي	○	○	○	○	○
في رأيي، الجهات الحكومية جديرة بالثقة	○	○	○	○	○
أعتقد أنني استطيع الثقة في الجهات الحكومية في تقديم خدمة المشاركة الإلكترونية بشكل فعال	○	○	○	○	○

بناءا على خبرتك في استخدام الإنترنت ، الرجاء اختيار الاجابة المناسبة التي تعبر عن مدى موافقتك على كل عبارة من العبارات التالية

	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
شبكة الإنترنت تحتوي على ضمانات كافية لتجعلني اشعر بالراحة لاستخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○
اشعر أن التشريعات القانونية والتجهيزات التقنية كافية لحمايتي من المشاكل الموجودة على الانترنت	○	○	○	○	○
أنا اشعر بالثقة بأن الأمن والتقدم التقني في الإنترنت جعلها أمنة لاستخدام الانترنت للتواصل مع الجهات الحكومية	○	○	○	○	○
بشكل عام، الإنترنت هو بيئة قوية وآمنة للتفاعل مع الحكومة و المواطنين الاخرين	○	○	○	○	○
معظم المواطنين جديرين بالثقة	○	○	○	○	○
معظم المواطنين يحافظون على الالتزامات	○	○	○	○	○
معظم المواطنين صادقين بارائهم	○	○	○	○	○
أثق في خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية للتعبير عن رأيي	○	○	○	○	○
أثق في خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○
أعتقد أن خدمة المشاركة الإلكترونية في المواقع الحكومة الإلكترونية هي جديرة بالثقة	○	○	○	○	○

الرجاء اختيار الاجابة المناسبة التي تعبر عن مدى موافقتك على كل عبارة من العبارات التالية

	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
أسرتي ترى أنه ينبغي أن أستخدم خدمة المشاركة الإلكترونية لإيصال أرائي	○	○	○	○	○
أسرتي ترى أن استخدام خدمة المشاركة الإلكترونية فكرة ممتازة	○	○	○	○	○
أسرتي تساهم في دفعي الى تجربة خدمة المشاركة الإلكترونية	○	○	○	○	○
زملائي/ اصدقائي يرون أنه ينبغي أن أستخدم خدمة المشاركة الإلكترونية لإيصال أرائي	○	○	○	○	○
زملائي/ اصدقائي يرون أن استخدام خدمة المشاركة الإلكترونية فكرة ممتازة	○	○	○	○	○
زملائي/ اصدقائي يساهمون في دفعي الى تجربة خدمة المشاركة الإلكترونية	○	○	○	○	○
قرأت أو شاهدت تقارير اخبارية بأن استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية تعتبر وسيلة جيدة لابداء الرأي للجهات الحكومية	○	○	○	○	○
تساهم الصحافة في تشكيل نظرة إيجابية حول استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○
وسائل الاعلام تساهم في دفعي الى تجربة خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○
الاشخاص الذين لهم تأثير في سلوكي يرون أنه ينبغي أن استخدم خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○
الاشخاص المهمون بالنسبة لي يرون أنه ينبغي أن استخدم خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○
الاشخاص الذين أقدر اراءهم يفضلون أن استخدم خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○
الاشخاص المؤثرين في قراراتي يرون أنه ينبغي أن استخدم خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○

بناءا على خبرتك في استخدام المواقع الحكومية الإلكترونية ، الرجاء اختيار الاجابة المناسبة التي تعبر عن مدى موافقتك على كل عبارة من العبارات التالية

	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
المواقع الحكومية الإلكترونية لديها تعليمات واضحة حول تصفح الموقع	○	○	○	○	○
المواقع الحكومية الإلكترونية تقدم وسائل جيدة لتصفح محتويات الموقع	○	○	○	○	○
أستطيع تصفح المواقع الحكومية الإلكترونية بكل سهولة	○	○	○	○	○
محتويات المواقع الحكومية الإلكترونية منظمة بشكل جيد	○	○	○	○	○
المواقع الحكومية الإلكترونية لديها معلومات موثوقة ومحدثة باستمرار	○	○	○	○	○
المواقع الحكومية الإلكترونية تقدم المعلومات باسلوب بسيط و مفهوم	○	○	○	○	○
المواقع الحكومية الإلكترونية تلبي بشكل كاف احتياجات المعلوماتية	○	○	○	○	○
المواقع الحكومية الإلكترونية تحتوي على ألوان و صور جذابة	○	○	○	○	○
المواقع الحكومية الإلكترونية تحتوي على رسوم متحركة و فلاشات مستخدمة بشكل جيد	○	○	○	○	○

الرجاء اختيار الاجابة المناسبة التي تعبر عن مدى موافقتك على كل عبارة من العبارات التالية

	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
أنا أنوي استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية	○	○	○	○	○
أرغب في استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية للمشاركة في صنع القرار	○	○	○	○	○
استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية شي أرغب بالقيام به	○	○	○	○	○
لن أتردد في استخدام خدمة المشاركة الإلكترونية في المواقع الحكومية الإلكترونية للتفاعل مع الجهات الحكومية	○	○	○	○	○

هل لديك اي ملاحظات ؟