University of **Salford** MANCHESTER

A STRATEGIC APPROACH TO THE IMPLEMENTATION AND ADOPTION OF AN E-GOVERNMENT SYSTEM FOR THE MINISTRY OF EDUCATION IN KUWAIT

A Thesis Submitted for the Degree of Doctor of Philosophy

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DECLARATION

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the thesis itself.

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ABSTRACT

E-government has recently fallen under the spotlight, having become a focus of government efforts in several countries around the world. The successful implementation of e-government is beset by many challenges such as social, political and technological considerations. All of these need to be given due care and attention for e-government to be successfully developed. Furthermore, in terms of adoption and uptake, e-government services still have some way to go, before it can be generally accepted in the public domain as a tool for accessing online services; this is clear given this technology is still in its embryonic stages.

In addition, most of the previous studies have sought to understand the issues pertaining to implementation and adoption, however these studies have examined each factor in isolation respectively. And a small amount of research studies has focused on the factors which can impact e-government implementation and adoption using well-founded theoretical models or structures.

In order to discuss and consider this technology, this thesis will present a conceptual framework based on two models, namely the Unified Theory of Acceptance and Use of Technology (UTAUT) (adoption) and Institutional Theory (implementation) models respectively. A great deal of modern processing and analysis techniques have been used to determine the key factors that affect the implementation and acceptance of e-government services (G2E) in the MoE. The research aims will be achieved using a multi-method approach which consists of qualitative (interviews) and quantitative (survey) methods to investigate practices and experiences of adopting and implementing e-government systems in Kuwait's MoE.

This thesis concludes with a summary of the contribution made by this work, its limitations and guidelines for future research. For the above discussion, the research presents a conceptual model from two models, Unified Theory of Acceptance and Use of Technology (UTAUT) model (adoption) and Institutional Theory (implementation). A great deal of modern processing and analysis techniques used to determine the key factors that affect the implementation and acceptance of e-government services (G2E) in the ministry of education. To achieve the research aims a multi-method was adopted, qualitative (interviews) and quantitative (survey) methods to investigate practices and experiences of adopting and implementing e-government systems in the ministry of education in Kuwait.

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CHAPTER 1.

INTRODUCTION

This chapter presents an introduction to the proposed research. The following section provides an overview of e-government. Section 1.3 defines the research aim, while Section 1.4 states the objectives of this thesis. Section 1.5 offers the context of this study.

1.1 Introduction

The internet has become ubiquitous. In the past, it was used for educational and informational purposes but now its applications can facilitate tasks in our daily lives. As people became more aware of the opportunities the internet presents and sought to experience electronic services, they began to expect the same high standards for services they received from government agencies. Since the 1990s, ICT has played an important role in incrementally changing and shifting traditional and bureaucratic government models into the current e-government model, which delivers services according to customers' needs. Therefore, it has become clear that a global shift towards electronic government (e-government) is taking place, rapidly introducing changes to traditional service delivery. There are many motivations behind the implementation of the e-government system. Some of the principal reasons have been suggested by Alharbi (2016), and include decreasing corruption in administration, increasing efficiency, reducing costs, increasing transparency, providing better services to stakeholders, and increasing equality among citizens. Therefore, e-government can be a solution for many issues facing the progression of developing and developed countries.

E-government applications have rapidly emerged in the developing world. They have received worldwide attention, as they can make governments more effective and efficient, and thus transform relationships with citizens, businesses, and government departments (Heeks and Bailur, 2007; Walsham and Sahay, 2005). They can also increase the perceived quality of public services, which has been shown to have a positive effect on trust in society (Gracia and Arino, 2015). E-government can be defined in a different way depending on the researcher's context and objective. For this study, e-government is defined as an administrative system in which government offices fully use modern technologies—including information, network, and office automation technologies—to handle formal affairs and provide public services for society (Liang, 2012). As well as the delineation, e-government can be classified into different types, such as Government-to-Citizens (G2C), Government-to-Business (G2B), Government-to-Government (G2G), and Government-to-Employee (G2E). Most researchers refer only to G2C, G2B, and G2G without considering G2E, or they consider G2E as being part of the G2G

classification. In addition, many governments still have not developed G2E services, which are certainly needed to improve the bureaucracy with respect to day-to-day functions and to deal with employees. The G2E solution is about empowering employees to help citizens in the speediest and most suitable way, accelerating managerial procedures, and enhancing administrative arrangements.

Several benefits are related to e-government, as mentioned by Alsaif (2014). These include decreased corruption and increased transparency in administration, which has the potential to enhance government services' overall effectiveness and efficiency. Additionally, G2E offers other various benefits such as a higher potential to share access to comparable data, provide real-time information and efficient retrieval of data when dealing with information requests, enable the fast redirection of common enquiries and information requests for relevant answers, and facilitate an improved system providing a more balanced workflow and better information retrieval, thereby improving staff satisfaction and retention (UN/ASPA, 2001).

Some uncertainty exists in the literature with respect to the concepts of implementation, diffusion, and adoption because e-government is still maturing (Alharbi, 2016; AlSharef, 2014) and the stakeholders require further analysis (Scholl, et al., 2007). Therefore, outlined below are simple definitions of the most common terms used.

Implementation: This is the first step in the e-government project. The process focuses on developing e-government, such as identifying the requirements, responsibilities, and challenges facing the development process. According to Kwon and Zmud (1987), implementation is the process of development, installation, and maintenance.

Adoption: The terminology here is unambiguous; it is the study of whether to adopt or reject something. E-government adoption studies are concerned with how customers accept the use of a project. According to Rogers (1995), the innovation-decision process is intended to decide whether to fully use an innovation or reject its adoption.

E-government currently faces more challenges than its espoused benefits. Many e-government systems have failed in both developed and developing countries. Moreover, any e-government project will not be successful if stakeholders do not accept it. User acceptance is the main condition for the success of any IT project (Alateyah, et al., 2013). Since the concept of e-

government has become known, many studies have explored the challenges that influence egovernment adoption and implementation in numerous contexts. While these studies outline the most prominent adoption theories and various frameworks and models for understanding that adoption, studies by independent research organisations have introduced statistics regarding the good and bad practice of service delivery. However, no investigations have endeavoured to thoroughly examine the link between service delivery and usage. Frequently, stakeholders' discernment and desires differ from the service provider's in terms of ease of use, awareness, efficiency, security, trust, legislation, availability, and accessibility. Moreover, the evaluation methods and standards currently used for measuring the service users' (employees') perception usually differ from those that measure the service providers' (government agency's) view of what constitutes a best practice. This study argues that the above foundation has widened an increasing gap between e-government adoption and implementation, creating less-than-satisfactory adoption rates and resulting in a lack of understanding and poor return on investment for the government. Few of the e-government research studies take a holistic view of implementation and acceptance, nor do they offer guidelines for assessing users' (employees') expectations against those of the service providers (government) in terms of what constitutes good practice in awareness, efficiency, usability, security, availability, accessibility etc. of a given e-government service. Although some research has sought to develop stakeholders' satisfaction frameworks for e-government (Carter and Weerakkody, 2008), these models do not suggest a methodical process that can be used to assess stakeholders' (employees') fulfilment and the expectations of e-government services against government perception. Moreover, several researchers have focused on discovering the adoption or the implementation processes of e-government at local levels. Furthermore, only a few researchers have discovered the factors that can influence e-government implementation using justifiable theoretical models. Additionally, most current studies concentrate on either the adoption framework or implementation framework separately. Rarely do studies, it seems take a holistic view of both implementation and adoption.

In addition, an e-government system must understand the planned benefits to employees, what challenges must be overcome, and the level of institutional change that must take place for it to be successful in a given context (Hazlett and Hill, 2003). While many developed countries have created successful strategies and overcome challenges to develop the e-government concept (Jones, et al., 2007), developing countries such as Kuwait, which are looking to follow the same path as that of their illustrious counterparts, must learn more about this context if they wish to achieve similar results. Very little research has been conducted to examine the reasons

for such a lack of progress since the start of the e-government project in Kuwait in 2005. Moreover, very little published literature (apart from UN reports) identifies the issues hindering e-government efforts in Kuwait. Therefore, if the expectation of the government is for employees to go online, the government must make a concerted effort itself and take the lead by going online. The Kuwaiti government and the Ministry of Education, as the focuses of this study, must improve their online services.

1.2 Research Problem

Kuwait, as a developing country, recognised the importance of the internet and is quite aware of the need to transform its IT infrastructure and make efforts to avoid being left behind in the internet age. To that end, Kuwait's government has cut through bureaucracy and moved towards the implementation of an e-government project (Shuhaibar, 2005). Kuwait is considered one of the first countries in the Gulf region to decide to enter the era of e-government. It has developed many e-government projects and cooperated with other countries. However, many of these projects have failed or not even been used.

The main government department in many countries, especially Gulf countries, is the Ministry of Education (MoE). The MoE is responsible for educational matters, the development of human resources, and the country's educational system (Alkali, 2012). It is the central body that controls and manages all schools in Kuwait starting from kindergarten (nursery) and progressing through to the primary, secondary, and high school levels.

Over time, an increase in the number of citizens and their needs has led to a corresponding increase in many issues, all of which have been directed to the various ministries in Kuwait. Kuwait's population has grown 3.2 percent compared to official figures from the registrar at the end of 2015 (Altai, 2014). This significant increase has led to many problems, some of which will be mentioned later. Algometry (2010, p.12) describes the current situation in the ministry of education as "a bribe, rampant corruption, spread medium to pass transaction, irregularities, and abuses in bulk, queues, and congestion."

In addition, employers have been beset by difficulties such as a slow economic recovery, complicated procedures, and the loss of and changes in official documents (Suleiman, 2010). Moreover, transactions are very slow because Kuwaiti ministries use an old mail system. While most Gulf countries have shifted toward electronic government, Kuwait still uses an old mail method for transferring documents. When rampant nepotism, which apparently exists in most government departments throughout the country is added to this, a more precise picture begins to emerge of why employees' affairs are not being dealt with in a meritocratic, systematic manner. This issue has led to administrative corruption in many governmental departments throughout Kuwait (Alwaten, 2010).

Furthermore, this problematic situation has been exacerbated by staff in the MoE who have failed to deal equitably with the public and have not followed a sequence regarding the completion of documents and paperwork, favouring and preferring some people over others (Al-Qabes, 2009). This problem is further aggravated by the shortage of buildings and departments for these sectors (Alnour, 2013). Some have argued that the real gap is a lack of transparency in the mechanism of action. To remedy this, some have suggested that ministries put an end to the deteriorating situation, i.e., blockages in work and the chaos that exists in all ministry departments (Alnemash, 2009).

Kuwait has a population of 3,479,371, of whom 3,022,010 are internet users (Internet World Stats, 2016). However, this figure is not truly representative of those who use the internet for e-government. Not everyone who uses the internet does so to access government services (Al-Adawi, et al., 2005). Kuwait's e-government development index (as of 2016) was between 0.50 and 0.75, which does not represent a solid performance in the wider context when one considers that this performance places it 40th amongst Asian countries (UN, 2010). The adoption and use of online government services are of special significance for developing countries which may face a shortage of resources, as online services increase accessibility and create time and cost savings for stakeholders. The factors that determine a country's level of use of online government services may include having a high per capita gross domestic product (GDP), being more competitive, being in a less restricted ICT environment, spending more money on ICT, and having better access to the Internet (Al-Adawi, et al., 2005).

Despite these factors, some or even all of which may apply to Kuwait, most ministries in Kuwait have started providing e-government services. The MoE has made slow progress in its e-government drive, which in turn has led to some issues. This is assessed in terms of a country's e-readiness and how well-prepared a nation is for the implementation and adoption of e-government. In this sense, perhaps one could surmise that Kuwait's MoE is not at the optimal stage yet, and therefore must activate the role of e-government more efficiently, aiming to find the best way to make the current system more efficient. In general, Kuwait's government, especially its ministries, are mired in inefficiency—that is, bureaucracy in the aforementioned pejorative sense. This calls for a better practice to improve governance, which can lead to the enhancement of work between the employee and the government.

Recognising the challenges MoE employees face and the benefits of G2E services to government, employees, and citizens, one can see that e-government to employee (G2E) services for the MoE is necessary to: deliver integrated services; achieve gains in efficiency and effectiveness through the better use of data, information, or technology; or generally increase departmental capability or performance. This will help the government staff communicate with each other efficiently.

Given the above observations regarding ICT and e-governance, the primary focus of this research is to help create a conceptual framework which will analyse and consider the extent of employee adopting e-government services in Kuwait as compared to the efforts the government is making to implement e-government within the MoE. Researcher hoped that this research will help bridge a gap in existing e-government research in the areas of implementation and adoption.

The next section will describe the aim and objectives of this thesis. An outline of the thesis and the chapter summary will follow.

1.3 Research Aim

To develop a framework for the implementation and adoption of an employee-oriented egovernment system within the Ministry of Education employee in Kuwait.

1.4 Research Objectives

To accomplish this aim, five essential objectives will help create an understanding of the egovernment phenomenon, particularly government-to-employee relations. These objectives are listed below:

1. To critically review the current state of e-government in general, and with respect to the Ministry of

2. Education in Kuwait in particular.

3. To formulate a conceptual framework that identifies and captures the salient factors influencing e-government implementation and adoption, and to offer a theoretical context that explains these factors.

4. To explore the factors that influence the implementation of e-government in the Ministry of Education.

5. To identify and evaluate the challenges and factors that affect the adoption of egovernment services in the Ministry of Education from employees' perspectives.

6. To develop and validate the e-government implementation and adoption framework for the Ministry of Education

1.5 Scope of the Study

This research focuses on the implementation and adoption of an e-government system within the Ministry of Education in Kuwait. Further, it evaluates the e-government services from the employee perspective (G2E).

1.6 Research Approach

The research approach in this thesis was follow the methodology that has been described by Phillips and Pugh (2000) for conducting PhD research and consists of four steps, the background theory, focal theory, data theory, and novel contribution (Pugh, 2000). The background state the problem finding from the literature review which will be discussed in chapter 2. Focal theory in chapter three focus on developing a conceptual model. The next stage is the data theory which deals with the problems such as developing and identifying a suitable research strategy, identifying an appropriate research method, and developing a research protocol which was covered in chapter four. The data theory deals with the process of collecting and analysing data as showen in chapter five and six. The last stage shown in chapter seven and eight is the novel contribution that represents the results of the research.

1.7 Contribution to Knowledge

This research presents a great number of contributions to the field of e-government. The first one is to build a model that can inform e-government implementation and adoption in the ministry of education in Kuwait as example of a developing country. In addition to this, the research will focus on determine the gaps that exist between governments' efforts to implement e-government and employee expectations for adoption and use. Also, the conceptual model proposed in this research in Chapters 3 and 7 will empower e-government implementers and practices to identify the key issues, such as: a) it builds upon previous research on Information systems and technology (IS/IT), b) it explains possible problems that can affect their adoption and implementation , and c) studies how these problems could be treated in practice. Furthermore, it categorizes the main political, social, and technological themes and related challenges that might effect e-government adoption and implementation, and supports other research findings related to their influence on the process of adoption and implementation.

1.8 Thesis Structure

This section provides a brief outline of the chapters included in the thesis:

Chapter 1 - Introduction

This chapter begins with a description of the background of the research and a rationale for investigating e-government. It also identifies the research questions, aim, and objectives, and provides an overall structure for the thesis.

Chapter 2 - Literature Review

This chapter examines the current body of literature on e-government systems. It covers the ideology of government by providing a philosophical explanation of the role of government as a process, provider, partner, product, and protector of the public and private sectors. It also explores and discusses the definition, concept, and typologies of e-government by identifying and exploring the different types of e-government services (G2C, G2B, and G2G). Furthermore, it highlights their benefits and the challenges that successful adoption of e-government poses.

Chapter 3 - Conceptual Framework

This chapter analyses and discusses the key challenges, found in the literature, which might influence e-government implementation and places them into one of three classifications—technological, political, and social—based on institutional theory. In addition, it proposes a primary conceptual model for e-government based on the government's perspective of implementation and associated challenges facing implementation. This chapter also discusses e-government and, more broadly, technology adoption from the employees' viewpoint, including their behavioural and usage expectations. To do this, the unified theory of acceptance and use of technology (UTAUT) is used as the theoretical basis. Finally, this chapter combines the e-government implementation and adoption perspectives by proposing a conceptual model that captures the government's and employees' standpoints.

Chapter 4 - Methodology

This section presents the philosophical assumptions, research strategy, and design employed in this research study. This involves briefly reviewing the available methodologies and selecting the most appropriate one for this study. The section begins by describing and discussing the philosophical assumptions and paradigms in social science and information systems. It then describes the appropriate research approaches and strategies. It also provides a rationale and justification for the chosen methodologies followed by a discussion of the research design and processes, including data collection and data analysis. It closes by reporting the findings.

Chapter 5 – Qualitative Findings

This section describes how the quantitative findings led to the development of the qualitative component of the research. It provides a descriptive analysis of the practices of the case study site in terms of e-government implementation and the challenges that the implementation

faced. Moreover, it explores the current use of e-government in the MoE and the primary challenges it faces.

Chapter 6 - Quantitative Findings

This chapter presents an interpretative analysis of the case study. It discusses and analyses the survey findings with regard to e-government adoption from the perspective of a MoE employee in light of the conceptual model proposed in Chapter 3 and the e-government literature in Chapter 2.

Chapter 7 - Discussion

This chapter presents a holistic and systematic discussion of the findings of this research and the current literature surrounding e-government. This chapter revisits the proposed conceptual model presented in Chapter 3 and revises it based on the empirical findings in Chapters 5 and 6. The chapter also validates this framework in terms of the employee viewpoint.

Chapter 8 - Conclusion

The final chapter of the study summarises the research contributions and limitations of the research. It also highlights future research opportunities.

CHAPTER 2.

LITERATURE REVIEW

The aim of this chapter is to review the earlier work regarding e-government and provide vital background knowledge on the research subject. As presented in section 2.2.1, this provides definitions of e-government, e-readiness and e-services. Section 2.2.2 gives an overview of the different types of e-government which include: G2C, G2B, G2E, and G2G. Section 2.2.3 presents several benefits of e-government implementation, whilst section 2.2.4 discusses the main challenges to e-government implementation from different aspects. A background of Kuwait and its e-government is presented in Section 2.3, with a final summary concluding this chapter in Section 2.4.

2.1 Government

Before considering the topic of e-government, its elements and how they contribute towards the functioning of e-government, it is necessary to start by providing an overview of traditional government, positioned as the foundation of this inquiry. While e-government provides the capability for a full re-writing of government processes, the basic functions of government remain. It is merely the systems by which these functions are delivered to citizens and constituents that changes under the purview of e-government. The government retains its position as the governing body of a nation, comprising multiple levels of governmental and legislative power.

2.1.1 Meaning of Government

The term government can conjure up a range of ideas to people throughout the world, however one can infer that some basic foundational or core principles exist in most governments throughout the world. A government is viewed as an authority which governs and has a control over different functions and departments within a region or territory. And it is an institution which governs, frames policies, and takes care of the people residing within the territory (Pardo, 2000). It also can be defined as an institution that initiates and enforces policies for and on a particular society (David, 2011). Moreover, it is a system of law – people and officials that form collectively and administrate any specific political boundary (DFID, 2005). Governmental policies are measures that a government will look to implement so as to enhance its involvement in societal matters (Campagna, 2012). There are many different types of governments, all of which essentially oversee the rules and regulations of a given state. For instance, governments can take the form of democracies, republics, monarchies, and so forth. Every government has three types of powers, which are: executive, judicial, and legislative. The former refers to the power of government to implement, control and enforce any particular law; the next authorises the government to make and implement laws, as well as public policies; and the latter refers to power which authorises the government to evaluate laws and societal issues arising within the jurisdiction (Reddick, 2012). Therefore, one could define the government as a group of people that rule a society or community and administer public policy and autonomous power through customs and laws within the state.

The arrangement of government in developed countries is quite different to that of developing countries. The US government for example, is a complex structure of different authorities. The US government has two houses with an unequal number of representatives in each, and there are also state governments that individually own houses that have a number of representatives (Keman, 1997; 2002). Each of these local state governments communicates with the federal government of the US in a different way. This structure also includes a number of municipal and local governments organised in a hierarchical structure (Lake and Baum, 2001). This system of governing can be seen in the US, Mexico, Canada and other nations.

The abovementioned structure is also similar to the one found in the European Parliament. A number of European government bodies work on parliamentary systems. For example, the UK uses the parliamentary system as a constitutional monarchy and the official heads of state— Queen or Kind—have no power. The parliament of England consists of two chambers, and the House of Lords also has no political power in real terms as the members in the House of Lords are not elected (Levitsky, 2005). The British House of Commons holds all governing powers and deals with the setting and management of laws and regulations. Additionally, the head of a party with the most sitting members serves as the prime minister and deals with the cabinet of party colleagues (DFID, 2005; 2006a). Many other European countries have the same parliamentary system, both in terms of the constitution as well as the monarchy (Blonde, 1982; 1990).

The structure and function of government in developed countries is more complex than in developing countries. These countries make a division in the regime and government as well as their practical implications. In the Middle East, most countries follow an authoritarian system whereby the parliament is democratically elected and the executive branch is the royal family monarchy.

In most Middle Eastern counties, the prime minister is the legislative authority. However, Kuwait stands as an exception as the chairman of parliament and the president are the legislative authority (Helen Ziegler and Associates, 2016). Legislative authority is also composed of democratically elected members, the prime minister and the cabinet of about 15 ministers. The chairman of parliament in Kuwait is the most powerful political leader. In addition, the prime minister is appointed by the president in the formation of a government

(Alwaten, 2010). The executive branch includes the president, the vice-president, the prime minister and the cabinet of ministers. Members of the appointed executive branch also participate in legislation. It is said that including the government in the legislation process decreases the power of the parliament and ensures the survival of the monarchy (Yolcu, 2013).

Government in developing countries clearly differs from those of the developed countries. The Middle Eastern countries (with the exception of Kuwait) are run by authoritarian systems where the elected members of the government work in collaboration with the monarchy. The prime minister in Middle Eastern countries is the legislative authority but he is appointed by the president. There is also a cabinet that controls the institutions of the government. The prime minister and his ministers are held accountable by the president and the parliament.

Internally, government is expected to provide services to its citizens (G2C), businesses (G2B) and employees (G2E). It is necessary to consider its dynamic interrelation with the citizens, businesses and employees it serves. When considering the G2C relationship, this works best if both parties are happy with each other (Abdullah, 2008). If the citizens are unhappy with the functioning of the government, it leads to negative support of the political system (Miller, 1974). Similarly, if the government finds fault with the citizens, it can take appropriate punitive measures against those that have deemed to err. It can therefore be said that citizens and government are inextricably linked. The decision-making process of the government is supposed to work in such a manner that the larger interest of citizens' welfare is served. This decision-making process works when the government takes the citizens input and incorporates it into decision-making and later on provides citizens with the outcomes of these particular issues (UN, 2005). As we move ahead in the 21st century, we find a marked shift in the manner in which citizens around the world have started expressing themselves on a variety of matters related to governance. Such proactive inputs help the government in making more thoughtful decisions (UN, 2005).

Therefore, government need to think of ways in which to change or improve its relationship with the society. This will have the effect of making society more satisfied and will also help government cope with its own advancement. The next section will focus on how information technology is used in government.

2.1.2 Use of Information and Communication Technology (ICT) in Government

Information and Communication Technology (ICT) has the potential to change traditional bureaucratic government features, and can bring reform along with the redistribution of powers, roles and responsibilities. ICT also has potential to control government organizations (West 2004, p. 15). The nature of ICT means that it improves collaboration among government employees, so as to give them the ability to serve society with more efficiency, responsiveness and flexibility (Jain, 2004). ICT also supports and provides for the free exchange of ideas, views, discussions and documents among individuals and teams across departments and organizations, which enhances team work and collaboration.

The internet plays a vital role in this free flow of ideas as it is an open and easily accessible system that facilitates communication and cooperation from individual to individual, and indeed within organisations as well. The use of the electronic bulletin board for the cross-fertilisation of ideas and problem solving by government officials is one such example of this phenomenon. The same collaboration, cooperation and communication is widely used for the joining of governmental parts, businesses, suppliers and users of public services (Mclvor, McHugh and Cadden, 2002). For example, the British government used the procedure of ICT use for conjoining the different parts of its government to achieve convenient and efficient communication (Blair and Cunningham, 1999). ICT adoption, along with rapid changes of commercial activities like e-commerce, has raised the expectations of citizens in matters of efficiency (Ebrahim and Irani, 2005; Silcock, 2001). It has also enabled government to transform toward e-government by using the internet as a central platform, fundamental in the strategy to meet public-sector challenges and expectations (Ebrahim and Irani, 2005; Gunter, 2006).

Using technology in this manner means that public service delivery can be shifted from traditional bureaucratic government to e-government and ICT will function as the means of delivering these public services (Ho, 2002). Ho goes on to explain that bureaucratic government uses an agency-centric approach, which focuses on functional rationality, hierarchical control, departmentalisation, internal productions' cost efficiency and management based on rules. In contrast, e-government uses a customer-centric approach, focusing on user satisfaction rather than efficient production, and providing service flexibility

and internal and external network management among parties. E-government also permits continuous government reinvention by organizational learning, entrepreneurship and innovation. In e-government, services may be modified in line with personal preferences and requirements. Similarly, organizational rules are also changed as bureaucratic government emphasises hierarchical communication and top-down management, while e-government stresses the importance of teamwork, direct communication, multi-directional networks and fast feedbacks. E-government leadership supports collaboration, cooperation and mutual facilitation and reciprocity, rather than restricted hierarchical command control in bureaucratic government leadership.

As one can see, information technology has many potential benefits with the government. The next section considers e-government in more detail, which is one of the systems that relies on the use of information technology for the day-to-day functioning of government.

2.2 E-government

This research is concerned with the development of an e-government system through which to facilitate greater communication within the MoE in Kuwait. One of the objectives of the research is to critically assess and evaluate the key e-government strategy and design elements influencing the implementation and adoption of e-government. As such, it is important to provide a comprehensive review of e-government and the existing literature on the subject, for it is this field of research to which this study hopes to make a contribution.

2.2.1 Definition of e-government

There are many conceptual and normative definitions of e-government. Just as the general concept of government carries different definitions through different perspectives, the same can be said about e-government. There are different approaches and perspectives in defining e-government which can be divided into: technological, managerial, and political. Moon and Norris (2005, p. 43) define e-government as, "a means of delivering government information and service". In brief, e-government has been defined as ICT and internet accessibility for the improvement of an existent governmental system. However, in the broader view, it is a re-

engineering process and systemic reformation of government. The concept of e-government came to prominence in the early 1990s, due to the proliferation of new technologies known as 'the information age' (Ho, 2002). E-government is multifaceted, and involves information communication technology being used for the improvement of governmental efficiency, transparency, effectiveness and responsibility (Kraemer and King, 2003; World Bank, 2004).

Jeong (2012, P.87) states that "e-government involves the use of ICT for refining and improvement of delivery of information and services". E-government does not simply use the internet. It also uses other digital communications channels such as television, radio, CCTV cameras, CCTV tracking, RFID, MMS, SMS and Bluetooth (Gil-Garcia, 2012). Some of the salient features and characteristics of e-government are as follows:

- Dimensions of e-government implementation are Government-to-Government (G2G), Government-to-Citizen (G2C), Citizen-to-Government (C2G), Government-to-Employee (G2E), Government-to-Business (G2B) and Business-to-Government (B2G).
- The overall aim of e-government implementation is the improvement and refining of means of service provision to all government departments, citizens and businesses through the utilisation of ICT capabilities.
- Access availability is the provision of e-services round the clock to all or limited individuals/entities including government, citizens and businesses.

Based on the above, the e-government concept is and should be defined within broader perspectives. According to Seifert and Petersen (2002), Holden, et al. (2003), and Jain (2002), definitions of e-government differ according to their different perspectives and types, such as the government, citizen, business, technological and functional perspectives. As such, researchers have defined e-government in a multitude of ways. Ndou (2006), observes that for some, e-government is simply digital governmental information, yet for others e-government merely means the development of a website where the government can present political issues and information. While these simple explanations go some way to outlining what e-government stands for, they are also limited in their capacity for encompassing all the multiple facets of e-government, and all the opportunities it offers. Broader definitions include those by Srivastava

and Teo (2007), who define e-government as the capacity of ICTs and the internet to enhance ability and access for beneficial delivery of governmental services and operations to citizens, employees, businesses and other stakeholders; and Tian and Tainfield (2003), who define egovernment in line with four different perspectives: information technology (IT); government service; government efficiency; and political view. Lately, Grönlund (2010) and Srivastava (2011) define e-government as the use of ICTs, the Internet, and web-based applications to accomplish improvement, in addition to improve the access and delivery of government services to stakeholders.

The crucial aspect in all different definitions of e-government is that ICT is positioned as a fundamental tool in the re-invention of the public sector. ICT has the capacity to transform ways in which things are done, as well as to transform the relationships between customers and the business community, and between government stakeholders and citizens. Ndou (2004) outlines three components that characterize an e-government framework:

1. Transformation areas (internal, external, relational)

2. Users, customers, actors and their interrelationships (citizens, businesses, government organisations, employees)

3. E-government application domains (e-services, e-democracy, e-government)

In summary, it is evident that while these categories represent thematic distinctions, the different perspectives may be combined and integrated with each other. Broadly speaking, the e-government project concentrates on the presence of information technology and the internet to deliver services electronically to engage in dealing with services that the government provides (Palvia and Sharma, 2007). E-government has been referred to as the optimal utilisation of information and communication technologies (ICT) (Yildiz, 2007). The next section will cover the dimensions of the e-government.

2.2.2 E-government dimensions

E-government has brought about revolutionary changes, and this phenomenon can be grouped into four main types, as detailed by Ndou (2004) and Siau and Long (2005): government to

government (G2G), government to citizen (G2C), government to employee (G2E) and government to business (G2B). These services generally aim to increase efficiencies in wide ranging government processes in delivering transparency and eradicating corruption in transactions (Fang, 2002; Palvia and Sharma, 2007; Huang and Bwoma, 2003; Blakemore and Lloyd, 2008). In addition, they aim to empower citizens, businesses and government agencies to embrace the process of service delivery and information diffusion using web-based electronic means. The following section discusses each of these four categories highlighted in detail.

• Government-to-government (G2G)

G2G comprises the communication, networking and link between government and governmental departments. It may be at both local and national levels. G2G may be from central to local government, one governmental department to another department, agency to agency or between department to department and bureaus (Klamo, et al., 2006). At the other end of the spectrum, G2G can be used at the international level for diplomacy (Chavan and Rathod, 2009). According to Bonham, et al. (2001), G2G provides improved and enhanced communication among a government's segments and divisions. It also facilitates efficiency (Jaeger, 2003). Seifert (2003; 2008) and Atkinson and Ulevich (2000), have also suggested the enhancement of a government's own internal systems first, then in terms of e-transactions to businesses and citizens. G2G includes electronic sharing and exchanging of data among government actors that may be intra- and inter-agency exchanges at any level. The objectives of G2G are as follows:

- Better teamwork to fulfil citizens' and businesses' requirements
- > Improves efficiency of individual departments and agencies
- > Changes community service culture from reactive to proactive

• Government-to-business (G2B)

G2B is the exchange of communication and transactions between government and businesses. Ndou (2007), notes that businesses everywhere are using e-transaction to enhance their communication and functioning, lowering costs and improving control. By increasing online interaction with government, businesses have the opportunity to reduce red tape and simplify the regulatory process, which in turn improves company competitiveness.

G2B e-transaction and communication therefore focuses on improvements in the business sector and in a reduction of costs (Bonham, et al., 2001; Seifert, 2008). It includes transactions and exchange of policies, rules and regulations, memos and other business information (Chavan and Rathod, 2009). G2B offers services such as obtaining business information, business licences, application forms, business registrations, permissions, tax collections, and so forth, along with the development enterprises (Chavan and Rathod, 2009, p. 73). It also creates better opportunities for partnerships between businesses and government. It enhances government services along with the addition of value added services for the public and businesses, such as online tax forms, tax returns, business registrations, etc. Researchers have highlighted that G2B enables the sale and procurement of government and business goods to benefit both the private and public (Jaeger, 2003). It has better opportunities for improving procurement and selling efficiency along with a reduction of costs. The objectives of G2B are as follows:

➢ Facilitate business development through easier access and availability of information, to reduce the burden on business

Save time and materials with no requirement of same data reporting at multiple times to multiple agencies

Streamlines reporting requirements to improve and support efficient interaction with the government

Facilitates a flexible and competitive national economy in the global market

• Government-to-citizen (G2C)

According to Bonham, et al. (2001), G2C is developed for the facilitation of improved interaction between citizens and their government. G2C is the primary and fundamental aim of e-government (Seifert, 2008; Carter and Bélanger, 2005). G2C provides facilities for improving the time and cost efficiency of everyday transactions, such as the renewal of different licenses, national identity cards, certifications, payment of taxes, utilities and bills, and the application for benefits, jobs and services. It provides citizens with a means of communicating more easily with their government (Seifert and Petersen, 2002). It also allows citizens to be more aware of government policies, rules and regulations, services and laws (Muir and Oppenheim, 2002, p.175). Citizens have access to public government information,

official documents and proceedings of administrative matters (Reffat, 2003). As Ndou puts it, e-government "allows government to talk, listen, relate and continuously communicate with its citizens, supporting, in this way, accountability, democracy and improvements to public services" (2004, p.5). The objectives of G2C are as follows:

- Provide online and one stop access to government information
- Facilitate availability and accessibility of information required by citizens
- > Enable direct services and communication to citizens
- Enhance and build trust between government and citizens

• Government-to-employee (G2E)

G2E refers to the interactions between government employees and the government, such as via human resource training and improvements of day-to-day functional activities, including the way in which they communicate and deal with the demands of citizens (Chavan and Rathod, 2009). G2E empowers government employees to help citizens with efficient and appropriate administrative processes and provide outstanding services. It also provides the means to ensure efficient teamwork with a streamlined workforce and to understand and promote cross-departmental communication. Thus, not only does G2E refer to the provision of e-learning to government employees and the improvement of communication between the government and its employees, it also refers to improved knowledge-sharing *among* government employees. The objectives of G2E are as follows:

- Creates collaboration among employees with other departments' employees, anywhere and anytime
- Provides better opportunities for cross-agency initiatives
- Improves within and outside the department and in team information sharing and collaboration.

• Government to employee (G2E) related research

In e-government, it is necessary to understand the present positions of G2B, along with being aware of the gaps between e-government and businesses literature that has somewhat obstructed development and implementation between businesses and e-government. Businesses applications and technology outsourcing is a continuous focus of G2B and G2C
domains of e-government. While in the G2E domain of e-government, there are still some issues with main governmental departments of central and state governments and they are still forced by complex issues of concern maintenance, management and development. Much of the government's administrative and employees' support services are still being dealt with through manual handling, as per traditional practices. If these services are being handled electronically, they tend to be handled through some different applications that vary from department to department in terms of their different features, age and ownership. The most significant issue concerning the variation in electronic technologies being utilised is that they are not integrated – in other words, they lack cohesion.

For example, in India, government workflow automation, messaging, asset management, procurement, file tracking and management are all important areas that need much more attention and improvements. This domain and these areas have attained less attention due to traditional sets of restrictions and obstacles, such as non-standardised platforms, poor or less sustainability, individual-based or led initiatives, inefficiency, ineffectiveness, no integrity, change management and technological obsolescence. The same issues can also be seen in G2B and G2C applications, because required data and information necessary for decision making in G2B and G2C cannot be obtained from the current form. There are many G2E applications but some of the common and important G2E applications are government, human resources, human resource management, budgeting, finance, procurement management, store management is now taking a number of specific initiatives focusing on G2E services, such as:

- Deploying packaged application for G2E applications in MCA21
- The Indian government's Ministry of Personnel, Department of Administrative Reforms and public grievances are formulating the mission mode project on e-Office
- The government of Rajasthan, Gujarat and other states have undertaken the integration of e-secretariat initiatives
- The Indian government's Ministry of Commerce has undertaken some other electronic initiatives, such as government resource planning.

Over the last few years, a number of information technology vendors have evolved some specific applications, according to the requirements of the Indian government and its departments that have encompassed governmental procedures and processes in packaged application mode. Some of these packages are also referred to as government resource planning (GRP), which has provided a solid foundation and facilitated their adaption and implementation to other departments as well. G2E applications and other related infrastructures' outsourcing are justified under the following criteria:

- Requirement of government organization for focusing toward core citizen-centric services and correspondence requires focusing away from management of noncore and non-critical support functions
- Required development and management of G2E applications due to nonavailability of information technology and skilled man power in the government.
- Required due to high risk of failure of investment by public money through selfdevelopment.
- Necessary to build a unified and standardized application infrastructure for all departments' application management, maintenance, upgrading and efficiency.
- Required due to availability of variety of different packages for general G2E applications for governmental departments' usage like human resource management, finance and budgeting, etc.
- > It has a variety of exposures along with technical expertise of the private sector.
- Required due to long time taken in procurement and technological obsolescence in the government.

To understand the practical application of this concept, the next section will focus on egovernment's benefits.

2.2.3 Benefits of e-government

The bulk of research carried out on the challenges of e-government implementation has revolved around what has been done so far and how much resources were used in the process. It also relates or refers to those impediments that have halted the progress of e-government and the output of maturity models that was achieved or yielded. Many studies have supported the notion that innovation has an incremental effect, and that if there have been any benefits they are too slow to be accumulated (Brown, 2007; Norris and Moon, 2005). A systematic maturation process is not followed by the government and related organizations who are tasked

with e-government implementation or the process (Brown, 2007). In this regard, a systematic and sequential approach should be adopted by those tasked with e-governance issues (West, 2005). This would, in turn, help researchers and policy makers alike to predict and monitor any success or failure in this regard. So in this context the maturational models as developed by Brown (2007) and Norris and Moon (2005) have turned out to be quite productive for the researchers who have been working in the domain of e-governance. These models suggest that a lower degree of maturation would yield minor gains whereas a higher degree of maturation would sustain major gains in the context of e-governance (Brown, 2007). Using this approach, many models and ideas developed by experts in the field have been examined to understand the cost and benefit of e-governance.

Just as e-Business, e-Commerce, e-Learning, etc. provide advantages in terms of operational domains, e-government is also beneficial for citizens, businesses and governments all around the globe (Gil-García and Pardo, 2005; Jaeger, 2003; Edmiston, 2003; Fang, 2002; Cook, 2000). The concept is still in its nascent stages where the rapid transformative nature of IT has narrowed the flow of information and knowledge costs. This has resulted in maximization of speed, enhancing outreach and eliminating distance. For developed countries, this does not hold true as the idea of e-government has matured over there. The benefits mentioned above can be best achieved through e-governance (Jaeger and Thompson, 2003). E-government is basically how governments operate, disseminate information and extend services to the consumers or clients (Bhatnagar, 2004). By way of harnessing relationships through ICT with people and businesses and inter-government agencies. The benefits realised by such an initiative can be manifold: decrease in corruption, enhanced transparency, more ease, greater financial returns, and less costs. Costs would also be decreased as it would reduce the longevity of the direct-channel communication between various sectors of society. A single web portal would connect all the agencies, public or private, which would eradicate the necessity of large infrastructure and man power (Al-Khouri and Bal, 2007).

Moreover, e-governance increases the interest of the people and improves the accessibility of the services being provided to them (Al-Khouri and Bal, 2007). It would also make public-private partnership more accessible and collaborative. Hence this shows that it is not just a mode or method of providing services to the people; rather it is a transformation of the working and operations of government in which digital medium becomes the primary platform for service providence.

After analysing the present literature on the issue in depth, the author has derived the following core benefits of e-government: efficient and cost effective, accountable and transparent, people

centric, economic progress and accessible and available. These benefits will each be discussed in turn below.

• Efficiency and Cost Reduction

Adopting high-tech mechanisms is not enough to reap the benefits of e-technology. Governments need to have operational effectiveness through improved economic output (Edmiston, 2003). This argument is also supported by Ndou (2004) who asserts that the manual method of processing services is much more costly and time consuming, whereas online services benefit from being both fast and cost effective. Against this backdrop, many studies suggest that it can improve the efficiency of services to the citizens if implemented efficiently. As it would decrease administrative costs and time, it could bring greater benefits for the government (Gil-García and Pardo, 2005). The IT systems also ensure that minimum errors are committed and that the outcomes of the services are improved and much better (Gil-Garcia and Pardo, 2005). The impediments in two-way communication between private businesses and governments can also be eradicated through e-governance as the communication would become much easier (Bhatnagar, 2004). Along with communication, the transaction costs associated with two-way dealing can also be reduced by carrying them out online. Revenue collection would also be much easier through online portal and e-government services. This would also stimulate the interest of businesses who trade over the internet. It may also help in decreasing the level of corruption and nepotism which is usually prevalent in the government sector (The Economist, 2003).

• Accountability and Transparency

After having carefully examined the literature review, it was found that governments all over the world share a common understanding on the advantages that e-governance can bring about in terms of accountability and transparency. The decision-making process through egovernance would be smooth and improved which would benefit customers (Ndou, 2004). transparency and accountability in the public administration domain might be difficult to quantify due to how much a government is can be held liable for its actions to the public (Wong and Welch, 2004). Hence the domain of e-governance becomes a channel through which accountability and transparency from the government can work effectively (Kumar, 2003). In a single web portal, citizens have all the information available in a timely manner. The increase in transparency in this way is inevitable as the public are able to monitor government services directly without any midway channel. Increased interactivity through technology between people and the government would also make the latter conscious and responsive to the former's needs (Wong and Welch, 2004). E-governance also helps in decentralization within government agencies (Carter and Belanger, 2005). It would show that government is sincere in its responsibility towards people as it has provided a platform through which people can monitor their performance. It also makes people feel that they are part of the decision-making process and they have ownership of whatever is being done by the government (Ndou, 2004).

• Customer Centric Focus

E-governance can also change the way government and people interact. It provides a new interface for both of them to communicate, unlike traditional methods where people have access to limited number of avenues (Navarra and Cornford, 2005; Wong and Welch, 2004). This creates a sort of partnership relationship between them unlike the one-way relationship in the past (Silcock, 2001). Under the effects of globalization, the nature of public administration and government organizations with their style of governance is changing (Bevir, et al., 2003). This indicates the idea that public policy making is changing at global and local level through a reconceptualization and critique of the old ideas (Ghose, 2005). This has paved the way for a sort of participatory governance through which people have received greater government attention. Theorists belonging to contemporary times have written in the favour of enhanced participation through which people make decisions about issues of any nature. E-governance makes democratic governance more easy and real (Lauber and Knuth, 1999). As common people would become part of the decision-making process, they would be more receptive to the idea and services being provided by it. It would help to ensure the implementation of plans and also enhance relationship between public administration and agencies (Irvin and Stansbury, 2004).

• Economic Development

In order to manage a country's social and economic resources in terms of development, egovernance helps government's initiatives for transparency and effective governance (Basu, 2004, p.110). It helps many businesses in saving costs as they can access government services on the internet without undertaking the hassle of manually visiting the concerned government agency; for example, e-government can provide an online procurement system through which bidding, purchasing and payment can be done (Gunasekaran and Ngai, 2008; Seifert and Petersen, 2002). E-government also provides a platform for cooperation and partnership between the government and private businesses (Bertot and Jaeger, 2006; Al-Sebie and Irani, 2005).

• Accessibility and Availability

E-government addresses another dilemma which the traditional mode of governance usually faces, and that is the smooth integration of computer supported government services and enhanced government access and availability (Scholl and Klischewski, 2007). Regardless of the nature of the service to be accessed, businesses and people can access anything on an online portal through a single click. Thus a click of a button integrates all the facets of the government to citizen and government to citizen relationship. E-government makes information in the public domain more accessible and fast. It augments their availability, presence and also increases their responsiveness towards needs of the people (Halchin, 2004). It also helps in decreasing the effects of bureaucratic hurdles and increasing the participation of citizens in democracy (Prins, 2001). This further substantiates the point that e-government can improve quality and access public services (Carter and Belanger, 2005).

Notwithstanding the benefits of e-governance mentioned above, governments find it hard to implement e-government effectively. Many issues can prevent this such as hefty, inflexible and ineffective government decision making processes and the lack of knowledge and understanding on the part of government about the real issues that the public might be facing. Another problem is the lack of awareness on the part of stakeholders who might be using ICT structures, and so this can also affect the acceptability and adoption of e-government resources. At the heart of ineffective e-government lies the heterogeneity, fragmentation and lack of interagency coordination (Janssen and Cresswell, 2005). In such a scenario, cooperation between government, people and private organizations happens in/at a very limited sphere and pace. Services with full personalization and customization are still a pipe dream.

For many areas of the public sector, provision of services without the necessity to meet in person is desirable without any doubt. However, deliberations and assessment should be carried out at global level to enhance development and improvement of e-governance (Al-Shehry, et al., 2006). The idea behind such a discussion would be to change the face of governments in developing countries towards coherent and capable communities in which citizens' needs are being met. The research potential in this field is immense and is certainly an area that merits further investigation/exploration.

With all of the perceived and undoubted benefits of e-government, there still remain many challenges which must be overcome if this technology is to be truly realised; some of these issues are considered in the next section.

2.2.4 Challenges towards e-government Implementation

The hurdles preventing effective e-government are varied and deep rooted, potentially having a negative impact on its wider, successful implementation. The diverse and complex nature of e-government overtures shows that challenges towards its implementation are wide and diverse (Weerakkody,2011; Aman and Kasimin, 2011and Al-Shafi, 2011; Jain and Kesar, 2011; Bhuiyan, 2010). Some of those potential issues are considered in this section:

• Technical challenges

As the whole system is based on IT, there are several technical hurdles or impediments which e-government might face. One such problem can be the absence of a congruent, coordinated IT infrastructure between the many different government agencies and institutions. Since all the data is present on online systems, privacy and security of their information and transactions also remains a core concern of the people (Choudrie and Jones, 2005). People can only trust systems if government provides procedures and methods which are transparent and independent (Aman and Kasimin, 2011).

• ICT infrastructure

One of the major challenges preventing e-government implementation is ICT infrastructure. In order to ensure smooth functioning of the system, it is necessary to have proper sharing of information and enhance newer channels for communication and services (Almarabeh and AbuAli, 2010). Proper architecture which is guided by a clear set of principles, models and procedures should be developed for transition to electronic government. The reason that many countries fail to effectively implement e-governance is because they cannot create the requisite ICT infrastructure for it (Rose and Grant, 2010). This is also known as the 'digital divide' which is considered as being a major impediment towards the implementation of e-governance (Gil-Garcia and Ferro, 2009). A strong technology infrastructure is required for e-government implementation (Brown and Thompson, 2011). So an effective telecommunication structure should be established that would enhance e-government services. It is also suggested that successful implementation would heavily depend on how various infrastructure would be integrated into one and how they would be capitalized. But this solution is not enough on its own, as proper readiness and literacy on the part of government and citizens should be in place. ICT knowledge or awareness can be classified as: know-how of usage of information technology tools, communication tools, applications to access, creation and integration of information, access to information is also necessary for the effective e-government implementation (Katz, 2009). Apparently, the more human development, the greater will be the inclination to accept and make use of e-government services (Ndou, 2004). Hence, governments should work in collaboration with the private sector to introduce modern infrastructure which can reach individuals who are not connected or acquainted with egovernment systems. Lack of infrastructure and knowledge about this area has been shown as being one of the impediments towards effective e-governance (Jain and Kesar, 2011).

• Privacy

Another major issue that has been receiving a lot of media coverage throughout the world at the moment is privacy and the sanctity of one's information. People feel unsafe with the notion of tracking, information sharing and misuse of private data which comes out of and can be associated with e-portals (Belanger and Hiller, 2006). People also feel unsafe about the idea that governments might use their private data to spy on them or affect their privacy. It can also be described as protection of the information about an individual by those who have it (Lean, Zailani, Ramayah, and Fernando, 2009). The response to privacy concerns by the citizens can be technical as well as policy related. The vulnerability of online systems makes it difficult to

maintain privacy of its customers. The inability to maintain the trust of the customers can be troublesome for the implementers. In order to gain people's confidence in e-government systems, it is important to address these issues in e-governance infrastructure. Hence it is essential that careful handling of personal information is undertaken to gain the confidence of citizens (Weerakkody, 2011).

This is especially true for developing countries where people, perhaps due to a lack of awareness, may highly doubt the security of e-government systems (Lean, 2009). This is the reason that they would not choose to opt for the services. It is the duty of government to ensure the privacy of people in processing and collecting personal data for legal purposes only (Sharma and Gupta, 2003). Many scholars consider privacy and confidentiality as important obstacles in the way of achievement of e-government (Belanger and Hiller, 2006). People get concerned about the privacy of their information which they give government to get their eservices. Therefore, the priority must remain the privacy of the data when establishing websites (Almarabeh and AbuAli, 2010). But it must be kept in mind that privacy should be ensured when the e-system is in its inception phase. The planning and layout of the system should be mindful of privacy considerations. A proper policy should be formulated at governmental level which would enlist the rights of citizens in this regard and also ensure that only legitimate purposes guide the collection of personal data (Shareef, et al., 2009). The nature of the data which is collected most of the times in this regard can be phone numbers, addresses, employment and medical records, names and family data. It must be noted that the idea of privacy is itself relative and can vary from culture to culture and country to country.

• Security

Another important factor for the implementation of e-government is security (Carter and Weerakkody, 2008). Many experts in this field have suggested that security is the focal issue of the e-government systems in all countries (AbuAli, 2010). What is meant by security is the safety of the data and the system from the threat of breach, destruction, unwanted modification or cyber-attack (Layton, 2007). Hence, in simple terms it is the security of the IT systems and management of access to the data (Lean, et al., 2009). The sense of security enhances the trust that the public has in the government. Conversely, a lack of sense of security and presence of fear may further make people detached from e-services (Colesca, 2009). The security of the information of the customers and the government are simultaneously important for the

effective implementation of e-services. Security requires the protection of data, maintenance of integrity of IT infrastructure, the capacity building of the staff, smooth service delivery, etc. Security has various dimensions such as computer security, network security, documents security and confidentiality of the information (Smith and Jamieson, 2006). It is also the maintenance of firewalls and limited access. In order to enhance security of the systems, various methods are employed like security technology, digital signatures, encryption, passwords, and bank account numbers amongst others. They are transmitted and stored over the internet which can help in terms of meeting the security goals in e-government applications (Weerakkody, et al., 2011). The type of security that is being discussed is also known as cyber security which is now an important challenge for all the governments in the world who carry out their business online. In order to maintain security it is necessary for those responsible to be vigilant and ensure protective measures are put in place to prevent worms and viruses from spreading or causing damage.

In a wider sense, customers should also be made aware of the security measures which are in place. They should also know that personal security is important to those who are providing the service. They can maintain it through private passwords or private identification to ensure their security. The public need to be realistic in their expectations. Failing to acknowledge or appreciate that lapses and obstructions can occur, would mean security is acting as obstacle instead of enabler for e-government (Reddick and Frank, 2007). There are three factors that affect the security of an e-system: Constant up gradation and improvement of the system to prevent criminals from affecting the system; security needs to be explicit not implicit; a realization that no system can ever be perfect and lapses can happen. Those tasked with the collection and distribution of the information should be able to provide security for their web portals through which they conduct their businesses. In addition, a proper security mechanism should be undertaken to combat cybercrime and attacks. This would make people more trustful of government services through their transactions and businesses. A body should be formulated whose primary task is to monitor and respond to threats posed to the IT systems. The priority should be encryption system and infrastructure (Colesca, 2009).

• Organizational challenges

There are also organizational challenges which can negatively affect the implementation of egovernment systems. E-government is not just a technical issue; rather, it is also an organizational one (Feng, 2003). Stakeholders have pointed out that e-government is more of a change management issue than IT infrastructure implementation issue. The challenges arising at organizational level regarding e-governance can be: absence of qualified people, lack of requisite training and negligible collaboration.

• Policy and regulation issues

A new and appropriate set of rules, policies and government changes are required for the implementation of e-government principles. These policies can be data protection, computer crime, electronic signatures, data protection, intellectual property rights and copy right issues (Almarabeh and AbuAli, 2010). So the dealing of e-government should be overseen through agreement which is recognizable in formal law and which also protects such activities and processes. In most of the countries, proper laws and regulations in this regard are not present yet (Dawes, 2008; Ndou, 2004). So when e-government systems are being introduced, proper reforms should be introduced which would ensure the privacy, security and legality of the interactions and transaction carried out online. Those who are tasked with implementing security must have knowledge of the present laws and policies. Lack of knowledge could seriously jeopardize the prospects of the e-government initiative (Ho, 2002; Bhuiyan, 2010). Therefore, laws that are being developed and introduced must not necessarily be technology centric; rather, they should have an organizational and policy orientation as well. Legal instruments are necessary at international level because conflicting laws and authority can affect the functioning of the project. Those who are responsible should design and develop the key infrastructure which would ensure safe transactions amongst organizations and individuals (Al-Fakhri, et al., 2008). An international commission, issues and regulates trade laws. But it must be noted that this organization only deals with trade law under which e-commerce can come.

• Lack of qualified personnel and training

Another challenge is the apparent lack of ICT skills in the public sector. This particular issue arises in developing countries where there are few people who possess the relevant qualifications and the human resources available are underdeveloped (UNPA and ASPA, 2009). Unless appropriate skills are not present amongst the implementers, e-government implementation will not be successful. The scope of human capacities should encompass

technological, commercial and management domains. Technical skills are required for the design and layout, maintenance, and inception of ICT infrastructure which are requisite skills for managing and creating online functions, customers and processes. The capacity building and training of human resource through workshops and seminars can be undertaken to address the issue of human capital growth (OECD, 2003). It is imperative to carry out training and education programs to ensure the smooth functioning of e-government projects. Constant training of the implementers is necessary in the face of rapidly changing practices, technologies and competitive models. The ICT infrastructure would only yield results when the process of training is undertaken for e-government implementers (Alshawi, 2006).

• Lack of partnership and collaboration

In the process of e-government development, coordination at local and national levels plays an important role. Interaction and collaboration between private and public sectors are also important elements (Altameem, 2006). But it is not as simplistic as this. In order to ensure their authority, power and hierarchy, governments do not make space for enhanced transparency and openness (Cohen and William, 2002). In political systems which have been authoritative, have used martial law, are politically instable or corrupt, people would not take the e-services being offered seriously. Hence, trust within and in government is imperative for the success of e-government systems (Ebrahim and Irani, 2005).

It is only not only at the governmental level, also, collaboration amongst the private and public domains is necessary. This would provide the public sector with much needed skills and capabilities from the private sector and vice versa. Both would augment each other's systems through close coordination. For example, universities can provide a highly skilled labour force, whereas the private sector can provide infrastructure and skills, and the government can provide data and outreach. Thus three sectors can work in coordination to contribute to the flow of information for effective e-governance. Hence the new practices require the involvement of all stakeholders in the development of e-governance. In this whole process, it is important that government are the coordinating body and facilitator for e-government implementation (Ndou, 2004).

• Social challenges

The social issues can stem from cultural and ideological leanings of the target customer base. The layout and design of the interface should be such that a wide variety of people can use it. There could be a multitude of social challenges in the way such as digital gaps, cultural, educational, financial, etc.

• Digital divide

The knowledge of computers and usage of the internet has been an important factor in the determination of e-government implementation and services. Social exclusion or marginalization are going to be likely outcomes if someone is not acquainted with the use of computers and technology (UNPA, 2009; Bhuiyan, 2010). The digital gap indicates the gap between two groups: those who know and those who do not. E-governance therefore, may have limited outreach as it would not be used by those who have no access to the internet or do not use computers (OECD, 2003). There may be many reasons behind this such as a lack of resources, skills or access. As a result, people who know computers would be regarded as being one step ahead of fellow citizens which may make the latter group feel deprived or inferior. It is therefore the responsibility of government to train its employees and staff in basic skills so that they can facilitate people and their peers in implementing and getting e-services.

In order to address the outreach issues in relatively less developed areas, e-services should be installed at local shops or market places (Gomez, 2009). Despite so much advancement, there are still large numbers of people around the world who are not connected to an internet system (UNPAN, 2004). There seems to be no prospective plan which envisages addressing this area in the near future.

This means e-governance is only used by those who possess the financial, educational and social capabilities to be able to understand or operate it. Such is the nature of challenges which occur in the way of e-services through local challenges and language issues. Lack of access and outreach to those vulnerable and low-income groups from amongst the population makes e-government system less effective.

• Culture

Another factor in impeding the implementation of e-government can be the local culture and how it views technology (Feng, 2003). Culture is composed of beliefs, religion, language, values and behaviour of the society (Burn and Robins, 2003). Personal choices and conditions play an important role in determining the cultural factors which affect the course of implementation of digital technologies. Hence, subjective conditions of the target customer base overpower the objective considerations. Cultural and individual social constructions therefore, determine how citizens use and policymakers employ e-government systems (Forson, 2010). It is the culture which determines whether people are prone to change or they are resistant to it. Adoption of the corporate approach along with a lack of coordination between internal and external actors in the process can also act as an obstacle towards the implementation of e-government (Hackney and Jones, 2002). In order to implement newer technologies it is important to introduce cultural changes as well. Accommodation of diversity of cultures should also be made a priority. Just like other challenges, cultural changes must also receive attention when striving towards the implementation of e-government (Altameem, 2007).

• Leaders and management support

According to the prevailing literature, support from leadership is a primary factor in ensuring the success of e-government initiatives. The government from its highest level should be supportive of the e-services as they would ensure its success through directing necessary resources required for its operation. This type of support signifies the commitment of the leaders at the top, and demonstrates that they are sincere in their endeavours towards e-government implementation (Hussein, et al. 2007). Without this type of support, the adoption of e-government would also be problematic (Akbulut, 2003). Whenever a new project or idea is introduced, how it is steered and led is what determines its success and failure. This is where leadership plays an important role as they would add legitimacy to the efforts being undertaken at local or national level. It would also make people attentive. It is the leadership of an organization that determines the limits and rules related to corruption and accountability. In order to eradicate resistance to change, leadership's patronage is important as it would set clear lines of accountability and transparency. Without it, formal and appropriate rules of operation

cannot be set. In order to get the necessary resources and material for the establishment of an e-governance system, leadership plays an important role (Almarabeh and AbuAli, 2010). The process of implementation ought to be all inclusive in which leadership plays a leading role in promoting the integrated vision of IT. For motivation of staff, dealings with stakeholders, coordination and planning, high level leadership participation is inevitable. In most of the developing countries, e-services drives or initiatives have political leaders spearheading the campaigns. Consequently, those who see benefits coming out of such initiatives would be more eager to execute them. In contrast, those in chare who felt that such policies were disadvantageous for themselves would act as deterring factor towards e-government implementation, not as an enabling one (Seifert and Bonham, 2003). One can see therefore, that this responsibility falls upon government and the relevant leadership to inculcate amongst officials, the public, and managers who are engaged in the ICT sector of their responsibilities and the potential benefits associated with it. This is necessary for the effective delivery of e-services (OECD, 2003).

• Financial challenges

E-government systems are costly to make and a major impediment that occurs in their implementation is the availability of finances and resources (Stoltzfus, 2005). It is compulsory to confirm the accessibility of the standing and likely budgetary funds to achieve the goals. As every budget is overloaded with amounts required for everything mentioned, a proposal to allocate funds for such initiatives is not taken enthusiastically (OECD, 2003). In developing countries, budgetary politics play a significant role in determining government's preferences. Despite the presence of a sound, effective plan for e-government, many countries find it hard to implement things due to a lack of financial resources (Carvin, 2004). In adoption of new ICT systems, e-government initiatives face further constraints of resources and money. Governments can employ e-services to perform their democratic duties and functions but they are constrained by the lack of money or approved budgets earmarked for this purpose. Not just that but the costs associated with information technology hardware and software along with capacity building and training of the staff also require a considerable outlay of financial resources.

2.3 Kuwait

The following sections provide an explanation of Kuwait, such as Kuwait's constitution and government, economy, education, and the current position of e-government services in Kuwait.

2.3.1 Population

The State's population, as recorded in government statistics up to March of 2015, is 3,448,139 – which is less than half of the population of London. The majority of the population is made up of foreigners as they represent nearly two thirds (2,639,581) of the population in Kuwait, while Kuwaiti citizens represent nearly a quarter (1,159,787) (PACI, 2015).

2.3.2 Language

Arabic is the official language of Kuwait. It is the language used in all government documents. English is the country's second language. It is widely spoken and commonly used in business, and within the educational system .

2.3.3 Constitution and government

On November 11, 1962, Kuwait saw its constitution passed. Kuwait's constitution is composed of a mix of presidential and parliamentary style of governance (Kuwait Information Centre, 2004). The constitution declares the Emir as Chief of the state with Kuwait being an emirate, which means change of leadership is hereditary. It is sole pejorative of the Chief of the state to employ Crown Prince and Prime Minister, who acts as Head of Government. It is the President's suggestion which guides probable choice for the Prime Minister. A council or group of ministers are on hand to assist the Prime Minister in the dispensation of his duties. To overlook law making and constitution, the National Assembly, also known as Majlis al-Umma, exists and comprises fifty members. These members hold their offices for four years after which an election is held (Wikipedia 2004). After the ruling royal family, it is the head of the National Assembly which is regarded as being the most powerful political entity. The ministerial council or cabinet consists of high ranking officials who are mostly top leaders in the country (Helen Ziegler and Associates, 2016). In certain places, they are also known as secretaries, but generally they are referred to as ministers. It is through the cabinet that key state institutions are managed and controlled. Every member is responsible for policy making and oversight in his respective ministry. The number of ministers in a cabinet varies from country to country, and in Kuwait, the total number is twenty-five (Al-decayed, 2014). Another variation is the modus operandi of cabinet amongst countries. It may be a ceremonial body with only advisory or assisting status to the head of government. It can also be a collective decision-making body which formulates policies through consensus.

Only males of twenty-one years of age (the minimum) were eligible to cast their vote up until 2005. After May 2005, women were also given their inherent right to vote. This law which was passed in 2005 brought about an increase of 200,000 to the total number of voters (Kuwait Information Office, 2010).

2.3.4 Economy

Before the twentieth century Kuwait was an insignificant emirate whose sole source of foreign income was sea trade. Back then its primary source of foreign earnings used to be spices and pearls. But with the discovery of oil in the twentieth century, things changed forever for Kuwait. The discovery turned out to be so miraculous that it made it from amongst the richest Arab states, with one of the highest per capita incomes in the world (Kuwait Information Office, 2015). The prosperity and advancement evident in Kuwait can all be attributed to the laurels that oil reserves have brought for Qatar over the years. According to one estimate, Kuwait's oil reserves are around 98 billion barrels which accounts for ten per cent of the world's total oil reserves.

It is interesting to note that approximately half of the gross domestic product (GDP), ninetyfive per cent of export revenues and eighty per cent of government income can all be attributed to petroleum reserves. Through such a large amount of money being accrued from this sector, Kuwait was able to invest heavily in foreign countries. When it was invaded by Iraq however, its major source of income, foreign investments, was lost as it lost control of its own oil exports. Ironically, it was also due to the vast amount of oil at its disposal that Kuwait was able to stand on its feet again so swiftly after the Iraqi invasion. Post war reconstruction was a source of great economic burden, but by the end of the 1990s it was able to reclaim its past glory. It is worth noting that Kuwait's GDP was around fifty-two billion dollars which equates to around \$21,600 per capita GDP (Central Intelligence Agency, 2007).

Notwithstanding its undeniable and unquestionable wealth overall, the reality is that due to Kuwait's relatively small budget, population and area, its economy is not considered to be big when compared to other far larger nations (API, 2002). This results in many challenges for the country in terms of development, primarily because of a lack of human capital. The abundance of oil and subsequent wealth enabled Arab countries to undertake massive development and infrastructure programs, but the same cannot be said when it comes to their human investment or development (Fergani, 2001). Similarly, Kuwait's acute shortage of skilled and qualified human capital remains a bane for its otherwise robust economy (Alsharah, 2002). This results in a disparity in terms of the quality of its living compared to more familiar developed countries, but Kuwait undoubtedly remains amongst one of those countries in the Middle East who provide a high-quality living to its citizens (Princeton University, 2013). Kuwait's dilemma of skilled workers has to date been addressed by a large number of foreigners who contribute towards Kuwait's successful economic development. Kuwait acts as a starting point for millions of expatriates who chose it as their first workplace to gain experience so that they can move to more developed countries in the future (Aladwani, 2002). So it is clear then that expatriates and foreigners play a vital role in the success of Kuwait's economy.

2.3.5 Kuwait E-government

In order to improve its services, the Kuwaiti government introduced a number of programs in the context of e-governance. In order to automate manual procedures, the government has employed the latest ICT equipment and programs to operate more effectively and cater to the emerging needs of citizens. The aim is to meet their needs immediately and properly. Initially these efforts were undertaken to meet daily challenges to the office environment. However, in order to keep up with the latest technology and innovations all over the world, the system was expanded to management information systems and email applications. It was also adopted for archiving systems to make more advanced database management systems. Fast internet broadband internet connections are available in every ministry and institution for successful operations and delivery of services. The ICT infrastructure in Kuwaiti ministries and government obtained a two out of four ranking in a study titled 'ICT and Knowledge based economy' conducted by the Economic and Social Council (Economic and Social Council, 2004).

This has manifested itself in practices regarding the making of ICT policies and plans, ICTspecific laws and strong programs for internet backbone links at both national and international level. This also includes the dissemination of information about ICT through awareness campaigns. In this regard, various training sessions have been conducted in government institutions regarding the adoption of the latest IT infrastructure. This enables users of ICT to use computers, tools and systems, access databases and system applications effectively. The latest technology has also been adopted in government institutions to regenerate the present workforce and create job opportunities (Al-Shayji, 2005).

The fast-paced adoption of the latest communication and technological developments by the Kuwaiti government have made a strong base for implementation of e-government in Kuwait. There are several reasons behind Kuwait's drive for e-governance. The international acceptance and propagation of the digital economy along with information lead societies are such causes. This also links in with the increasing role of electronic systems and processes in our daily lives, which is another factor that has influenced the government's decision to implement e-government. It is envisaged that the e-government project would enable the nation to equip itself to deal with the challenges being posed by the dynamic global environment in terms of governance and management. It is also hoped that it would elevate standards of living and the quality of institutions in Kuwait (Al-Abdullah, 2005).

In this respect, to be at the forefront of world technology and advancement, the Emir of Kuwait has directed the government's focus towards investing all of its efforts in this regard. In order to incentivize officials working on this initiative, he has introduced the E-Award to recognise the efforts of those who have contributed towards progress in this part of the IT sector (World Summit Awards, 2012). The official online portal of the Kuwaiti government was launched in 2005 addressing the needs of Kuwaiti citizens, residents and visitors. By 2006, the government managed to provide fifty services to the people through its website.

In 1999, The United Nations Public Administration Network UNPAN was established through directives of Department of Economic and Social Affairs of the United Nations. The aim of this network is to enable developing countries in implementing internet based networking in their states (UNPAN, 2005). Various e-surveys have been conducted by the United Nations to determine how governments are undertaking e-government initiatives. The aim is to support

them in making effective, efficient and inclusive systems which are in line with United Nation's sustainable development initiative. These are the parameters of United Nations agenda worldwide (UNPAN, 2010; 2012).

A report titled E-Government readiness has been devised by the United Nations, which can be used to assess a country's standing in the domain of E-governance. In 2010, Kuwait's e-government development was ranked 63rd in the world, but then it fell thirteen places in 2012 (UNPAN, 2012) reaching 0.5960 points (UNPAN, 2012). Despite its efforts, Kuwait was placed far below its Arab contemporaries. United Arab Emirates, Bahrain, Qatar and Saudi Arabia ranked higher than it. United Arab Emirates took lead from these states by attaining 28th place in 2012. It attained this status in merely two years by undertaking vast advancements in the ICT field. It is worth noting that this report was based on a composite of three factors: web measures, human resources and telecommunications (AlSoud, et al., 2014).

One of Kuwait's neighbours, Saudi Arabia, also managed to attain a better position than its previous record in 2010 when it was at 58th position in the list. In 2012, it rose to 41st position with a score of 0.6658 in its e-development ranking (UNPAN, 2012). These rapid improvements in the ranking of Gulf countries stems from the heavy investment they undertook in ICT infrastructure which subsequently increased their productivity. It has also helped to make them efficient and effective g-government services providers to their citizens. However, despite being financially strong, Kuwait falls behind its Arab contemporaries. This indicates that further, enhanced efforts are needed to bridge this gap.

It should not be suggested however, that Kuwait has not seen improvements. Overall, the development of the e-government sector in Kuwait has seen it race ahead fourteen places to claim 49th place in 2014. This is in contrast to its lowly position in the 2012 report. It has also been placed in the list of EDGI countries along with its neighbours Saudi Arabia, the United Arab Emirates and Qatar; an indication of its considerable improvement.

Since the 2010 report was published by UN, the pace of Kuwait's development has been much higher than that of its neighbours (UNPAN, 2014). In a more recent report in 2016, this progress was evident once more as Kuwait jumped ahead by nine places, claiming 40th position.

However, what is puzzling is despite gaining considerable improvement in terms of literacy and EDGI along with its relatively small population, Kuwait is still ranked below its neighbouring Arab countries. The reasons attributed to this could multifaceted and include factors such as non-satisfaction on the part of users and lack of awareness about e-government. Also, behind Kuwait's low index score is the fear that Kuwaiti people might have of epayments per se as they distrust the security measures that are in place. This can be addressed through enhancement of e-government initiatives which aim to provide better services to the public. A leading newspaper in Kuwait conducted a survey in which it was found that fifty-six per cent of people used the internet only for entertainment purposes, whereas thirty-eight per cent were not content with the services as a whole (Alqabas Newspaper, 2011).

2.3.6 Implementation of e-government in Kuwait

The Emir of Kuwait, Sheikh Sabah Al-Ahmed Al-Sabah, has decided to focus particularly on information technology. He believes that ICT holds significance in the everyday lives of people, especially the young generation who he sees as the future assets of the nation. In the late 1990's, the Emir regimented high steering committees at governmental level to gauge the management and readiness of ICT. He made the e-government project one of the main concerns of government, aiming to revolutionise the work of government work.

Al Shatti (2005, p.5) says that the aims for putting e-government into operation were to make government information easily accessible for beneficiaries, enable smooth processing of governmental procedures, and to boost the public participation by permitting greater interaction with officials in government. Al-Kharafi (2005, p.3) argues though that acclaiming the targets of e-government not only requires using the modern system, instead it also has to address the capacity of government to incorporate the new modern system in already existing administrative hierarchies which are traditionally conventional in terms of means, methods and organization.

Al-Shatti (2005, p.3) goes on to state that the success of the e-government project depends on different factors including organizational reforms, a sufficient number of decision makers who are capable of understanding and adopting these reforms, and are able to formulate policies required. Al-Freih (2005, p.1) argues that the e-government project will not only be relevant in making business truncations, rather it will significantly change everyday lives. It will revolutionise homes, workplaces and society overall, and it will change the way we interact with each other.

In the year 2000, the council of ministers issued ruling No.759 regarding e-government in Kuwait. This ruling proposed the establishment of a national higher committee, led by the

Prime Minister as well as Minister of Planning and a number of other specialists. This specially formed committee is in charge of managing and implementing e-government projects in the country. Under the ruling of this committee, a central technical body (CTB) has been established, which will be responsible for coordinating the work between the national higher committee and governmental organizations. Furthermore, it is charged with finding suitable IT specialists. It includes a number of teams who are supporting its work, namely:

Secretariat team: this team is responsible for organizing, articulating, distributing and coordinating the tasks of other teams. It carries out the tasks of supervision and managing the project websites on the internet (Kuwait E-government, 2003).

Technical team: the technical team is in charge of following up the execution of specific conditions, standards and components proposed by the consultants approved by national higher committee. This team examines the achievements of government authorities in different phases of a project and offers technical advice.

Awareness and information team: Is responsible for ensuring the follow up of marketing and information plans permitted by the national higher committee. Furthermore, it is expected to conduct specific studies on the effect of introducing digital services and gather inputs about the public perception of e-government.

Legislative Team: The primary task of this team is to formulate and oversee present and prospective laws related to e-government business. It undertakes the drafting of new laws and regulations to tackle emerging dynamics.

Changes and Process Engineering Management Team: The decisions made by national higher committee are coordinated by this body. It reformulates and adjusts processes adopted by government to meet the e-government standards. It also keeps an eye on the technical and administrative expertise of officials so that their services can be called upon whenever the need arises. These are the people who have implemented such initiatives before. For instance, the CTB has taken guidance from the thriving experiences of states who have already pioneered and are running with the idea of e-government (Al-Abdallah, 2005). This is being done to transfer those best practices into Kuwait's context and domain.

In this regard, the government of Kuwait signed the Memorandum of Understanding (MoU) with Singapore in 2014. It aimed to have formal cooperation in the field of e-governance and

take their guidance in improving the Kuwaiti system. This MoU lays out three phases of cooperation: fact finding phase, magnitude of discrepancy and evaluation of readiness level.

In the first phase, close examination and study of government officials and bodies is undertaken to get a grip on their practices and habits. It also looks into the present automated programs and checks the technical level of competence of the government. The second phase looks into the gap that exists between the need/requirement and the resources available; also known as magnitude of discrepancy. The Information Development Authority would be established for this purpose which would lay out an action plan for e-governance in Kuwait (Al-Abdallah, 2005). Last but not the least, evaluation of readiness would assess the viability and reliability of the newly installed improvements. Researchers have stressed on the dire need to collaborate with the private sector to benefit from the exposure and experience they have in the field (Al-Srayea, 2005). This move could help to make the government sector at par with the existing level of ICT at national and international level.

It would also enable the Kuwaiti government to offer the best e-government services to citizens to meet their daily needs and aspirations. Learning from other experiences is the best way to improve. Cooperation with the private sector and other states has yielded positive results for e-government in Kuwait.

2.4 Chapter Summary

This literature review has provided a thorough overview of the existing empirical data to which this research contributes. Not only has it outlined the meaning of government and e-government, but it has also indicated some of the gaps in the literature, gaps that this research intends to go some way towards filling. This chapter examined the literature to define and illustrate the types, stages, advantages and challenges to e-government. It is clear that e-government has many benefits to offer to all sectors of government. However, many important challenges face the adoption and implementation of e-government, some of these being non-technical. However, they have a wide impact and require comprehensive planning. Upon further exploration of the above-mentioned challenges, it is clear that four key themes stand out; these are political-legal forces, economic forces, socio-cultural forces and technology (Wheelen and Hunger, 2002, p.11). The majority of researchers that discuss e-government have been critical of the implementation and challenges facing e-government. Many researchers

have suggested that the introduction of e-government to a country will ultimately result in a number of challenges for the stakeholders and therefore by association, the government. These challenges have been highlighted in this review and are taken into consideration and addressed in Chapter 3.

CHAPTER 3.

CONCEPTUAL FRAMEWORK

This chapter will outline the conceptual framework for the thesis. It commences with the challenges for implementation and adoption of e-government, providing a framework for the conceptual foundation established in this research. This framework, illustrated in figure 3.3 (see page 83), indicates the various elements that effect implementation on the one hand, and adoption on the other. This framework is crucial to position at the outset of this chapter as it represents itself as the guiding point through which the research itself is conducted, as well as the structure of this chapter. This framework underpins the development of the research methods, the collection of data and the final analysis. The proposed model will be used for empirical data collection and analysis, and to establish a comprehensive overview of e-government implementation and adoption in Kuwait's MoE.

3.1 E-government implementation: the government perspective

Having developed from e-business thoughts, the execution of e-government includes acquainting key change with the built-up business line in broad daylight segment associations. Along these lines, in the investigation of e-government, it is clear to see how this change will affect open segment associations which are seen as being bureaucratic and inflexible. Earlier research has demonstrated that while actualizing e-government, governments ought to consider the truth of complex issues that encompass e-government activity. These incorporate administrative (Pardo, 2002), innovative (Pardo, 2002), sparing (Lee-Kelley and James, 2005), social (Lee-Kelley and James, 2005), and strategy related (Pardo, 2002) changes. It would be a grave blunder to disregard comprehension of these issues and complexities as this could be the good outcome in the danger of expensive disappointment (Irani, et al., 2009). Chandler and Emanuels (2002) determine that the e-government execution venture is a long-haul task/project

that has many difficulties and obstructions. While actualizing e-government activities, the degree of progress with its partners, (i.e. the representatives, organizations, and nationals) and their associations with part of the government must be considered. A few researchers have arranged e-government challenges into specific, financial, social and hierarchical difficulties (Chesi, et al., 2005).

As indicated by Nelson (2003), e-government execution prompts authoritative change by moving from a current status to another coveted circumstance. In this way, the change could be viewed as a circumstance of moving from straightforward and ordinary status to remote status, and inside new conditions. In today's powerful and moving universe of natives' needs, associations need to react as fast as they conceivably can to these progressions and residents' requests. In this regard, an association's reaction to these progressions will frequently rely upon socio-social, political, financial, statistic and innovative advancements and patterns in various markets or social settings (Centeno, et al., 2005).

Various hypotheses have been proposed throughout the years to concentrate authoritative change; for example, the framework hypothesis, social hypothesis, and the hypothesis of reasoned action (Kritsonis and Student, 2004). Among the most broadly utilized and recent speculations of hierarchical change are Lewin's model, Lippitt's model, and the model based on institutional hypothesis. With regards to e-government, institutional theory specifically has been connected by different researchers, for example, Kim, et al. (2009) concentrate the usage of electronic administrations. The following segment examines a portion of the significant speculations for understanding change in an e-government setting.

3.1.1 Change management theories that are relevant to e-government

As highlighted in the previous chapter, executing change requires a sound comprehension of how to approach the 'change,' and the subsequent impact on the association. One of the early and most broadly utilized hypothetical models for understanding change is Kurt Lewin's change hypothesis (Lewin, 1951; 1958). This model comprises three stages during the time spent evolving conduct – these involve: unfreezing the present formative stage, development, and refreezing stages. The first step in Lewin's model is the unfreezing stage. Unfreezing is

characterised as taking individuals from a state of being unready to change to being prepared and willing to make the initial step (Lewin, 1951; 1958). A portion of the exercises that can enable unfreezing (the first phase/step) is inspiration building, building trust and support in perceiving issues (Robbins, 2003). The second stage in Lewin's model is the idea that change modifies the transition. In this stage, getting new data leads to the advancement of new demeanours, convictions, qualities, and practices being achieved. The change can be executed after monitoring and limiting the safe strengths and boosting the effect of the main impetuses. Thus, the change is actualized by travelling toward the coveted position by modifying the position of balance. Lewin's third and final step is refreezing, (i.e.) the making of a routine for the new request. This progression is planned to maintain the framework after the change has been actualized and to coordinate the new esteems among group esteems and customs.

While Lewin's change hypothesis can comprehend the inward hierarchical level changes that administration establishments should execute with regards to e-government, it is to some degree restricted in extension to value the complexities of a developing idea, for example, egovernment. In this regard, Lippitt, et al. (1958) augmented and altered Lewin's three-stage change hypothesis keeping in mind the end goal, which is to catch a more point by point picture of inward hierarchical change settings utilizing seven phases (Kritsonis and Student, 2004). The stages are exploring, passage, finding, arranging, activity, adjustment, assessment, and lastly to organize (Lippitt, et al., 1958). In terms of alternate speculations mentioned previously that are important in an authoritative change setting, the frameworks hypothesis concentrates on the multifaceted nature and reliance between the gatherings of exercises or parts that shape a framework (Luhmann, 1994). From a slightly different angle, hierarchical unpredictability hypothesis recommends that change can be influenced by elements, for example, ecological impacts, individual viewpoints, and properties of the conduct itself (Robbins, 2003). Then again, Ajzen and Fishbein's hypothesis of contemplated activity expresses that "individual execution of a given conduct is fundamentally controlled by a man's goal to play out that behaviour" (1980, p.52). While the previously mentioned hypotheses concentrate to a great extent on interior authoritative and individual behavioural angles that impact the execution and acknowledgment of progress, e-government related change on open foundations can be affected by various external factors/variables that are much more confounding than the internal effects that affect more regular hierarchical change activities. In this manner, understanding egovernment affected change, and elements affecting such a change ought to consider the external viewpoints that may have an impact on the organization. In this specific situation, institutional theory offers a helpful, reasonable focal point that has been utilized before to

concentrate hierarchical change in an open part and e-government setting. Institutional theory catches the political and social viewpoints impacting hierarchical change from both an internal and external point of view. It comes as no great surprise that these two measurements are more overwhelming in an e-government setting, as highlighted by various distinctive specialists (e.g. Weerakkody and Dhillon, 2008). The methodology of e-government implies that it is at the focal point of and encompassed by legislative issues, both from an institutional viewpoint, and additionally from an administrative or national point of view. Additionally, the bureaucratic way of government organizations and the more extensive social impacts that frame these administrations, have a noteworthy influence in moulding the character of usage. The political angles that impact e-government from an institutional viewpoint have been distinguished by Kim, et al. (2009) and Yildiz (2003). Likewise, social measurements have been distinguished by various e-government specialists (Kim, et al., 2009; Al-Gahtani, et al., 2007). In this way, given the close relationship of these two measurements on e-government, a more detailed/precise examination of institutional theory and how it might encourage a superior comprehension of the developing idea of e-government is required in order to promote examination and legitimacy. Since all foundations are encompassed by an arrangement of social, political, financial and legitimate settings, institutional theory is viewed as being most conspicuous in human science and political sciences writing (March and Olsen, 1989; Miranda and Kim, 2006; Coase, 1937), and financial aspects writing (North and Thomas, 1973; Coase, 1937) with many reviews having been written. Numerous researchers, for example Zucker (1977), Haveman (1993), Teo, et al. (2003), Tingling and Parent (2002) and Hu, et al. (2006) have used institutional theory to clarify the impact of different social, political and innovation marvels on associations. Cavalluzzo and Ittner (2004) examine how government associations frequently actualize administration control frameworks to meet authoritative prerequisites, yet don't utilize these frameworks for internal enhancements. These creators utilize institutional theory to guess how the constrained see benefits acknowledged from commanded authoritative changes in government associations has a tendency to be typical, however have little impact on inward operations. Later reviews have used the hypothesis to clarify the effect of innovation on present day associations (Kim, et al., 2009; Liang, et al., 2007; Hu, et al., 2006; Teo, et al., 2003; Yildiz, 2003; Tingling and Parent, 2002). Specifically, the political, social and innovation viewpoints that impact e-government affected change have been clarified by Kim, et al. (2009) and Yildiz, (2007) utilizing institutional hypothesis.

3.1.2 Institutional Theory

As per Scott (2001), the work of Berger and Luckman in 1967 is the reason for the present-day institutional hypothesis. Berger and Luckmann (1967a) contend that social reality is a human development made through association. In addition, as others change speculations, institutional theory has clarified the reasons why authoritative structures and qualities persevere (Robey and Boudreau, 1999). Be that as it may, Bjorck highlights that, "Scholars have not conceded to [a] single and general meaning of an 'institution' in the institutional school" (2004, p.2). Scott endeavours to characterise organisations and states such that "[i]nstitutions comprise … intellectual, standardizing, and regulative structures and exercises that give solidness and [that are intended for] social conduct. Establishments [are] transported by different bearers— societies, structures, and schedules—and they work at many levels of jurisdiction" (1995, p.33). Johansson distinguished establishments as "… structures in light of pretty much underestimated, formal or casual, decides that limit and control (or support) social behavior" (2002, pp.17-18).

In addition, Davis and North (1971) contend that an organization is encompassed by an arrangement of social, political, financial and, legitimate settings. Institutional theory is viewed as most noticeable in writing in the fields of humanism (Zucker, 1977), political science (Miranda and Kim, 2006), and financial aspects (Hodgson, 1995). A large number of these guidelines defended myths that are accepted, yet not testable. They begin and are supported through the general conclusion, instructive frameworks and laws. Moreover, King, et al. (1994) and Butler and Murphy (1999) have utilised hierarchical and sociological viewpoints to inspect the advancement, execution, and utilisation of data frameworks and data innovation (IS/IT) in associations. Also, Scott (1987) and DiMaggio and Powell (1991) contend that institutional theory has many roots and has been embraced by and connected to various zones of study. Moreover, Bjorck argues that "social and cultural strengths are a piece of any condition and institutional theory fills these holes. In this manner, heaps of the ecological powers on associations are not in light of productivity or adequacy but rather therefore on social and social forces" (2004, p. 1).

Thus, a hypothesis comprises three systems: administrative (stemming from the formal and casual weight to adjust to government as principles or laws), mimetic (arising from associations that attempt to resemble different associations in unverifiable situations to decrease a hazard or the longing of one association to resemble another), and standardising (portrayed as the consequence of the polished methodology of authoritative performing artists, for example,

chiefs and directors who are affected by the weight of social desires) (Scott, 2005; Currie and Guah, 2007; Kim, et al., 2009). Scott (2008) recommends that the association is systematised by the accompanying settings—social, legitimate, or political—as far as meeting the prerequisites for the standards, qualities, guidelines, and convictions maintained by society. Regarding e-government, the three instruments delineated above offer a decent system for assessing the weights which identify with the current enactment that determines laws and guidelines associated with e-administrations and other social impacts that shape the conduct and polished skills of open division workers. As far as imitating conduct, it is reasonable to recommend that—unlike aggressive business associations—government establishments will be less inclined to embrace such conduct to limit dangers.

Given the above discussion, it is apparent that many reviews have connected institutional theory to investigate how associations systematised by social, legitimate, or political settings meet the necessities for the standards, qualities, guidelines, and convictions maintained by society. In this manner, this examination embraces a comparable way to deal with and study e-government-related change by considering the important powers affecting usage from hierarchical, innovative, social, and political subjects. These components are discussed below from an institutional theory focal point in which the hypothesis is utilised principally as an edge of reference for arranging the inward and outer impacts on e-government execution.

3.1.3 Technology influence

In the customary writing of institutional hypothesis, IT is conceptualised as unfurling inside the progressions of the auxiliary and behavioral setting of the association to learning the better effectiveness of its business forms (Bjorck, 2004). Numerous analysts, for example, Teo, et al. (2003) and Liang, et al. (2007), have considered institutional theory to concentrate the effect of data innovation on hierarchical business forms. The selection of any new or creative innovation can regularly be clarified by ecological impacts that occur because of the association's different connections (e.g., with providers, clients, and representatives) (Teo, et al., 2003). Now it seems, those connections and their standards form the principle explanation for the dissemination of new IT rules (Teo, et al., 2003). Many explorers clarify the clients and providers' standards as "normative weights" (Kondra and Hurst, 2009). Be that as it may, as indicated by Silva and Figueroa (2002), the weight differs starting with one standard, then onto the next (i.e., the weight from clients is more grounded than that of providers). The combined weight from providers, clients, representatives, and different impacts was found to strongly affect the reception of advance. Moreover, from the administration's perspective, those weights have driven the government to receive online administrations and a few elements of ICT, for example, security and protection, and to utilise interoperability models for building e-government frameworks (Silva and Figueroa, 2002).

All the more as of late, institutional theory has been utilised to concentrate the effect of inward and outside impacts on vast scale IT execution. For instance, a review by Liang, et al. (2007) has indicated the impact of top administration in influencing the effect of institutional weights on IT osmosis in substantial scale undertaking frameworks. Different analysts, for example, DiMaggio and Powell (1983), Meyer and Rowan (1977), and Teo, et al. (2003), have all pushed the utilisation of institutional theory for distinguishing and looking at key institutional determinants of IT-based selection. Bjorck (2004) proposes institutional theory for the dependability of the institutional point of view in IS/IT security in associations. Orlikowski, et al. (1995) contend that people utilise institutional structures of connotation, legitimization, and mastery to understand the innovation. Kim, et al. (2009) utilised institutional theory as a scientific point of view to archive and assess the advancement of an e-government framework (an against defilement framework) in the Seoul metropolitan government. The review by Teo, et al. (2003) uses institutional theory as a focal point to comprehend the components that empower the selection in data innovation. Their review demonstrated that institutional weights have brought about a critical impact on the hierarchical expectation to receive a framework and the comprehension of institutional weights when examining data innovation advancements selection.

3.1.4 Social influence

Open associations that have presented electronic administrations have done so by drastically changing their hierarchical structures utilising the most recent developments in innovation (Bjorck, 2004). Grain characterises social structure as "patterned activity, collaboration, practices, and cognition" (1986, p.79). Davidson and Chismar say that social structures

regularly "become an underestimated part of social life" (2007, p.741). Given this unique situation, institutional theory clarifies how outside weights can control the information procedures of an association, bringing about activities that would eventually expand the nature of administrations and enhance consumer loyalty. By picking up clients' fulfillment, associations will have the capacity to decrease any negative outer weight of social conduct inside an e-government setting. This strategy will help open associations to change from current administrations to online administrations concerning social conduct. Deserving of note here is the outcome that change will have on the execution of new standards, strategies and authoritative procedures that identify with and shape social practices" (Liang, et al., 2007).

DiMaggio and Powell (1983) and Teo, et al. (2003) contend that, paying little attention to the specialised estimation of advancement, an association may itself adapt to a development of different associations to acquire status showing social wellness in a social structure. Ruler, et al. (1994) assert that an institutional domain is a social framework that makes utilisation of impact and control over other social elements a steady component of social life. Then again, Kondra and Hinings (1998) endeavour to build up a scientific classification of associations inside an institutional situation with a specific end goal of conceptualizing the ways in which associations react to the infringement of institutional standards and the resultant ramifications these activities have with respect to the potential for change. Finally, as indicated by Kim, et al. (2009), associations regularly make a move, as they are relied upon to take after-industry standards as opposed to monetary contemplations. Various researchers have found the common measurements of e-government related to institutional change contends that -e-government is associated with the social setting in which it is sent. This can immediately be seen in the way innovation can affect that social context. In addition, Liao and Jeng (2005, p.505) contend that public organisation includes arranging and actualising different strategies to tackle complex issues postured by the social, political, and financial environment. Along these lines, critical social, hierarchical, and specialised difficulties should be seen and these endeavours should be beaten to achieve administrative change (Affisco and Soliman, 2006). This is quite significant, as what looks like innovatively determinist research to one individual may look like socially determinist research to another (Heeks and Bailur, 2007, p.245). Accordingly, given the close relationship of these two measurements on e-government, a closer examination of institutional theory and how it might encourage better comprehension of the developing idea of egovernment requires additional justification.

3.1.5 Political influence

As per the conventional view, institutional theory identifies with shaping new principles, methods, courses of action, and activities which are required to create a fruitful association (Shepsle, 1986). Those new activities and game plans will affect the choices and conduct of pioneers and leaders in the association (O'Donnell, et al., 2003). Solid government bolstering, political initiative, and legal and administrative issues are basic at all levels of government, with a specific end goal of accomplishing open division change. This initiative must incorporate individuals who comprehend the e-government vision and its effect on the nearby, territorial, and national parts of government (O'Donnell, et al., 2003). Once the association is changed, the new state of the association will impact existing social standards and lawful methodology, and individuals from society (nationals on account of e-government) will be affected by those new guidelines and strategies (Scott, 2001). Along these lines, sound practices and strategies turn out to be promptly acknowledged as genuine and judicious to accomplish hierarchical objectives (Meyer and Rowan, 1977).

DiMaggio and Powell note that "organizations contend, not only for assets and clients but rather for political power and institutional authenticity, for social and also monetary fitness" (1991, p.66). They characterise institutional isomorphism as the procedure of homogenisation among individuals from an authoritative populace emerging from regulative and regularizing weights and from the expert administration. In a review by Kim, et al. (2009), it was discovered that the use of an open e-government framework has demonstrated that administrative measurement was best and the solid initiative was pivotal to its prosperity. On the other hand, Keohane and Martin (1995) utilise institutional theory to investigate how universal relations function amongst nations and between worldwide associations.

The new activities and game plans affected by the authoritative change that occurs in egovernment will likely affect the choices and conduct of pioneers and leaders in the association (Irani, et al., 2003). In this way, stable government bolstering, governmental administration, and lawful and administrative issues are basic at all levels of government, keeping in mind the end goal to accomplish open area change. This authority must incorporate individuals who comprehend the effect of ICT on open part change and its effect on the group (Irani, et al., 2003; Weerakkody and Dhillon, 2008). In the review by Kim, et al. (2009), the creators found that the use of open electronic frameworks in the general society division has demonstrated that administrative measurement was best and solid authority was critical to its prosperity.

3.2 Factors influencing e-government implementation: E-government from literature perspectives

From an e-government usage point of view, many difficulties and subjects have been discussed in 'e-government' literature. However, not many reviews have utilised a formal hypothetical premise to clarify how and why they have characterised these difficulties/topics in a certain and additionally specific way. A close examination of the e-government literature uncovers the fact that, while distinctive analysts have distinguished different elements that affect egovernment execution, these elements can be comprehensively ordered under the three broad subjects of technological, social, and political, as discussed above (highlighted as being from an institutional hypothesis point of view). To better comprehend the makeup and impact of these three wide subjects on e-government execution, current e-government writing is analysed in detail to distinguish the difficulties and complexities that can be characterised under each of the topics. This literature examination is delineated below.

3.2.1 Technical influencing e-government implementation

• Information Technology (IT) Standards

Innovation gauges are a necessity for e-government execution. The literature has distinguished many deterrents that block community endeavours between government organisations (Fedorowicz, et al., 2009). It is basic for various government offices to have distinctive, inconsistent equipment and programming that may not work, coordinate, and interoperate together; this may prompt e-government execution troubles. As noted by Layne and Lee (2001), e-government usage is relied upon to provide the entrance to natives and different clients from one single coordinated portal. Likewise, it requires that partaking government organisations share their information to serve and accomplish the residents or e-government framework clients' needs. In this manner, data innovation measures are expected to maintain a strategic distance from any equipment and framework boundaries that would frustrate the use

of e-government frameworks. Sharp and Klahr (1991) characterize measures as understandings of methods, arrangements, and interface benchmarks that help framework and equipment creators grow new administrations uniquely in contrast to each other, yet appropriately and perfectly for each other if required. Nyrhinen contends that IT benchmarks "dictate how IT assets are to be acquired, managed, and utilized within the organisation. Standards act as the glue that links the use of physical and intellectual IT assets" (2006, p.10). Consequently, to finish up, for fruitful usage of e-government, IT measures ought to be considered as a fundamental and compelling component from an e-government execution point of view.

• Security and privacy

Wilford (2004) contends that analysts in the field of e-government consider security and protection as one of the key difficulties for the usage of an e-government framework. Security issues usually comprise PC security, protection, and classification of individual information (Al-Khouri and Bal, 2007; Layne and Lee, 2001). Conklin and White (2006) legitimise that data put away in databases and frameworks remains extremely significant. For this situation, security and protection issues ought to be checked and looked into consistently. Disparaging the significance of this consideration can elicit unapproved access to delicate data and the loss of stockholders' trust, which may prompt disappointment in e-government execution. Along these lines, fabricating a strong trust condition by giving an abnormal state of information protection, information honesty, and client authorisation will guarantee electronic exchange security and online personality validation (Al-Khouri and Bal, 2007). Basic security administrations incorporate open key foundation (PKI), electronic marks, passwords, biometrics, and approach implementation instruments (Kaliontzoglou, et al., 2005). Zweers and Planque (2001) indicate that security and protection was one of the four most essential issues in USA e-government execution.

• System integration

Layne and Lee (2001) separate system combination into two types: vertical and flat. They clarify that vertical joining is the place where neighbourhood frameworks connect to more elevated amount frameworks and smaller inside functionalities, though an even mix incorporates a framework crosswise over various capacities, which would provide a full and

genuine 'one-stop shop'. This reconciliation accepts that all member organisation endeavours are joined (Al-Khouri and Bal, 2007). Moreover, the more mind-boggling and transformational e-government advancements are (Baum and Di Maio, 2000), the more joining is required among inward and outside applications (Zarei, et al., 2008). Al-Khouri and Bal (2007, p94) contend that "overall system integration is one of the biggest obstacles in e-government implementation". Numerous scientists have expressed the belief that e-government frameworks must interface vertically and on a level plane amongst front- and back-office data frameworks in various government offices for compelling one-stop conveyance of online administrations (Kamal, et al., 2009).

• E-Government portal and access

As in e-business, the accomplishment of online administration in e-government relies upon the instrument and instalment handle set up for administrations rendered by the administration (Wittmann, et al., 2007). In online instalment frameworks, the across-the-board accessibility of an instalment portal benefit 24 hours a day, seven days a week is one of the real advantages to clients (Deakins and Dillon, 2002). Trkman and Turk express the notion that "the assurance of a suitable institutional environment (the rule of law, credible payment channels, etc.), is an important prerequisite for the usage" (2009, p.417). Additionally, the instalment technique in online exchanges must be dynamic, secure, and available from any place on the planet. For instance, in Germany, the utilisation of the "Geldkarte" instalment is conceivable only in Germany and not universally, as the instalment procedure includes embedding a card into a card peruser, which is found only in Germany (Wittmann, et al., 2007).

3.2.2 Social influencing e-government implementation

• Employee-centric focus

E-government is about utilising innovation to grow better, more open subject-centred government services (Al-Shehry, et al., 2006). In this manner, e-government exercises ought
to concentrate on national needs and convey administrations that increase the value of the native (Parent, et al., 2005). Misra (2007) contends that constitutional-driven government is one of various essential criteria that make e-government extraordinary from conventional types of administration conveyance. Moreover, Misra expresses that "it is necessary to define e-government afresh and propose a stockholders-centric, criteria-based definition of e-government as a lodestar to guide the efforts of e-government policy makers and implementers" (2007, p.11). This view is echoed by Undheim and Blakemore who state that "e-government is concerned more with the procedure of "client insight": "Insight can be defined as 'a deep truth' about the customer, based on their behaviour, experiences, beliefs, needs or desires, that is relevant to the task or issue and 'rings bells' with target people" (2007, p.23).

• Awareness

The general community (or natives) frequently have restricted mindfulness about what egovernment is and what its advantages are (Al-Omari, 2006). This absence of mindfulness may keep the national from taking an interest in e-government services-driven organisations (Reffat, 2003). In this manner, the development and use of e-government will rely significantly on advertising and mindfulness (Reffat, 2003). Also, Morris and Venkatesh (2000) have determined that more established individuals regularly need mindfulness and have constrained trust in innovation. Furthermore, Fang (2002) said that administrations frequently have a tendency to collaborate more with the elderly because of the generation gap and absence of skill in the utilisation of present-day innovation. Along these lines, Choudrie, et al. assert that it is basic that "the importance of e-government services are exploited, and their benefits emphasised to the stakeholders" (2005, p.565). Given this specific situation, solid crusades are expected to advance e-government with a specific end goal to accomplish more resident cooperation and fruitful execution. These crusades would inspire and raise citizens' familiarity with e-government activities. Cases of such crusades may incorporate government-supported courses and workshops, mailed bulletins, the showing of publications and flags to residents out in the open (shopping centres), etc. Likewise, promoting the advantages of e-government through open media benefits would urge residents to be more included, persuade them to utilise e-government, and bringing to light issues of taking an interest in e-government servicessupported organisations (Weerakkody and Choudrie, 2005).

• The digital divide

The digital divide occurs in the gap between individuals who can get to and utilise ICT and those individuals who cannot, with respect to ethnicity, sexual orientation, age, wage, dialect, and social partitions (Im and Seo, 2005). Then again, Silcock stresses that the "[d]igital divide is not so much a question of access, but of education. You can put computers in libraries, for example, but they are not going to be used by those who do not have the know-how" (2001, p.7). Marchinonini, et al. (2003) sort advanced partition into three types: access to data, exchange administrations, and subject support. In this manner, e-government authorities ought to know about the 'digital divide' that exists, and they can help in giving multi-channels of access to innovation. Giving PC proficiency instruction to natives, particularly to the elderly and less-PC-proficient clients, will guarantee that the computerised separation is limited (MIIIT, 2006). Helbig, et al. contend that e-government and the advanced separation are interlaced social marvels hypothetically and for all intents and purposes. Furthermore, they determine that "the market will eventually close the perceived gap over time and that public intervention is not necessary" (2009, p.91). Also, a few researchers indicate that the computerised gap can be comprised of various structures:

- global divide,
- social divide,
- democratic divide,
- skills divide, and
- economic opportunity divide (Mossberger, et al., 2003).

3.2.3 Political influencing e-government implementation

• Government support

Aside from government beating administration responsibility, support is firmly required throughout the execution of an e-government extension. It requires nonstop endorsement and responsibility from an expert to support and proceed with no unforeseen postponements or venture disappointments (Heeks, 2003). Creators, for example, Weerakkody and Dhillon (2008), and Irani, et al. (2007), propose that top chiefs ought to completely comprehend the important destinations of e-government and the related advantages. Moreover, the inclusion and support of the administration's top experts would empower e-government authorities to execute the venture with more certainty. This will create larger amounts of achievement and

maintain a strategic distance from issues, for example, imperviousness to change, an unclear position, and top administration instability of the e-government extension (Zarei, et al., 2008, et al., 2006). Chen and Gant contend that "continual top management support is necessary for dealing with possible initial resistance and ensuring interdepartmental communication and cooperation" (2001, p.343).

• Funding

Scientists, for example, Okiy (2005) and Eyob (2004), contend that the significance of financing better administrations cannot be over-emphasized. Subsidising encourages the framework (for example, building, innovation, HR) expected to execute e-government and achieves the related targets and points of reference in terms of e-government usage. Also, Gottipati (2002) contends that the way in which e-government tasks are assessed and financed in the Arabian inlet is that such activities seem to be regarded as spending-plan-based as opposed to seeing those ventures as venture-based spending plans. Additionally, as already stated, e-government activities are long-haul ventures; this way, they require long-haul budgetary support from the administration. Moreover, Eyob (2004) states that it is a noteworthy test, particularly when the subsidising must originate from an administration in which political impact may meddle with choices taken by abnormal state authorities (in the same place).

• Leadership

Initiative in an e-government setting is firmly connected to the political setting, as achievement relies on the level of duty and the creative vision of lawmakers (or government authorities) who administer a nation at the time of e-government usage (Heeks and Stanforth, 2007). Murphy characterises pioneers as "people to whom others turn when missions need to be upheld, breakthroughs made, and performance goals reached on time and within budget" (1996, p.1). E-government tasks are long duration activities, and in this manner require solid initiative to keep away from general challenges. The inquiry has distinguished initiative and vision as fundamental elements for the achievement of e-government ventures (Elnaghi, et al., 2007; Ke and Wei, 2004). In this regard, original pioneers give imaginative answers for subjects and organisations (Hunter and Jupp, 2001). Likewise, Denison, et al. (1995) express the notion that successful pioneers express more unpredictable and oppositional conduct than

inadequate pioneers. Zairi claims that "Nowadays leadership is considered as a must for survival. It comes from the level of inspiration, commitment generated and corporate determination to perform" (1994, p.9).

• Legislation and legal

Akomode, et al. express the notion that "the concept of e-government is radically changing the way the public sector is doing business, new legal issues continue to arise" (2002, p.45). The e-government framework requires various directions and administrative acts to adapt to the progressions caused by e-government frameworks. These enactments may incorporate electronic marks, chronicling information security, anticipating PC violations and programmers, and the Freedom of Information Act. Heeks (2001) cleared up the fact that administrative changes are required for a large group of exercises, from acquisition to administration conveyance. Also, legitimate dangers as far as innovation goes may open organisations to genuine liabilities (Watts, 2001) and, in this way, new e-benefit authoritative acts must be created and occasionally refreshed to maintain a strategic distance from unexpected outcomes or the deferral of undertakings. Inability to do this may cause an advance in e-government to be seriously deferred and thwarted. A good example of this is in the UK, where, as indicated by Bonham, et al. (2003), the advancement of e-government is upset by the nation's information security and protection laws.

Drawing from the previously mentioned hypothetical contentions, themselves drawn from institutional hypotheses and the writing on the e-government examination, and the applied scientific categorization that maps the key elements affecting the execution of e-government under the four expansive topics of authoritative, innovation, social, and political as proposed in challenges confronting e-government, the accomplishment of any execution must be assessed against the selection of the administration's actualization. As delineated, one of the destinations of this exploration is to investigate the connections that exist between the different features of execution and appropriation, such as the associations and crevices between the administration provisioning or supplier (government institutions) and utilization or client (employees).

While this segment investigated the execution viewpoints, the following segment will look at the reception of variables affecting e-government.

3.3 A conceptual model for e-government implementation in Kuwait

The writing and hypothetical examination offered above, and its association with institutional theory, provides a reason for proposing a theoretical model that maps the Technological (section 3.1.3), social (section 3.1.4), and political (3.1.5) topics in Figure 3.1 (below). This model suggests a reference for directing the experimental research in this proposal, to investigate the variables affecting e-government execution in a Kuwaiti setting (Figure 3.1). Specifically, the calculated model will offer the general structure and direction on the key lines of the request for investigating the outer and inward difficulties confronting the Kuwaiti government (organizations) amid its e-government usage activity.



Figure 3. 1 A conceptual model for challenges involved in implementing E-government

The applied model in Figure 3.1 (above) mirrors the discoveries of a large portion of the egovernment initiatives that have examined usage challenges. The applied model mirrors the execution-related elements or client (residents).

While this segment dissected the execution angles, the following segment considers the reception of components affecting e-government.

3.4 E-Government adoption: The employee's perspective

Like some other innovation or authoritative idea, the acquaintance of e-government with a nation will bring about various difficulties for the subjects and the administration, such as a lack of access to e-administrations, security concerns, putting stock in, individual contracts, and advanced gap. These are difficulties that can affect interest and subsequently impede the appropriation of e-government services-driven organisations.

This section highlights the requirement for studies that explore the selection and natives' conduct of e-government services-supported organisations and looks at the hypotheses that clarify innovation appropriation applicable to this examination. Furthermore, it proposes an applied model that maps the key variables affecting e-government reception from a subject's point of view.

3.4.1 Technology adoption theories

The investigation of appropriation, and its utilisation, is thought to be a developed range of research inside the information system train (Venkatesh, et al., 2003). Throughout the past three decades, various specialists have embraced, changed, and approved numerous hypothetical models with a specific end goal of comprehending and anticipating innovation acknowledgment and use (Venkatesh, et al., 2003). The models that have been taken and utilised from another train and created by IS scientists incorporate the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975), the Theory of Planned Behavior (TPB) (Ajzen, 1985; 1988; 1991; Ajzen and Fishbein, 1980), the Technology Acceptance Model (TAM) (Davis, 1989), and the Diffusion of Innovation Theory (DOI) (Rogers, 1995). Venkatesh, et al. (2003) contend that specialists can choose an appropriate and supported model and overlook

the commitments from option models. This drove Venkatesh, et al. (2003) to audit, talk about, and coordinate components crosswise over eight unmistakable client acknowledgment models (TRA, TAM, the motivational model, TPN, a model joining the technology acknowledgment demonstration and the TPB; MATH, DOI, and the social psychological hypothesis) that brought about the proposing of the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, et al., 2003). Some of these hypothetical models are considered to be and accepted as the heartiest and most critical in depicting IT/IS selection conduct.

The accompanying passages offer a short clarification of these innovation acknowledgment speculations.

3.4.2 Theory of Reasoned Action (TRA)

Ajzen and Fishbein built up this behavioral hypothesis in 1980. This model is to be viewed as the foundation of studies related to state-of-mind conduct and is generally utilised as a part of scholarly and business inquiry (Ajzen and Fishbein, 1980). The hypothesis of contemplated activity (TRA) has two determinants with respect to aim demeanour towards conduct and subjective standards related to conduct. This hypothesis is a general research goal hypothesis that has been utilized to clarify and foresee human conduct (Ajzen and Fishbein, 1980). Suh and Han (2003) guarantee that this hypothesis is utilised by data framework scientists to concentrate the determinants of IT advancement utilisation conduct. Most writing identified with innovation acknowledgment started its examination with the hypothesis of contemplated activity.

3.4.3 Theory of Planned Behaviour (TPB)

This hypothesis (TPB) was created by Ajzen in 1985 and was proposed as an augmentation of the TRA. The TPB presented a third free determinant of aim, called saw conduct control, notwithstanding the other two TRA determinants (Ajzen, 1985; 1991). It was proposed to affect conduct—notwithstanding states of mind—to utilise subjective standards and saw behavioural examples. Basically, TPB is a hypothesis that predicts deliberate conduct; Chau and Hu (2002) guarantee that TPB is thought to be broader than TRA in light of the additional determinant, saw conduct control.

3.4.4 Innovation Diffusion Theory (IDT)

The advancement dispersion hypothesis (IDT) has been utilised since the 1960s to portray and contemplate developments running from agrarian devices to authoritative completion of Information Systems (Lu, et al., 2003). IDT was continuously adjusted and created until the best model was presented by Rogers (1962; 1995).

The Rogers (1995) model has five phases:

- Information happens when an individual is presented with a development and knows how it works.
- Influence happens when an individual structures an ideal or troublesome disposition toward the advancement.
- Choice happens when an individual ends up noticeably occupied with exercises which deduce the choice of actualising, or dismissing, the development.
- Execution happens when an individual moves a development into utilisation.
- Affirmation happens when an individual might want to fortify him/herself for a development officially made, or turns around a prior choice to embrace.

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

Venkatesh, et al. (2003) brought together and finished the different models of IT acknowledgment, which incorporated the components of eight surely understood models (TRA, TAM, Motivational Model (MM), TPB, the joined TAM-TPB, the model of PC usage, the Innovation Dispersion Hypothesis (IDT), and the Social Subjective Hypothesis (SCT) into a Unified Theory of Acceptance and Use of Technology (UTAUT).

UTAUT creates a huge change in our comprehension of client acknowledgment. Be that as it may, the early UTAUT concentrated on extensive associations.

Hat (2005) has received broad support through approval, application, and replication for its energy to foresee the utilisation of data frameworks (IS) and is thought to be the most powerful and persuasive model clarifying IS reception conduct (Davis, 1982; Venkatesh, 1996). Then again, it has been discovered that TAM rejects some essential wellsprings of fluctuation and does not consider difficulties, for example, time or cash requirements as components that would keep a person from utilising a data framework. Furthermore, TAM has neglected to provide significant data about the client acknowledgment of a specific innovation because of its consensus (Matheison, et al., 2001). Subsequently, various altered TAM models were proposed, which are material to contemporary advancements (Horton, et al., 2001; Hu, 2001). In any case, scientists have gone up against a decision among a huge number of models. Consequently, another model was produced to address these constraints (UTAUT). The point of this model is to comprehend expectation/utilisation as a needy variable (Venkatesh, et al., 2003). The exploration demonstrates utilization as a part of this proposition to look at whether the nationals' appropriation of e-government is UTAUT.

UTAUT theory comprises eight hypothetical models: the theory of contemplated activity (Davis, et al., 1989), the technology acknowledgment demonstration (Davis, 1989), the motivational model (Davis, et al., 1992), the theory of arranged conduct (Ajzen, 1991), a model consolidating the technology acknowledgment display and the theory of arranged conduct (Taylor and Todd, 1995), the model of PC usage (Thompson, et al., 1991), the innovation dissemination hypothesis (Rogers, 1995), and the social intellectual hypothesis (Compeau and Higgins, 1995). The UTAUT theory joins these hypothetical models and comprises four centre determinants of utilisation expectation. Moreover, fewer e-government technology studies have been undertaken in developing countries. The UTAUT model has been found to be preferred to the abovementioned theoretical models, as it is able to account for a higher percentage of the variance (\mathbb{R}^2) in intended usage (Venkatesh, et al., 2003).

Venkatesh, et al. (2003) tried the brought-together hypothetical model in four diverse authoritative settings for a time of six months, and the review demonstrated noteworthy forecasts of aim (execution anticipation, exertion hope, social impact, and encouraging conditions), though the mentality toward the utilisation of innovation, self-viability, and nervousness was speculated to not be an immediate determinant of the goal.

In conclusion, the literature review has determined a number of factors that identify the adoption of e-government services in developed countries, for instance, usefulness, ease of use, perceived risk, trustworthiness, compatibility, external influence, safety, and interpersonal influence. However, little is known about whether these factors apply to developing countries. To address this gap, this study aimed to explore the factors that determine the adoption of e-government services in Kuwait, a developing country, through empirical data collection.

3.5 Research model and hypotheses for e-government adoption in the MoE in Kuwait

As discussed, these developments have been built up in the writing as striking indicators of innovation acknowledgment (Dwivedi, et al., 2008a; 2009; AlAwadhi and Morris, 2008; Al-Shafi, et al., 2009; Al-Shafi and Weerakkody, 2008a; 2009; He and Lu, 2007; Venkatesh, et al., 2003; Wang, 2003). These developers have accepted different names in e-government writing which are plainly sign-posted in writing already dissected. In this review, we utilise the names displayed by Venkatesh, et al. (2003) in UTAUT. Further discussion of each build is provided in the following area while figuring speculations for this exploration.

This review proposes the model which states that execution hope, exertion anticipation, and social impact all significantly affect the goal of utilizing e-government services-driven organisations. Moreover, the intention to utilise and facilitate conditions both have a critical impact on the use and conduct (of e-government services-supported organisations). The accompanying subsections provide portrayals of each development, alongside the hypothetical support for incorporating them into the reasonable model and the related speculations. In addition, the accompanying Figure 3.2 proposes the theoretical model for e-government appropriation in a Kuwaiti setting that researches the reception rate and residents' conduct of e-government services-driven organisations. It likewise demonstrates the connection between the free developments and the needy builds. These are represented in the accompanying Figure 3.2.



Figure 3. 2 E-government adoption research model [Venkatesh et al. (2003)]

• Performance expectancy

Execution anticipation is characterised by the extent to which people trust that utilising a framework will enable them to enhance their employment execution; it contains five factors: execution hope, outward inspiration, work fit, relative favorable position, and result desires (Venkatesh, et al., 2003). Venkatesh, et al. (2003) incorporated a comparable development, distinguishing saw handiness, result hope, relative favorable position, work fit, and outward inspiration builds (Davis, 1989; Compeau, et al., 1999; Moore and Benbasat, 1991; Davis, et al., 1992) into execution anticipation components.

In this review, execution anticipation is measured by the view of utilising e-government benefits as far as advantages, for example, sparing time, cash, and exertion; encouraging correspondence with the government; enhancing the nature of taxpayer-driven organizations; and furnishing natives with an equivalent premise on which to complete their business with the government (AlAwadhi and Morris, 2009).

Execution anticipation was observed to be a solid indicator of the aim to utilise IT as indicated by past acknowledgment considerations (Chang, et al., 2007; Venkatesh and Davis, 2000).

To clarify execution hope with respect to the expectation to utilise e-government framework/benefits, the researcher proposes the accompanying theory:

H1. Execution anticipation will impact behavioral aims to utilise e-government servicesdriven organisations.

• Effort Expectancy

Exertion anticipation is the level of simplicity related to the utilisation of the framework (Venkatesh, et al., 2003). Venkatesh, et al. (2003) distinguish three developments from the eight models that try hope: saw usability, multifaceted nature, and convenience. Furthermore, Marchewka, et al. (2007) guarantee that this development can be significant in deciding client acknowledgment of data innovation.

As indicated by Kijsanayotin, et al. (2009), the idea is like the apparent convenience development in TAM and the IDT models and the unpredictability of innovation build in the MPCU demonstrate. Numerous researchers (Thompson, et al., 1991; Chang, et al., 2007; Schaper and Pervan, 2007; Gupta, et al., 2008) found that exertion hope impacts the goal to utilise conduct. Conversely, Chau and Hu (2002) contend that exertion hope does not have a huge impact on the goal to utilise conduct.

In this examination, exertion hope is measured by the view of the usability of e-government services-supported organisations and also the simplicity of figuring out how to utilize these administrations. Accordingly, the researcher proposes the accompanying theory:

H2. Exertion anticipation will affect behavioural goals to utilise e-government servicesdriven organisations.

Social Influence

Social impact is characterised as the degree of a peer's impact utilisation of a system. Regardless of whether this is certain or negative, it is a vital figure for many residents and will likely be persuasive (Venkatesh, et al., 2003). Significant references—for example, a resident's family, partners, and companions—may affect national choices (Irani, et al., 2009; Tan and Teo, 2000).

The discoveries of numerous researchers like Rogers (1995), Taylor and Todd (1995), Lu, et al. (2005), and Pavlou and Fygenson (2006) propose that social impacts are a vital determinant

of conduct. Venkatesh et al. (2003) assume that if e-government adopters are impacted with positive messages by their informal communities, they will probably have a solid behavioural goal to embrace the e-government framework. Hence, the researcher proposes the accompanying theory:

H3. Social Influence will affect behavioural expectations to utilise e-government servicesdriven organizations.

• Facilitating Conditions

Encouraging conditions are how much an individual trusts that an authoritative and specialised foundation exists to bolster the framework (Venkatesh, et al., 2003). Encouraging conditions in the UTAUT involves saw behavioural control, encouraging conditions, and similarity from the TPB, TAM MPCU, and IDT models (Taylor and Todd, 1995; Venkatesh, et al., 2003). Researchers in the field of innovation studies (e.g., Moore and Benbasat, 1991; Chang, et al., 2007; Chau and Hu, 2002) found that the encouraging conditions develop positively and affect advancement utilisation. They likewise concluded that it is a noteworthy indicator of the innovation utilisation. Interestingly, they found that it did not anticipate an aim to utilise IT when both develop, execution hope and exertion hope, are utilised as part of a similar model. Inside this review, encouraging conditions were measured by the impression of having the capacity to get to required assets, and also to acquire information and the vital bolster expected to utilise e-government services-driven organisations. It is additionally affected by the impression of the innovation fitting into the client's way of life. To clarify encouraging conditions toward the conduct of e-government utilisation, the analyst proposes the accompanying theory:

H4. Encouraging conditions will affect e-government use and conduct.

• Behavioural Intention

Behavioural aim is characterised as a client's goal to embrace and utilize a specific instrument later on (Taylor and Todd, 1995; Venkatesh, et al., 2003).

As indicated by Irani, et al. (2009), the bulk of innovation appropriation inquiries has used conduct expectation to anticipate innovation selection. Additionally, Ajzen (1991) proposes that behavioural aim is tallied to affect selection. The estimation of behavioural expectation incorporates the goal and anticipated utilisation of e-government services-driven organisations. To clarify behavioural expectations toward the conduct of e-government utilisation, the specialist proposes the accompanying speculation:

H5. Behavioural expectations to utilise e-government services-driven organisations will impact e-government use and conduct.

• Sexual Orientation

Jackson and Scott (2001) characterise sexual orientation as a progressive partition amongst women and men implanted in both social foundation and social practices. Morgan (1986) contends that sex can be utilised as a graphic variable and, in addition, an informative variable. Various specialists (Choudrie and Lee, 2004; Morris and Venkatesh, 2000; Venkatesh, et al., 2003) have researched the part of sexual orientation in the selection and use of innovation. Past reviews have uncovered the fact that sexual orientation has an important impact while considering innovation selection and utilisation in a hierarchical setting. Venkatesh, et al. (2000) demonstrated that male clients utilise a PC more than females to show sexual orientation as a standout amongst the most vital factors while embracing innovation.

As per Morris and Venkatesh (2000), sexual orientation contrasts have appeared to exist in innovation reception settings. Moreover, sexual orientation fundamentally directs the impact of the determinants of the conduct goal. For instance, Venkatesh, et al. (2003) found that the impact of saw handiness on conduct aim was directed by sexual orientation. In this exploration, the researcher took after Dwivedi and Lal's (2007) recommendation that sex (as a social variable) can be considered a free factor to clarify the contrasts amongst adopters and non-adopters of innovation for this situation e-government.

To clarify sexual orientation with respect to e-government reception and utilisation, the researcher proposes the accompanying speculation:

H6. The adopters of e-government will come more from male than female sexual orientation.

• Age

Researchers (Venkatesh, et al., 2003) have discovered proof that clarifies the critical, immediate, and directing impact of age on behavioural goal, appropriation, and use practices. Venkatesh, et al. (2000) found in their review that the greater part age aggregate receiving PCs in the USA is 15-17 years, trailed by the aggregate of 26-35 years. Youthful and middle-aged gatherings are relied upon to be more unconcerned with reception, while the more seasoned age group is required to be more significant to the non-adopters. In this examination, the researcher adopted Dwivedi and Lal's (2007) recommendation that age (as a social variable) can be considered an autonomous variable to clarify the contrasts amongst adopters and non-adopters of innovation, for this situation, e-government. To clarify age with respect to e-government reception and utilisation, the scientist proposes the accompanying theory:

H7. There will be a distinction between e-government adopters and non-adopters of different age gatherings.

• Education Level

Burgess (1986; cited in Dwivedi and Lal, page 245) contends that people and subjects who have instructive capability will be more likely better to accomplish their occupation and receive promotion. Venkatesh, et al. (2000) suggest a positive relationship between the level of training, innovation proprietorship, and utilisation. Researchers (Choudrie and Papazafeiropoulou, 2006) have said that instruction is an important factor amongst the most essential drivers. In addition, Dwivedi and Lal (2007) contend that instruction can be considered an autonomous variable to clarify the contrasts amongst adopters and non-adopters of innovation, for this situation, e-government.

To clarify age with respect to e-government selection and utilisation, the researcher proposes the accompanying theory:

H8. There will be a distinction between the adopters and non-adopters of e-government in various levels of instruction.

The audit of writing on different innovation selection hypotheses and models recommended that the UTAUT model proposed by Venkatesh, et al. (2003) offers a hearty and thorough hypothetical system for inspecting a subject's reception of e-government services-supported organisations. Drawing from UTAUT, a reasonable research model was proposed in Figure 3.2 in chapter 3 section (3.5) that catches the most notable elements that may affect e-government selection and use as depicted in the writing.

3.6 A conceptual model for e-government implementation and adoption

In the previous section, the study/paper highlighted the key factors influencing both egovernment implementation and adoption. In the next section, the research from the two conceptual models resulting from institutional theory (for implementation, Figure 3.1) and UTAUT (for adoption, Figure 3.2) will be combined along with the e-government literature to propose a theoretical model that captures the associations between implementation and adoption in Figure 3.3



Figure 3. 3 Implementation and adoption e-government system—proposed research model

3.1 Chapter summary

This chapter has illustrated the challenges surrounding e-government using literature and theoretical contexts from the perspectives of implementation and adoption. It results in a conceptual model that interacts with a possible relationship between implementation and adoption of e-government. Moreover, it illustrates the main frame of orientation and possible lines of investigation for the empirical research that will be carried out in this thesis to explore the factors influencing e-government implementation and adoption in the ministry of education in Kuwait.

The following chapter outlines the methodological approach adopted for this research, providing justification for the choices made regarding data collection and analysis. Throughout the remaining chapters, the research questions, aims, and objectives will lead the way, moving toward a discussion of the results that bears in mind the body of literature reviewed in this chapter so far.

CHAPTER 4.

RESEARCH METHODOLOGY

This chapter defines and develops the research methodology for this thesis. The research methodology is a set of processes used to collect and analyse data (Walliman, 2000). Firstly, a review of research design will be conducted. Then, a discussion explains the justification for the selection of each layer from the onion design (see below). The author presents in detail the results of the empirical research methodology, which acts as a framework for conducting the empirical enquiry. Finally, the overall research protocol used for data collection and analysis is discussed.

4.1 Research Design

The research design dimensions are presented using three models developed by Crotty (1998), Kagioglou, et al. (2000) and Saunders, et al. (2015). According to Crotty's (1998) research design elements, in Table 4.1, research should be designed considering the answers to four questions: (1) What epistemology informs the research? (2) What theoretical perspective lies behind the methodology in question? (3) What methodology governs our choice and use of methods; and (4) What methods do we propose to use?

Table 4. 1 Research Design Elements as defined by Crotty (1998)			
Research Design Dimensions	Explanation		
Epistemology	Theory of knowledge embedded in the theoretical		
	perspective e.g. objectivism, subjectivism, constructionism		
Theoretical perspective	Philosophical stance e.g. positivism and post positivism,		
	interpretivism, critical inquiry, feminism, postmodernism		
Methodology	Strategy or plan of action that links methods to outcomes		
	e.g. experimental research, survey research, ethnography,		
	phenomenological research, grounded theory, action		
	research, discourse analysis		
Method	Techniques and procedures e.g. qquestionnaire, interview,		
	focus group, case study, statistical analysis, cognitive		
	mapping		

Kagioglou, et al. (2000) had a similar research design approach and proposed a nested approach to research modelling shown in Figure 4.1 below. The outer ring represents the research philosophy which guides the research approaches and research techniques illustrated in the inner circles. Research approaches refer to the methods for theory generation and testing such as case study, action research, survey, and experiment whereas research techniques refer to the data collection techniques such as interview, questionnaire, focus group, and observation.



The research design model proposed by Saunders, et al. (2015) introduced three additional layers to the nested research model. This model was referred to as the research onion, illustrated in Figure 4.2 below, since the six layers of the model resembled the rings of an onion.



Figure 4. 2 Research methodology based on the Onion Model (Saunders et al., 2012).

When all of these three models are investigated, the similarities and differences are easily noticed. Although there is a Research Approach layer in both of the nested research model and the research onion, they refer to different concepts. The research approach in the nested research model corresponds to the research strategies in the research onion. Table 4.2 shows how the research design elements overlap in the models proposed by Crotty (1998), Kagioglou, et al. (2000) and Saunders, et al. (2015).

Table 4. 2 The Comparison of elements in the Three Research Design Models			
Research Design	Nested Research Model	Ring Onion	
Elements (Crotty, 1998)	(Kagioglou et al., 2000)	(Saunders et al., 2015)	
Epistemology	Research Philosophy	Research Philosophy	
Theoretical perspective			
		Research Approaches	
Methodology	Research Approaches	Research Strategies	
		Time Horizons	
		Choices	
Method	Research Techniques	Data collection methods	

As such, the six layers of the research onion model will be used as an outline for the explanation of this research methodology design. This model was chosen due to its clear and systematic nature.

4.2 Research Philosophy

The research philosophy deals with the terms that are linked to the production and understanding of knowledge and the nature of this developed knowledge (Saunders et al., 2015). In the most general context, the research design deals with any particular problem or answers the question of the problem that is under consideration (Saunders, 2015). These studies generally start with the generation of data and gather it on the basis of the needs and demand of the research and the type of project or question. Moreover, they also focus on what kind of data that will be needed during the entire research process (Saunders, 2015).

The process of generating this data might deal with a number of data collection techniques that can deal with varying degrees of participation, including questionnaires, observations, interviews, the use of already presented studies and analysis of already given data (Saunders, 2015). As stated by Saunders, et al. (2015), when thinking about philosophies it would be easy to fall into the trap of thinking that one research philosophy is 'better' than another. However, different research approaches are suited to achieving different aims. These different philosophical stances indicate the foundational way in which the research is conducted. The choice of philosophical approach is important as it informs decision-making concerning the ways in which the research is conducted, including how data is generated and analysed. It is

for this reason that the philosophical stance is depicted as the outer layer of the onion model – it is the foundation upon which the research methodology is constructed. Three of the primary research philosophies are outlined below.

Understanding research philosophy, therefore, can help in research design. There are three major ways of thinking about research philosophy: epistemology, ontology, and axiology. Researchers are found to relate research philosophies differently.

• Ontology

Ontology is concerned with nature of reality. Its deal with what makes an acceptable knowledge of the particular research process and deal with the question of if the research will play any beneficial role in the development of the social settings in any way. Analysts are found to relate explore methods of insight in an unexpected way. For instance, Sexton (2003) relates philosophy predominantly with authenticity and optimism, and maps objectivism and subjectivism in connection to the cosmology and epistemology. In any case, as indicated by Saunders, et al. (2012) there are two parts of metaphysics which are probably going to be acknowledged as creating legitimate information by numerous scientist (Saunders, 2012). The main viewpoint is that objectivism manages the presence of social substances in the outside substances to the social performing artists. The second viewpoint is subjectivism, which holds the social wonders are made through the recognition and resulting activity of influenced social performing artists (Saunders, 2012). In view of the particular setting of this exploration which is to investigate the level of correspondence in the service of instruction, this research project leans towards a subjectivism philosophical stance, as it gathers different perspectives from employees to gain insight into the adoption of e-government systems, and how they could be improved.

• Epistemology

Where ontology is the theory of reality, epistemology is the theory of knowledge – the ways in which we come to know the facts that we take to be *reality*. Epistemology concerns what constitutes acceptable knowledge in a field of study. Sutrisna (2009) writes that epistemology views the theory of knowledge with regard to its methods of acquiring knowledge in the assumed reality. Saunders, et al. (2012) state that there are three contrasting positions under epistemology considerations, namely positivism, realism and interpretivism – these philosophical frameworks are outlined below. Each of these three philosophies has a different way of *knowing* what constitutes the 'facts' and therefore what constitutes the frame of 'reality.'

Positivism

Positivist philosophers think that reality is stable and can be described as well as observed (Aliyu, 2014). The philosophy of positivism has a long tradition and is commonly associated with the empirical sciences because of the fact that this philosophy positions the researcher as independent from the subject of the research, a benign observer rather than an engaged participant. Like realism, positivism is the subject of division and debate, however it is generally agreed that positivism is an 'evidence-based' philosophical approach to research.

• Realism

Realism refers to a commonly experienced external reality with predetermined nature and structure. This research philosophy assumes that a fixed reality exists independent of the human mind, unaffected by personal biases or prior knowledge.

As with all philosophical positions, realism as an approach is further divided into subcategories. Not only is realism broken into either direct or critical realism but neo-realism has also been developed as a more critical realist approach to research. Pring (2000) suggests that there exists a 'false dualism' between a type of naïve realism and radical relativism and thus he posits his conception of neo-realism as an antidote to such divisional philosophical standpoints. Scott observes that there has been much debate concerning Pring's neo-realist approach to research.

Scott offers an alternative to such neo-realism, positing a critical realism that he argues is "better able to account for the socially constructed and non-solipsistic dimensions of reality" (2005, p.644).

Realism and its correlate, positivism, are generally employed in studies that utilise quantitative data, making fundamental assumptions about the real facticity of, for instance, numbers.

• Interpretivism

According to Saunders, Lewis and Thornhill (2009), the interpretivist's philosophical stance reflects an entirely different, or rather an opposite position to the positivist's epistemology. It argues that the subjective interpretation of any particular intervention can only really be understood completely. Interpretivism is frequently posited as the social science in opposition to the natural sciences, appealing to the individual perspective of the researcher and the subjective quality of their data analysis. As such, there is an apparent binary in research between the positivist and interpretivist approaches. The interpretivist approach suits this research project as the problem of the study is concerned with both qualitative and quantitative results. Moreover, due to the nature of the research problem, which captions the reality from employees to understand the challenges they face. However, this will be offset by a positivist engagement with quantitative data.

This research will follow the interpretivism epistemology philosophy due to the nature of the research problem which caption the reality from employees, managers, and IT employees in order to understand the type of problems and the nature challenge.

• Axiology

Axiology is that which takes into account individual values and bias into these broad philosophical frameworks. Saunders (2009) notes that scientists show 'axiological expertise' by having the capacity to verbalise their qualities as a premise of making judgments about their enquiry. Heron (1996) writes that axiology is the likelihood of composing your own announcement of individual values in connection to the point you are contemplating. The axiology of the researcher influences their partiality to certain research methodologies over

others, as well as to certain data sets over others – which evidently has a profound effect on the final findings of the research. According to Saunders, et al. (2009), researchers demonstrate axiological skill by being able to articulate their values as a basis for making a judgment about research they are conducting and how they go about doing it. Heron (1996) contends that axiology is the likelihood of composing your own announcement of individual values in connection to the point you are contemplating. Axiology depends essentially on ideas of significant worth and is occasionally held to lay the foundation for the philosophical field (Topi, 2010). Additionally, there are two axiological positions. The objectivist stance that mirrors the research is value-free and unbiased, while in contrast the subjectivist stance refers to the research that was identified in the previous section. This implies the reality of the situation under research is continually constructed by the employee of the MoE, and that knowledge which could lead to a solution must be gathered through exploring the view of these employees through in-depth investigation for a rich and specific understanding of the data. Therefore, this research takes on the axiological standpoint in which research is value-laden.

Figure 4.2 (below) outlines the structure of these various philosophical frameworks, and indicates how they interact. The following section will examine how these philosophical foundations influence the development of the research strategies.

With all the layers of philosophical theories discussed, the next section will focus on addressing the research approach.

4.3 Research Approach

Research approaches form the second ring of the research onion. Saunders, et al. (2009) stated that the extent to which the researcher is clear about theory raises important questions relating to the research design. A researcher needs to choose which approach is most suited to the research design. There are two research approaches where theory is introduced: the deductive approach and the inductive approach.

Each approach has its advantages and disadvantages; therefore, it is not always clear which approach should be followed. These two approaches are elucidated below:

• Deductive

The deductive approach deals with the development of any firm hypothesis. The hypothesis generated is based on the already existing theories and is used to deal with the designing of the research strategies that deal with the testing of authentication of the given hypothesis (Soiferman, 2010). This approach is explained with the help of a given hypothesis and can drive from the proposition of the theory given. In such ways, one can say that the deductive approach is linked with the deduction of conclusions from the proposition. This approach begins with an expected pattern and is verified on the basis of observations (Soiferman, 2010). Experts inform that the deductive approach explains and deals with the exploration of any known theory or any phenomenon that has already been explained or tested with any given circumstances (Beiske, 2007). This type of approach follows the logic in the most prominent context and the reasoning starts with the theory that leads to the generation of a new hypothesis. These hypotheses are then placed to test and are comforted by the help of observations and thus lead to either confirm or reject on the basis of evidences generated or gathered (Snieder and Larner, 2009).

At the same time, deductive reasoning is explained as the reasoning that goes from general to specific (Pelissier, 2008). Where a deductive approach deals with the formulation of hypotheses and then proceeds to test this in the process of the research, the inductive approach works in an opposing fashion and does not deal with any kind of hypotheses in any way. The inductive approach is the antithesis of the deductive approach because the choices are made based on given and emerging circumstances.

This approach is not appropriate to the parameters of this study as there is no set hypothesis at the outset of the research, and there is no theory that this research is setting out to prove.

• Inductive

In terms of the inductive approach, another key point to bear in mind is that it is generally referred to in the research literature in the grounded theories. Theory is developed based on the conclusion from the findings and takes into consideration the unique characteristics of the prevailing context in the research (Saunders, 2003). At the same time, this approach necessitates that the researcher must begin with an open mind and think in different directions openly with no limitations and no preconceived thoughts about what might be found, or to be looking for something in particular. It can also be said that this type of research is finding the possible answers rather than finding a yes or no for any specific consideration or assumed answer or hypothesis.

Irrespective of the approach one uses, the first purpose of research should be to discover something new and then to set about employing certain methods which are appropriate for the study and can test the hypothesis (es) to either prove or disprove it/them. This should ultimately lead to successfully answering the questions that have been posed in the study.

• Abductive

As Saunders, et al. (2012) expressed if the specialist begins by gathering information to investigate a marvel and he produces or manufactures a hypothesis then he will utilize the inductive approach. However, in the event that he is gathering information to investigate a wonder, distinguish subjects and disclose examples to create another or alter existing hypothesis, which along these lines, he proceeds to test through extra information accumulation he is utilizing an abductive approach which is the case in this research.

For these reasons, this review has fundamentally utilised the abductive approach, (given the abundance of writing) which will use a survey that locates criteria of value usage of the e-government framework. The exploration could utilise a current hypothesis to plan an underlying calculated structure to analyse the accumulated information as new findings are found from the new variables, and the limit of the review structure. This can be extended to incorporate the new components that impact the execution of the e-government framework in Kuwait which has added to the improvement of the review- pointed key approach.

4.4 Research Strategy

The third ring of the research onion is concerned with the strategy employed in the research. This is primarily a case of developing a research strategy according to the characteristics of the research problem. According to Yin (2014), there are many ways to conduct research, as governed by the relationship between research questions and research strategy. Moreover, Sundra, Lewis and Thornhill (2012) classified the research strategies into seven categories and suggested that each of these have strengths and weakness no strategy is superior to another or cannot be used as part of another strategy.

These strategies are: action research, grounded theory, experiment strategy, ethnographical strategy, archival strategy, survey strategy and case study strategy.

As this research falls under the interpretivism and subjectivism stance and to answer the research questions and meet the objectives of the study, the researcher must examine three different approaches: action research, ethnography, and case study approach

• Firstly, an action research approach is an iterative process involving researchers and practitioners acting together on a particular cycle of activities. Such an approach is unique in the way it associates research with practice (Avison, et al., 1999). This forms a continuing action of planning, diagnosing, taking action and evaluating. Involving the employee (as the part of the research objects) throughout the research process is essential to implement the changes they have helped to create (Saunders, et al., 2016). Despite providing an in-depth understanding to a specific phenomenon, this strategy is inappropriate to achieve research objectives due to the lack of the access to implement intervention in the organisation.

• Secondly, ethnography is "a research strategy that is very time consuming and takes place over an extended time period as the researcher needs to immerse herself or himself in the social world being researched as completely as possible" (Saunders, et al., 2016). Since achieving these aforementioned factors is unrealistic and not practically possible for the researcher, this makes the ethnography approach unsuitable for this type of study.

• Thirdly, a case study approach is suitable for building theory and generating hypotheses (Amaratunga, et al., 2002). Further, due to the exploratory nature of the research, this research will adopt a case study data collection strategy as the most appropriate strategy for answering the research questions of this study. Furthermore, it will help to verify the research findings. A case study has been defined by Yin as "empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon

and context are not clearly evident" (2014, p.18). Both the 'what' type of exploratory questions and the 'why' type of explanatory research is covered by this approach. Miles and Huberman (1994) note that the combination of both quantitative (questionnaires) and qualitative (interviews and documents) data has been allowed in case studies to accomplish different aims and to serve different purposes. Yin (ibid) also supports this argument, contending that, "the case study's unique strength is its ability to deal with a full variety of evidence – documents, artefacts, interviews, and observations – beyond what might be available in a conventional historical study" (2014, p.11).

To sum up, as the philosophical stance of this research leans towards interpretivism and subjectivism, the use of experiments and surveys are unjustifiable. Experiments are mostly conducted in a laboratory setting under controlled environments where the context and the phenomena are separated (Yin, 2014). Experiments allow the identification of casual relationships through observing the effect of the dependent variable by controlling the independent variable. Likewise, with experiments, surveys are also related to the deductive approach (Saunders, et al., 2016). Collection of large amounts of data is facilitated by surveys in an economical way. Moreover, the research under consideration does not intend to change or influence the attitudes or procedures of the environment or the participants as does in action research. Nor does it intend to study physiology or behavioural patterns of the participants as in the case of ethnographical approaches.

According to Yin (2014), a research study could use more than one strategy and that each strategy must be suitable in specific conditions. So, the case study approach is suitable for this research to explore the current practices related to communication between ministries of education departments. The selection of case study has been justified in the above section by considering the nature of the study, the philosophical stance, and the research questions posted. More justification for case study selection and its benefits will be elaborated in the section that follows.

• Case study design

Having discussed why experiment, action research, and ethnography research approaches are not appropriate for this study (section 4.4), this section discusses the use of the case study as a research strategy and how the quality of this study will be enhanced by using such a strategy. According to the aim, objective, and research questions of this research, an exploration of the current practices related to communication within the departments of the MoE in Kuwait is required from this study. Different views of individuals will be identified regarding the criteria of good communication, challenges, strength, and weakness points facing communication in its various administrative functions.

Both qualitative and quantitative data can also be accommodated in case study research (Gerring, 2007; Yin, 2014). Although case study research presents many advantages to a research study as mentioned above, it also is frequently criticised for bias, lack of rigour, use of incomplete evidence, and for being expensive and time-consuming (Yin, 2014). This research will attempt to avoid such critiques through the use of a variety of different evidence-gathering techniques, such as interviews, observation, and document reviews (Saunders, et al., 2016; Yin, 2014). In addition, the richness of the collected data will be increased while creating the prospects for data triangulation.

Accordingly, the case study approach appears to be the most suitable method for this study, which caters for the 'what' and 'how' type research questions about a contemporary set of events, without differentiating between phenomena and context, where the researcher tends not to interfere with what is being studied.

• Single or multiple case study

According to Yin (2014), a case study can contain either a single or multiple study. He writes that a single case study approach is suitable when investigating critical, unusual, common, revelatory or longitudinal case. A multiple case study gives the researcher the opportunity to analyse data from within multiple different situations and data sets, as well as to compare and

contrast these sets of data against one another. Whilst the multiple case study method can be beneficial as it provides a larger body of data to examine, it is also more time-consuming and costly. It is also important to note that the multiple case study is often inappropriate as it does not add anything of further value to the single case. Once again, it is crucial that the research methods chosen are appropriate to the questions at the heart of the research and that they are aimed at successfully attending to these questions above any other objective.

Therefore, this research adopts the single case study. As the use of a single case study allows the researcher to gather a broad body of data and to examine the dataset internally, analysing different aspects of the results against one another to draw conclusions as to influential factors and changing variables. The use of the single case study in this research will also allow for causal links to be drawn between real-world experiences and the theoretical application of newly-developed framework for the MoE.

To conclude, this study was based on pragmatic considerations practicalities and a saturation of data limited the study to a single case study. The reason for that was, firstly, the study was looking to gain a better idea and understanding of e-government and its adoption and implementation issues. Secondly, because of the nature of the selected case study and the limitations of resources and time, the researcher would not be able to conduct several or multiple case studies within this study. Therefore, this study uses a case study strategy as it investigates the phenomena in one organization as a whole.

Yin (2014) differentiated between three various kinds of case studies. These are explanatory, descriptive and exploratory. Oates (2006) demonstrated that researchers have used exploratory case study to gain an insight into the research problem, when little research is conducted about the topic. On the other hand, descriptive case study is taken into consideration for generating rich and detailed information of the environment and phenomenon. However, explanatory case study is used to demonstrate that why specific consequences occur.

Additionally, the field of information systems makes extensive use of qualitative methods such as case study (Myers 1997), the case study method has been decided to be used by researcher for the current research.

In the e-government domain, all across the world and specifically in Kuwait, is considered to be a new subject field. Still, implementation is in initial phases and empirical preexisting researches about the perception of supply side stakeholders for the barriers and drivers that impact the emergence of e-government program in educational ministry of Kuwait are next to nothing. Hence, case study approach is most appropriate to study a phenomenon in which little researches have been carried out about it (Benbasat et al 1987).

Hence, it has been mentioned by Yin (2014) that case study is highly appropriate among other research methods, when researcher lays emphasis on traditional phenomenon which he/she has small command over. The method of case study research is appropriate for current study because it investigates the contemporary e-government phenomenon, on which there is no power or control of the researcher.

The next layer of Saunders' research onion is concerned with time horizons, which is detailed in the next section.

4.5 Time Horizons

Two different time horizons may be used when conducting research of this sort, either *cross-sectional* or *longitudinal*. Saunders and Tosey (2014) write that cross-sectional research is that which is undertaken to answer a question or address a problem at a particular time. This sort of investigation functions as a 'snapshot' of the situation, accounting for a moment in time, rather than claiming to represent the entirety of the scenario over time. Cross-sectional research is generally best served by research that makes use of strategies such as surveys and case studies. In contrast, longitudinal research is that used when answering a question or attending to a problem that necessitates data being gathered for an extended period of time. Research of this kind most often makes use of research techniques such as an experiment, grounded theory or archival research. The differences between these different time horizons are once again reflective of the research questions that guide the project. This research is not engaged in a long-term analysis of a particular problem or phenomenon, but rather, with the examination of a particular case at a given time.

For this reason, the time horizon utilised for the purpose of this research is cross-sectional, as a longitudinal review is impractical and inappropriate in order to attend to the research questions.

4.6 Research Choice

The two main categories for research choices are the mono-method and multiple method, according to Saunders, et al. (2016). The mono-method is the use of a single data collection technique and its corresponding data analysis procedures. In contrast, the multiple method is where more than one data collection technique and analysis procedure are used to answer the research questions of a study. In addition, multiple methods have been divided into mixedmethod and multi-method studies. Mixed-method is defined as using both qualitative and quantitative data collection techniques and analysing procedures in one research design. Meanwhile, multi-method is defined as using more than one method, either qualitative or quantitative, in a single study and analysing them in accordance with their relevant procedures (Saunders, et al., 2016). In social science, Bryman (2012) and Creswell (2009) argue that a researcher can adopt either objectivist or constructionist ontological positions or either interpretivist or positivist epistemological positions. In other words, qualitative or quantitative data or both have been involved in research choices. Saunders, et al. (2016) indicate that individual quantitative and qualitative techniques and procedures do not exist in isolation. According to Creswell (2009) and Onwuegbuzie and Teddlie (2004), there are critical issues for both quantitative and qualitative research that might cause bias, if used in isolation.

Therefore, in order to reduce the current gaps in each approach, the combination of both approaches in one main mixed approach is considered to be more beneficial for this study. As a result, the validity of the findings can be enhanced. Bryman (2012) notes that in the mixed research approach positive benefits can be brought by using different methods to collect data, since the weaknesses of any one method can be 'offset' by the strengths of another method.

One of the most well-known descriptions of mixed-methods research is by Creswell and Clark, who write that mixed-methods research is "a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone" (2007, p.5). This approach, adopting more than one method and more than one strategy for data collection has become increasingly familiar in academic research, where analytical rigour is of primary importance.

As a result of the complexity of the Ministry response processes and to understand the real situation of the phenomenon, one single strategy is not adequate, thus the mixed-methods strategy will be adopted.

The next layer of the research onion talks about research techniques, which is discussed below.

4.7 Research Techniques

Data collection procedures governing how data is analysed is also related to research techniques. With regard to data collection techniques, various data collection techniques can be employed during a case study research strategy, which is one of the main advantages of case study research. Six different sources of evidence could be gathered in case study research, namely, documents, archival records, interviews, direct observation, participant observation and physical artefact (Yin, 2014). Using multiple sources of evidence has been encouraged by Yin. Thus, an investigator can be allowed to address a broader range of behavioural, historical and attitudinal issues which lead to the development of a converging line of inquiry and a more accurate and convincing conclusion (Yin, 2014). Using multiple sources of evidence also encourages creating a case study database as well as maintaining a chain of evidence. The type of data collected can fall into two categories: primary data and secondary data (Saunders, et al., 2016). Primary data is that which the research itself engenders; it is data collected from within the research project itself, with the principle aim being to attend to the research questions at hand. In contrast, secondary data is that which is obtained from existing sources, be it from archives or other scholars working in the field. Secondary data is not that which is directly related to the research problem and yet it is just as important as primary data as it supports the construction of original claims and theories built from the analysis of both data sets.

4.7.1 Data Collection techniques
There are many data collection methods for case study and survey strategies. The case study data collection methods include, but are not limited to, interviews, observations, and past records. Survey data collection is conducted using questionnaires or structured interviews with the intention being to generalise from the sample to a population (Babbie, 1995; Creswell, 2004). It is widely acknowledged that interviews are the most widely used qualitative method in organisational research (King, 1994). Surveys operate on statistical sampling, which involves choosing a representative sample from a population (Fellows and Liu, 2004). Collecting data for surveys through questionnaires has strengths and weaknesses. The questionnaire is anonymous and helps to avoid interviewer bias, however, the researcher does not have any control over the conditions under which the questionnaire is completed (Neuman, 2005). Although it also has limitations such as low response rates, it does offer the opportunity to explore a broad range of issues such as those envisaged in this research. Therefore, the relevant methods of data collection to be used in this research are the interview and the questionnaire. In fact, it was not possible to use alternative methods other than the interview for this research. There were not any past records kept on the areas investigated by the research. Neither direct nor participant observation was carried out, since it would not be possible to get good quality data using observation in the cross-sectional case studies. Therefore, the relevant methods of data collection which can be seen in Appendix (A) and (B) are explained respectively.

• Semi-Structured Interviews

The interview can have three forms, namely: semi-structured, structured, and unstructured. The semi-structured interview is in between the structured and unstructured interviews. The interviewer can have a list of topic areas where the responses are recorded or can follow predetermined standard questions with some probing for clarifications and explanations. Therefore, semi-structured interviews were adopted for data collection to learn and understand the interviewee's perspective on the issue and to learn whether the interviewee can confirm insights and the information the researcher already holds.

Gillham (2000) recommends trialling the list of questions before going for the actual interview. The interview questions for the research were trialled many times before the final form was agreed upon, in order to check whether they all cover different facets of the topic, whether they are clear enough and whether there were any leading questions which might result in researcher bias.

Interpretation captures the essence of the lessons learned (Lincoln and Guba, 1985). These lessons can be the researcher's personal interpretation, a meaning derived from a comparison of the findings with literature review findings (Creswell, 2003). Therefore, the analysis of the interview data was completed by the interpretation of the results. The table below (Table 4.4), summarises the considerations for the interviews.

The main objective of this interview is to explore the factors that affect the implementation of e-government system as well as to understand the current use of the e-government system in the MoE. Moreover, it seeks to investigate the challenges that face the MoE regarding accepting the e-government system. As such, it was necessary to focus on the managers in each department and the employees in the MoE as well as with the IT staff of the MoE. The research will conduct the study on the managers in each department. As they have much experience in the department, this helps the researcher achieve a holistic understanding of the relationships between the government and employee in a G2E context.

Once the interview guide was developed and tested, the researcher began to identify the participants to be interviewed (the employees) form within the MoE. These interviewees were chosen from different managerial levels. The sample size was restricted to 20. All interviewees had the approval to participate in this study. The respondent's departments were as follows:

- 1. Private and qualitative education department
- 2. Educational development and student activities department
- 3. Educational research and curriculum department
- 4. General education department
- 5. Educational facilities and planning department
- 6. Finance department
- 7. Management and management development department
- 8. Legal affairs department
- 9. IT department

It was decided that all nine of the departments within the MoE would be studied as it was only through an analysis of the entire ministry that a full picture could emerge concerning communication between the separate departments.

Selection of interviewees

The semi-structured interview will focus on the heads of each department. Moreover, one employee in each department will be interviewed in order to gather a more precise image of communication, not only from management but also from the perspective of those employees who deal with the communication systems on a daily basis. Moreover, three of the IT staff and their managers will be interviewed to understand the factors that influence the implementation of e-government.

The researcher had permission from all of the participants to use a tape recorder, and asked them to talk flexibly. As some of the interviewees were senior managers, they were disrupted during the interviews and these small delays were expected while conducting the interviews. Interviews took approximately one hour and were conducted between the period of June and December 2017. A variety of secondary data sources were used to collect data; these ranged from internal reports and other publications that form a part of the case study organisations' history, and past project documentation (Irani, et al., 2008). This helped to triangulate and validate some of the data collected from the interviews (ibid).

Questionnaire

The resultant findings of interviews identified the main variables that influence the implementation of the e-government system in the MoE. In order to determine the acceptance of e-government, a survey was used in this study to ascertain employees' perceptions. The questionnaire was developed based on research literature with a particular focus on the information technology adoption literature outlined in Chapter 3. Close ended questions with Likert scales were employed to make the questionnaire as easy to complete as possible.

The questionnaire contained detailed, brief and clear instructions, and was created to prompt an ease of response. Respondents were notified by a cover letter concerning the nature and the purpose of conducting this research. Close-ended questions with Likert scales were employed to make the questionnaire as easy to complete as possible. The layout and format of the questionnaire were also given consideration to ensure that respondents did not inadvertently miss questions. A questionnaire is a set of questions distributed to individuals aiming to gather information (Saunders, et al., 2016). A questionnaire is an effective tool through which large quantities of data may be gathered within a minimum time period or monetary outlay. While this is a great advantage of the questionnaire, they are also limited in that they do not provide information concerning changes in emotions, behaviours and feelings. It is for this reason that the questionnaire is used in conjunction with the semi-structured interviews, as a way to gather a broad body of data to support data collected in the course of the interviews.

Respondents were advised to choose the most suitable and honest way to answer the questionnaire in either English or Arabic. Additionally, respondents were assured of privacy and confidentiality and told not to write any name that might represent their identity.

A five-point Likert scale was chosen to be the main instrument in the questionnaire. The questionnaire was structured into various sections to gain data from a demographic background-related viewpoint, with a total of 34 closed-format questions (Appendix 2).

The questionnaire was reviewed by supervision prior to submission for response. The questionnaire was also translated into the Arabic language (see appendix). To facilitate an efficient translation, the researcher also conducted a comprehensive investigation into Arabic literature to ensure that accurate technical terminologies were used.

Questionnaires were sent out to employees at the MoE departments. The questionnaires targeted 250 individuals. Letters clarifying the research principles, the rationale behind doing such research, the individual criteria and the researcher details were sent to the managers of each department (letters attached). These letters sought managers' permission to identify capable individuals from their organisations and allow them to participate in the questionnaires.

4.7.2 Data analysis

• Interview

As it has been stated by Hartley, "When sufficient data is collected by the researcher, the level must have to be maintained" (2004, p.331). In addition, it has been noted by Glaser and Strauss (1967) that the point of saturation is achieved during the process of research,

when a researcher thinks that everything is complete and then new information is not obtained by the researcher (Glaser and Strauss, 1967: cited in Dawson, 2002, p.53).

As much time is spent by the researcher as essential, until a high level of satisfaction is achieved and he has managed to come up with the appropriate answers to the questions of research development posed at the start of the study, in terms of the implementation of e-government, for the purpose of meeting the objectives of research paper.

In terms of the analysis of data, an argument has been made by Yin (2009) that tools, recipes and formulas are often searched by the investigators (including NVivio and Atlas) in a hope that knowledge with these tools will generate the required analytic outcome. However, Yin cautions that though these techniques are useful and essential, data analysis cannot be performed by them, without human consideration and interaction. Moreover, in certain situations, these techniques do not necessarily prove to be of any help, when verbatim records are represented by the verbal or word reports and are part of the case study evidence.

In this study, a qualitative analysis method thematic analysis to analyse data collected from the interviews. As claim by Glaser and Strauss (2009), the procedure of thematic analysis was started by assigning codes to unit of data holding the same descriptive or conceptual sense in order to organise and structured the collected rough data. Sundra, Lewis and Thornhill (2012) suggest that the use of terms used in literature were employed to label the emerged themes. In other words, the study used the terms in its framework (section 3.6) which was developed from the literature to categorise the merged theme.

Questionnaire

Punch (2003) identified three main guidelines for quantitative data analysis as follows: creating variables; distributing variables across the sample; and creating relationships. The Statistical Package for the Social Sciences (SPSS) software was identified as being the most appropriate and suitable tool for analysing the quantitative data for this study because of its ability to model latent variables for data screening and data analysis. The current study used exploratory procedures, namely, Exploratory Factor Analysis (EFA) to identify the underlying data structure for each construct. EFA has been used to examine only a single relationship at a time

and to explore the construct validity of the test scales (Hair, et al., 2006). For the survey, the data analysis was carried out with the use of statistics to define the features of the sample that was chosen for conducting the research. Pi-chart was taken into consideration to define continuous and categorical variables and to communicate that how many of the participants have given such response. Additionally, scores of Likert were computed for the amended UTUAT model statements, so that overall results for the statement can be recommended.

The results were recorded in the form of a table that was developed in a word file. Furthermore, the use of the Chi square test was important for various questions, where the reporting of uncertain results was carried out to examine the importance of any difference between participants with greater or low experience of internet. The definition for the Chi-square test is provided by Coolidge which is "one of the most popular non-parametric tests that involves the assessment of one or more independent variables, each with two or more levels of nominal of categorical data". (2000, p. 252)

It is commonly utilized for data analysis that is mainly comprised of the frequencies and counts, and this is the situation for the internet experience of the respondents.

Furthermore, regression analysis is also a key part of the process, and is defined as the "the statistical procedures that describe the relationship between an outcome (dependent, or response) variable and one or more explanatory (independent, or predictor) variables (Chen, 2005, p. 1). The measurement scales and the research objectives of the dependent variable in the research examines the option of the most appropriate model amongst different models of regression (Hosmer and Lemeshow, 2000, p. 1).

In relation to this study, some analysis is required to use an/the amended UTUAT model. This was basically used to test all the links between moderators, outcome variables, explanatory variables as well as analysing the hypotheses that have been identified.

Furthermore, as the services of e-government were not broadly known among the population of Kuwait's MoE, this tells that they were not being utilized by many individuals. The use and the intention of services had to be forecasted by explanatory variables that were recognized in the amended UTUAT Model. An important role was played by the use of e-government services, the behavioural intention and the binary outcome variables, in determining the kind of analysis.

Hence, the analysis of logistic regression was considered to be the most useful and most suitable method to use in the quantitative data analysis, developed from the questionnaire. It has been stated by Hair, et al. (2005, p. 368) that the most suitable process for the binary dependent variables is logistic regression, mainly because of its diagnostics, ease of interpretation and robustness. In fact, a discrete (binary) outcome was predicted by the logistic regression, mainly from a variable set that may appear to be mixed, dichotomous, discrete and continuous (Tabachnick and Fidell 2001, p. 517).

The analysis of logistic regression has been extensively utilized in the areas of business, social sciences, and health sciences, allowing investigators to examine the two classifications to which an individual belong to, such as failure/success, no disease/disease. (Tabachnick and Fidell, 2001, p. 517). In other words, logistic regression, rather than linear function or statistical distance for categorizing groups, evaluate the probability that a person is in a specific group.

The impacts of the explanatory variables on the binary results can be interpreted and estimated by the investigators, mainly by using the method of logistic regression. This helped investigators to recognize the explanatory constructs that contribute significantly to the person's probability by acquiring the binary outcome (Albright, et al. 2004, p. 834). In this procedure, the coefficients of regression are analysed and the equations of the non-linear model are developed by the utilization of an optimum likelihood estimation method.

To estimate the coefficients of regression, the use of iterative process was carried out in the implication of the optimum likelihood estimation method in a manner that increased the chances of observed data. In the iterative process, the value in the initial log parameters functions, which examines the changes in the size starts and measure re-estimation cycle of the values to bring considerable improvement in the fitting model, as below:

The repetition in this method is carried out, until the optimum level of the likelihood estimates are reached for the coefficients of regression (Chen, 2005, p. 13; Hosmer and Lemeshow, 2000, p. 8). There are various processes that can be utilized in the analysis of logistic regression, such as stepwise and enter processes (Field, 2000, p. 168; Chen 2005, p. 13). The "enter" process is a default procedure, in which all explanatory variables are included in the regression model in one block. In stepwise process, backward and forward methods are included. In the forward stepwise process, one variable is added at a time.

However, in the backward process, all variables are included in the logistic regression model and each of the constructs is eliminated at one particular time, as the level of cut off is not met by them.

In the model of logistic regression, judgments pertaining to the importance of the explanatory variables are carried out through the utilization of -2 values of log likelihood. In log likelihood of -2 (-2LL), the statistic of Chi square is utilized to measure the importance of logistic regression. It is also utilized to examine that how appropriately data is analysed by the model; the data is well predicted by the model, when the log likelihood value of -2 is reduced. Furthermore, the test of likelihood ration can be taken into consideration within the model. It compares the likelihood for the intercept only model to the likelihood for the model containing the explanatory variables within each analysis (Chen, 2005, p. 13). At predetermined level, if there is significance in the p value, the resultant variable is predicted significantly by at least one of the explanatory variables.

Conclusion can be drawn, when prediction for the outcome is made by particular kind of explanatory variable at ap value (Chen 2005, p. 13; Field, 2000, p. 178-80).

Through the model of regression, the interpretation for the exp (13) effect is allowed, for the particular kind of explanatory variable on the outcome variable. It has been indicated that the odd ration exp (B) interpretation is carried out by the modification in the odds that appeared from the one change in unit of explanatory variable (Chen, 2005, p. 13; Field, 2000, p. 182). The main focus of the logistic regression model is that the likelihood to get the binary outcome is analysed. It is a frequent measure that ends at one and starts with zero, creating a curve of S-shaped. The values of the regression coefficients and the explanatory variables analyse the predicted probability value, which is noted to exist between one and zero (Chen, 2005, p. 14; Hair, et al. 2005 p. 356). A placement of respondents in the no or yes groups relies on the probability that is obtained by him/her. If the binary outcome's probability is equal to or greater than the pre-determined point of cut off, then participant is classified into the group of "yes", or if it appears to be lower than the point of cut off, the respondent is positioned into the group of "no". (UCLA, 2006). Hence, when actual observations and the predictive outcomes are compared, the accuracy of prediction for the "no" and "yes" and combined groups are computed.

As the literature highly recommends, adjusting the point of cut off for examining the binary result either downward or upwards is essential for the rise in "specificity (accuracy of the prediction results for the no group) or sensitivity (accuracy of the prediction results for the yes group) of the model equation" (Chen, 2005, p. 4).

Logistic regression has the ability to measure the prediction power of the model and to perform the predictions in future. The results that have been predicted can be utilized as a criterion to measure the classification's accuracy. However, it is important to know that there are two pitfalls of the logistic regression. Firstly, it is quite difficult to demonstrate that normal distribution of error terms has occurred because only two possible values are present in the response variable, 0 and 1 and this violates the assumption of regression, in which normal distribution is required for error terms. The second issue is that when prediction of the values is made to estimate the probability, the values greater than one and less than zero does not make any sense, between the values of prediction are only between 0 and 1. (Albright, et al. 2004, p. 835).

In this research, a stepwise forward analysis of regression was selected to recognize the explanatory variable contributing to measuring the use of e-government services and the intentions of respondents. It has been proven by logistic regression that it is an important technique to study the explanatory variables that are significantly related with the outcomes of binary variables.

4.8 Sampling strategy

The survey protocol utilised a convenient sampling method by selecting to distribute the questionnaire and interview in the ministry of education, yet randomly distributed the survey to the employee attending the ministry of education. Patton (2002) argued that the total number of cases is decided during the study. Given that the whole population of a manageable size and the survey took two forms -self – administered and intranet- mediated, the sample of the survey consisted of whole the ministry of education employee population (1000 employee). Distributing surveys to the whole population, if feasible, was suggested by deVaus (2002) to reduce bias and guarantee an acceptable response rate. The questionnaire response rate was 25% (250 participants responded) of the targeted participants which is acceptable response rate according to Sundra (2012).

4.9 Judging the quality of research design

Four tests are commonly used to test the quality of any empirical social research including case studies: construct validity, internal validity, external validity and reliability. These tests are explained below with respect to the actions taken in this research for the tests.

Construct validity is establishing the correct measures for the studied concepts and can be increased by using one of the three tactics: using multiple sources of evidence, establishing a chain of evidence and having the key informants review draft case study report (Yin, 2015). In order to increase the construct validity of this research, interview report was reviewed with the interviewees.

Internal validity refers to the extent of research design and data enabling the researcher to draw accurate conclusions about cause and effect and other relationships within the data (Neuman, 2005). Internal validity is used as a test for explanatory studies only (Yin, 2015). This research fell into this category, therefore internal validity was considered during the research design. In order to increase the internal validity, each case was analysed individually and compared with the other cases to make sure that the relationships obtained are not due to case specific conceptual variables.

External validity is the ability of a piece of research to generalise the findings and is related to the domain, specific setting chosen for the study (Yin, 2015; Neuman, 2005). In this research, in order to increase the external validity multiple cases were carried out considering the replication logic. The number of cases necessary for generalisation was decided during the case study implementations. A total of fourteen cases were carried out until it was determined that each case chosen provided either similar results or contrasting results but for predictable reasons.

Reliability is the extent to which the operations of a study can be repeated with the same results (Yin, 2015). In this research, in order to be able to carry out the same procedure for each case, a case study protocol was developed. The overview of the case study project, the investigated questions and the used procedures were documented in this protocol.

Bias was also taken into account during the design of interview questions. Bias is known as any influence or conditions that distort the data (Leedy and Ormrod, 2001). The research avoided bias in order to ensure accuracy and validity (Fellows and Liu, 2003). The use of the mixed methods approach was chosen with an attempt to naturalise or cancel the bias. The reliability of the quantitative data is explained in detail in Chapter 6 together with the data collected.

4.10 Chapter Summary

This chapter has outlined the research methodology to be employed in this research. The methodology has been presented and justified by discussing how the research philosophy, approaches, and techniques were designed to address the research problem of the study. The chapter has moved systematically through the multiple layers of Saunders' Onion model, examining each of the layers that go into the construction of an appropriate research methodology. As noted, the research problem, and the questions developed to address this problem are of primary significance in the development of the research strategy. Decisions to use certain methods over others are based on the applicability to the subject and the aims of the research. While this chapter has thoroughly outlined the different aspects of the research methodology in depth, the onion model below (Fig 4.5) summarises the details of this chapter as well as each of the layers that make up the methodology employed in this research project.



Figure 4. 3 Research Methodology – adopted from Saunders' research onion (2016)

The chapter that follows moves on to describe in greater detail the analysis of the interviews and questionnaires.

CHAPTER FIVE.

QUALITATIVE DATA ANALYSIS

In the previous chapter, data collection and analysis methods were first discussed and then justified. This chapter presents the case study background as well as the findings obtained from the interviews. There were two groups of questions included in the interviews. The first aimed to identify any factors affecting the acceptance and use of e-government services, while the second explored the practical issues influencing implementation of the e-government system in the MoE in Kuwait. The interview allowed respondents to express their views, opinions, and make suggestions (Creswell, 2003). The results of these interviews are outlined in this chapter.

As previously mentioned, the qualitative data collection was conducted with the use of a semistructured interview. As this research is exploratory in nature and adheres to the stated research objectives, one of the primary objectives of this thesis is to explore the challenges that affect the implementation of e-government in the MoE (section 3.2) in Kuwait to assess their effectiveness as well as the utilization of management information technology. To achieve this objective, the chapter considers insights at MoE level. This is done from a managerial, employee and IT department perspective by gathering information on:

• The technologies utilised for communication and their efficiency in achieving efficient communication between departments.

• The extent to which communication technology implementation undertaken so far has been successful and their success criteria.

• Exploring and identifying the other challenges that were not included in the proposed conceptual model in Chapter 3.

• The importance of the eleven challenges in chapter two section (2.2.4) that have been taken from the literature from employee and managers prospects.

• Identifying the technological, political, and social implementation challenges.

5.1 Case Study Background

The MoE in Kuwait is a department in the government which is responsible for dealing with educational matters, development of human resources and the educational system in the country. It is headed by a member of the Kuwaiti parliament of cabinet rank. The MoE in Kuwait manages all types of schools, ranging from kindergarten to high school, via two main administrative departments. These are the Administration of Public Education and the Administration of Private and Qualitative Education, supported by a number of assisting administrations. The MoE manages government schools in six educational areas that are distributed geographically all over Kuwait. Those educational areas are:

1. The Capital Educational Area.

- 2. Hawally Educational Area.
- 3. Farwaniya Educational Area.
- 4. Mubarak Al Kabeer Educational Area.
- 5. Ahmadi Educational Area.
- 6. Jahra Educational Area.

All government schools in Kuwait are observed and administered by one of these educational areas, while all private and qualitative schools fall under the Administration of Private and Qualitative Education.



Figure 5.1 Ministry of Education

Table 5. 1: Number of schools, students and teachers in Kuwait in 2015/2016								
	Number of	Number of	Number of					
	Schools	Teachers	Students					
Public Education	803	60902	360845					
Private Education	489	14340	249163					
Qualitative Education	11	668	2801					

There are numerous stakeholders in the MoE, each of whom need to have their needs met effectively. They are: teachers, staff, media, students, members of the school, community, agencies of the Ministry, stakeholders and members of the public who share an interest in education. The MoE supervises and administers all government schools, these being kindergarten, primary, intermediate and secondary. Government schools in Kuwait are totally funded by the government and since education is compulsory for all Kuwaitis until the age of 14, students are not liable for any fees to receive a public education. Students in government schools are mostly Kuwaitis; however, some non-Kuwaiti students are allowed to benefit from the free education provided in government schools (these non-Kuwaitis are dependents of teachers, doctors and other important professionals working for the Kuwaiti government). The number of learners in government schools in 2015/2016 was over 360,845 students, spread across different educational stages (see Table 5.1).

Moreover, MoE services are controlled by eight departments within the ministry, which are:

- 1. Private and Qualitative Education department.
- 2. Educational Development and Student Activities department.
- 3. Educational Research and Curriculum department.
- 4. General Education department.
- 5. Educational Facilities and Planning department.
- 6. Finance department.
- 7. Management and Management Development department.
- 8. Legal Affairs department.

The previous section provides some background information about the MoE, which is the case study of this research. The following sections of this chapter will focus on providing the main findings of the semi-structured interviews.

5.2 Studying the challenges and the current use of e-government services in the Ministry of Education

The following section will describe the sample size used in this study and the main findings regarding the current use and the challenges facing MoE employees.

5.2.1 Interview samples

The semi-structured interviews focused on the managers within each department. One employee in each department further down the hierarchy was also interviewed in order to get a balanced overview of the current progress within the ministry. The following diagram (figure 5.1) illustrates the structure of the ministry and its existing departments, with four departments (Private and Qualitative education, General Education, Educational Facilities and Planning, Educational development and Student Activities) based in different locations. Whereas, the rest of the departments based on the main building as explained in the literature review.

This research therefore, targeted a total of 16 subjects (8 managers, eight employees). These participants vary in their management level, experience and their location across different regions in Kuwait. For the purpose of anonymity and keeping in line with ethical approval requirements, the participants shall be coded M1 (manager1), M2 (manager2), E3 and so on, without any order of importance, as with the name of the departments D1, D2 and so on. Table 5.2 shows the details of the sample interviewed for this research



Figure 5. 2 the sample of the interview

Table 5. 2 : Details of sample for interview								
Department	No. of	Participant	Level	Experience				
	participant	labels		(years)				
	1	M2	Manager of the department	15				
D1	1	E5	Employee	5				
D2	1	M3	Manager of the department	10				
	1	E1	Employee	4				
D3	1	M6	Manager of the department	16				
	1	E3	Employee	6				
D4	1	M1	Manager of the department	15				
	1	E9	Employee	3				
	1	M8	Manager of the department	15				
D5	1	E6	Employee	4				
	1	M5	Manager of the department	10				
D6	1	E7	Employee	5				
D7	1	M4	Manager of the department	10				
	1	E8	Employee	5				
	1	M7	Manager of the department	16				
D8	2	E2	Employee	4				

The following sections provide the main findings from the primary data collection (semistructured interview).

5.2.2 E-government Current Use

Objective 1

To critically review the current state of e-government in general and with reference to the Ministry of Education in Kuwait

Regarding the current use of e-government, interviewee E1 stated that "the Ministry of Education is the only ministry that up until now has not launched an online system. That's why we are trying to move quickly but in a planned way." E3 said:

There is no way to communicate with other departments, the only way is to write a letter to the department and ask them what we need either by a change or edit to some decisions and then send it by mail. Also, sometimes I go by myself to the department needed and ask them for what I need or even use my personal phone if I have their personal number (Interviewee E3).

Moreover, E2 mentioned the issue of "bad communication tools. We have a phone, which is the only tool we have and mail doesn't work efficiently. It takes more than a month sometimes to receive a response." E5 added that "their e-government agenda is based upon the economics of ICT and its potential to improve the efficiency and consistency of the system to maintain the records of more than 60 thousand employees every year." M5 reported that the previously mentioned maintenance for the system costs the ministry a significant amount of money, requiring another plan every year to buy new equipment or to hire (via subcontracting) engineers. On the other hand, M3 claimed that they had followed a sharing plan between three different partners: the ministry, schools and students, in order to reach their objectives for implementing e-government. Additionally, M2 clarified that:

Electronic services have been executed in my organization since 2006. Though there is a lack of communication between the ministry departments, there are lots of services which can be

programmed as electronic services for the employees that will take almost more than five years to launch (Interviewee M2).

In discussing the challenges facing the MoE, E4 highlighted that "transference of paperwork onto an electronic system requires computer skills on the part of the ministry staff." Moreover, the IT staff require greater skills to develop these services or the ministry will outsource to outside companies to complete the work. In addition, E7 stated that:

Most of the problems that we face with other departments is in regard to financial communication which has led to many problems. For example, sometime we stop the salary of an employee who may deserve it for some reason. Sometimes the opposite happens and we give the employee his salary when he shouldn't have received it, which has led to issues in the ministry budget (Interviewee E7).

Regarding the opinion of employees and managers on what they think about e-government and whether it can be a solution for most of the problems that face the department, E1 said, "I think the current era is the era of technology and the time of using paper should end. Therefore, the ministry must introduce electronic methods to make it easier for employees and the e-government system of course will help us". In addition, interviewee M1 agreed that there were many benefits to an e-government system. He expressed the opinion that the "e-government system can help in improving many things, starting with reducing the amount of paper being printed every day and ending with a lowering in the number of clients in the Ministry of Education". M2 didn't share this opinion, noting that:

: I don't think it will help in this department. Perhaps it will reduce the time needed to communicate with other departments, but I don't feel that this department needs this type of system. What we need is an archive to save our documents as it takes a long time to find a file (Interviewee M2).

In contrast, interviewee E8 agreed that there were many benefits to an e-government system. He said, "e-government system can reduce communication time between us and other departments and can help us with the inquiries we receive every day from clients." Moreover, M5 affirmed: The system is required. Imagine if I have a claim and each researcher has over thirty cases, this means we are not free most of the time. Why do we continue to use the mail system which causes work delays, since mail goes through more than one station until it is finally received. It sometimes takes more than three days to arrive, which sometimes causes a loss of security, which would be avoided with this system." (Interviewee M5).

Most of the participants agreed that e-government is a very powerful tool that can help the ministry to perform their working practices in a better way.

To summarise, most of the suggestions concerned inter-department communication and technical support in the MoE. Therefore, the government should focus on these issues in order to achieve a more efficiently functioning system. The above section focused on the interviewees' opinions about the current state of e-government in the MoE. The next section will discover the challenges facing the adoption of e-government system with their current mindset.

5.2.3 Challenges of E-government Services

Objective 4

To identify and study the challenges and factors that affect the acceptance and use of e-government services in the Ministry of Education from the employee perspective

In order to explore the challenges of e-government adoption, which is the third objective of this research, interviews were conducted with MoE employees. The results of these interviews are outlined in this chapter. There are many organisational, technical, social, and financial challenges facing e-government services adoption and diffusion in Kuwait. The researcher identified eleven challenges based on a review of the literature of e-government research mentioned in Chapter 2. Accordingly, interviewees were asked about these challenges and to identify the importance level of each barrier as either: a.) not a barrier b.) an important barrier or c.) a very important barrier. Managers in each department have to address and deal with

numerous challenges met by their staff; prioritising some of these challenges over others will help to improve the adoption of the e-government services system. These challenges are listed in Table 5.3 and explained in the following sections, based on the responses of the interviewees (managers and employees). The aim in selecting these two groups was to identify the common challenges from the perspectives of employees and managers, in order to create a guideline of the most common and important challenges experienced by these stakeholders. This guideline will help service providers to prioritize and address those challenges to speed up and increase the adoption level of e-government services in the MoE in Kuwait.

Table 5.3 E-government Adoption challenges					
	Challenges				
1	IT Infrastructure weakness of the government public sector				
2	Lack of knowledge and ability to use computers and technology				
	efficiently				
3	Lack of knowledge about e-government services				
4	Lack of security and privacy of information on government				
	websites				
5	Lack of user trust and confidence to use e-government services				
6	Lack of policy and regulation for e-usage in Kuwait				
7	Lack of partnership and collaboration between government sectors				
8	Lack of technical support from government websites support teams				
9	Government employees' resistance in changing to electronic				
	methods				
10	Shortage of financial resources in government sectors				
11	Availability and reliability of internet connection				

These challenges are explained in the following sections, based on the answers of the interviewees (employees and managers).

a. IT Infrastructure weakness of the government public sector

In this study, IT infrastructure is considered an important acceptance factor of an egovernment-type project in any country. Although most manual procedures in Kuwaiti government work have been computerised, participants were asked what they thought about the readiness of the e-government services technically in light of their experience with government organisations.

Many interviewee respondents thought that the computerisation of manual procedures did not mean that the technical infrastructure for e-government services was fully implemented. They mentioned that the full implementation of the technical infrastructure could be achieved by linking all government departments with each other.

The following arguments were the result of the debate among the participants. All participants agreed that IT infrastructure in the MoE was not ready to establish a system due to existing IT problems. Participant M1 commented that "the network is very bad because of the building location and as you see our office is in the basement, so we really need a new building to have this system."

All of the interviewees agreed that the network in the MoE building was not sufficient in its current state. Participants E1 and E3 both claimed a move to a new building would definitely solve this issue. Participant M4 said, "to have a good system they should first change the location of the building of the Ministry of Education before starting any system." In addition, E4 noted, "it is clear the ministry needs to change the building to have a good infrastructure as the current building is very old and built as an old system."

ICT plays an indispensable role in e-government's implementation and diffusion. It provides a platform for government agencies to coordinate, share and implement their programs. At both government and private level, the challenge to maintain effective ICT infrastructure must be dealt with decisively and properly, as mentioned by many participants.

b. Lack of knowledge and ability to use computers and technology efficiently

Acquaintance with IT and computer skills has become necessary for success in e-government projects. The following viewpoints were drawn from the respondents' discussion. Three of the participants (E5, E6, and E7) thought that all employees in the MoE were sufficiently proficient in using computers. In contrast, M4 and M6 felt this was not the case for all employees, especially the older ones, as mentioned by E8, who said that "e-government will be good for

the young people, but the older generation will find it so difficult to use as they don't know how to use computers."

Most participants agreed that this was not an important challenge as it was not widespread. However, M4 complained, "I don't like using computers and I don't trust them. There are also not many computers in the department." This attitude amongst managers was confirmed by E9, who mentioned that, "most managers do not have a lot of experience with computers as they are all older in age."

c. Lack of knowledge about e-government services

The concept of e-government is not a new one in Kuwait, as it began 15 years ago – therefore, most employees understand the concept and are able to explain it in their own words. M3 defined it as "accessing government organisations electronically from one website. People can get their government business done via the internet so there is no need to visit any government organisations."

Some participants cited the lack of programs promoting e-government benefits and advantages as one of the most important reasons behind the delay of e-government services adoption and diffusion. It is certainly one of the key challenges that needs to be addressed to ensure the successful adoption of e-government in Kuwait. M3 claimed that "news ,s, brochures, TV adverts, messages on public transport and in subway systems, banners in public places, road shows, and seminars would increase awareness of e-government services". E5 mentioned however, that while he had "heard about it on TV and radio," he hadn't tried it yet.

The marketing of available technologies and their promotion are the primary tools through which people are encouraged to adopt new technologies or methods. Lack of promotion and programs may hamper the prospects of success and credibility. This was the view of most participants. All participants agreed that this challenge was an important one; one that could hinder the acceptance and adoption of e-government. To conclude, in order to achieve practical gains in this context, awareness campaigns should be run with the purpose of changing peoples' perceptions of e-government for good. Seminars should be conducted and brochures should be distributed in order to guide and educate people regarding usage and privacy measures of the system installed by the government.

d. Lack of security and privacy of information on government websites

It was emphasised during the interviews that privacy, security and reliability remain core concerns of officials and employees since it is personal data that is being used in the e-government system. The following viewpoints were drawn from the respondents' discussions. Three of the participants (E5, E6, and E9) expected that e-government systems would need to be very secure. Moreover, M9 said, "security is very important as we deal with very sensitive issues which require a secure system." In contrast, E7, E8 and E9 felt this would not be a challenge, as E9 said, "these days I don't feel it's an issue as security systems and software have reached a high level."

All participants agreed that by having effective security and privacy measures in place, users would trust the e-government system and use it more increasingly, as mentioned by M7, "online services are not secure enough to trust. Service transactions depends on good networks, working equipment and proof of service completion. If those are not guaranteed, we would be worried about the completion of the service."

Security, privacy and confidentiality are essential and necessary preconditions of all the services that government provides for their people. In order to gain the trust of the public and win their approval, employees are always careful to maintain the sanctity and privacy of users' private data. Open, easy and appropriate access to online portals should be provided by government officials so that people will be more receptive to e-government services.

e. Lack of user trust and confidence to use e-government services

Trust in e-government services relates to employees' perceptions of the e-government systems and their degree of trust in being able to use it safely. Trusting e-government services is essential and is based on two important principles: trust in government entities and trust in the internet and the information technology channels that are used to provide e-services. However, older people still do not trust any e-services, as noted by E8, "if I tell anyone to use the system they refuse, especially old people as they don't know how to use computers and they don't trust them." Giving another perspective, participants E3 and E4 emphasised that the new IT laws that already regulated online transactions, aimed at protecting customers' personal data and online rights, will increase trust in the internet in general. Moreover, participant M2 stressed that "employees should trust e-government services because it originates from the government itself and the government is providing the best services for them."

In regard to the first point about trust in government organizations, many of the participants claimed that all government agencies were trustworthy and could be relied upon to carry out online transactions and keep all information secure and safe.

To conclude, it is clear that the successful implementation of e-government services' adoption depends strongly on stakeholders' trust in e-services and in the providers of those services.

f. Lack of technical support from government websites support teams

The need for quick and precise technical assistance is another important factor:

Technical lapses or delays quickly irritate employees as they cannot bear delays in the services they want to acquire. Lapses in such services would deter users to go for it next time, so a dedicated team of highly skilled and qualified professionals should be made to tackle to such delays quickly and effectively (Interviewee M9).

"Another important issue is improving the capacity of employees in this regard, which means they need to learn how to efficiently use e-government services. This is also known as technical support, which can be defined as assistance to the user of hardware or software by qualified people.

The MoE needs to focus more on this issue as E8 noted, "if any technical issue appears I can solve it by myself or by asking for help from a colleague or alternatively, I can wait for the technicians to come which may take some time, often more than a day." E7 emphasised,

"sometimes I pay with my own money to fix any technical problems I face in my office" Interviewee E2 claimed that "for any systems that have been introduced there has been no help to teach us how to deal with it. On one occasion I spent two months learning how to use the system."

All participants agreed that this is a very important challenge that needs to be solved before starting any system. As M5 said, "to have a good management system they should first train us to be qualified to use this system and to introduce a good support network as usually they just introduce the system and we don't know how it works." In order to achieve a good level of technical support, E6 suggested that "the ministry needs to establish help desks, support centres, online help, call centres, email response mechanisms, etc. in order to have an effective system." This factor greatly influences user acceptance, exercise and enjoyment of technology. However, M1 stressed that "technical support comes from a private company outside the ministry and we need to pay for them from the ministry budget." M9 said, "we need to have a good plan to solve the technical support issue by creating a new department of technical support as we usually depend on individual employee skills."

To conclude, this issue will certainly affect the acceptance of e-government as most of the participants agreed that it is a key matter.

g. Government employees' resistance to changing to electronic services

All participants strongly agreed that employee resistance to changing to e-ways is not a challenge to the successful implementation and adoption of e-government. They noted that in modern times the concept of electronic communication and administration has spread everywhere and most people are using it. The participants didn't think it was an issue as highlighted by E1, who noted that "everyone wants to make the change as they want to finalise their work faster."

In contrast, participant E3 mentioned that "culture plays an important role here as some people refuse to use technology these days which may prevent further improvement of our system." Moreover, M6 stressed that "culture plays a big role. We would face some challenges with some clients using the electronic system. Some do not trust these things, but it is the best solution these days."

Many respondents and interview participants indicated that e-government services were useful in numerous respects. Several respondents commended the use of technology and said it would benefit the employees of the country. M7 said that it was time "to develop the current communication technologies used in government services" as it would make the services more accessible to all employees."

Moreover, a great deal of the participants indicated that the use of services electronically would also reduce the need to travel in hot weather, wait in long queues and obviate the need to deal with uncooperative employees, all of which could be very stressful. Therefore, e-government services would provide government employees with a number of benefits that would enable them to work more effectively, such as reducing pressure at work, enhancing their computer and internet skills and minimising their errors. To conclude, most employees were ready to change to electronic systems as they felt it would make their work easier.

h. Shortage of financial resources in government sectors

In relation to the availability of resources in place to support the use of the e-government system, the participants' comments are presented as follows: All participants agreed to a large extent with the general availability of the needed resources to access and use e-government services. Participants M1, M2, and M3 acknowledged the availability of computers in almost all departments in the MoE.

Participant E1 commented, "in my opinion, I think that a high percentage of departments have only one computer and they cannot access the internet easily." Also, Participant M5 mentioned, "each department has one or two computers so all the employees use the same computer to finish their work." Participant E4 supported this view and claimed, "even if we have our laptop with us we only have one printer to work with." Participant B5 said, "I think the ministry needs to increase the number of resources as it has become very cheap nowadays."

All the participants confirmed that resources were a very important challenge to accepting egovernment. Participants M2 and M6 both mentioned that resources were a real barrier to the use of and benefit from e-services and that they were lacking sufficient support currently.

i. Availability and reliability of Internet connection

Regarding having the necessary network in order to access the e-government, all participants believed that these have become available for at least 50% of MoE employees. Participant M6 noted, "we don't have a good network to work with and we sometimes use our own broadband to connect to the internet."

All participants agreed that the lack of availability of an internet connection was a very important challenge to adopting e-government services. M8 believed that "in order to have a good system that is adopted and used by employees, the ministry needs to improve the network and the electrical infrastructure in buildings to make the system work properly." Participants E5 and E7 also mentioned that they used their own broadband to access the internet in their office. E4 went further and claimed that they had "bad communication tools. We have a phone, which is the only tool we have and mail doesn't work efficiently. It takes more than a month sometimes to receive a response. We also have bad internet services which hinder many employee from using emails." Participant M1 suggested that government services should be accessible through new-generation smart phones adding that government sectors should ensure that their services are adapted to that mode of delivery.

j. Lack of policy and regulation for e-usage in Kuwait

Laws and legal regulations were another factor. A properly formulated and clear policy framework should be devised by making use of the latest technology and innovations from around the world. These legal stipulations should address all aspects of e-governance, such as e-applications, e-payments, email usage, copyright regulations, e-crimes, e-business, e-commerce etc. In this regard, Kuwait has formulated many regulations and laws which follow the afore-mentioned principles. It has passed laws on the following: e-transaction, criminal information, electronic method decisions etc. These laws and legal regulations ensure effective, fair and smooth dialogue between government, employees and other stakeholders. This also hastens the adoption of e-government by people. Though the presence of these laws and regulations is a positive step for the protection of employees' rights and the success of e-government, the latest changes in these stipulations should still be disseminated to common people to increase accountability and fairness.

5.3 Studying the factors influencing the implementation in the Ministry of Education

The following section will present the sample size and the main findings to understand the factors that influence e-governance implementation in the MoE.

5.3.1 Interview sample

Questions covered in this interview guide were about general e-government information, egovernment background, status of the e-government project in the MoE in Kuwait, and current problems and challenges encountered during the implementation of the project (Appendix A). In order to explore the practical issues influencing implementation of the e-government system, interviews were conducted with key government employees responsible for e-government and its services concerning e-government implementation in the MoE. The interview was conducted with the manager of the IT department in the MoE and three IT department staff. Interviewees were asked about the challenges they have faced during the implementation of the e-government system. These challenges have to be explained under the three key pressures which were mentioned earlier in the conceptual model (see Chapter 3, section 3.2). Each interview lasted around one hour and provided the context for the MoE's e-government system in practice. For the purpose of anonymity and keeping in line with ethical approval requirements, the participants were coded D1, I2, I3 and so on, without any order of importance. Table 5.2 shows the details of the sample interviewed for this research:

Table 5.4 : Details of sample for interview								
Department	No. of	Participant	Level	Experience				
	participant	labels		(years)				
	1	D1	Manager of the	16				
IT department			department					
	1	I1	Employee	6				
	1	I2	Employee	8				
	1	I3	Employee	5				

The next section will outline the main findings from the interviewees.

5.3.2 Main finding

Objective 3

To explore the factors that influence the implementation of egovernment in the Ministry of Education

Political Pressures

Having gone through the experimental data it can be concluded that almost all the interviewees had a similar conception of leadership as one of the most important factors that drives the execution of e-government. Interviewees also accepted that leadership is an essential component for functioning. Participant I1 said, "of course, a successful leader is a key factor for the success of any e-government project, at all implementation phases, and there is a strong need for electronic project leaders as there are still relatively few in the world."

Moreover, I2 added, "frankly, there is a severe shortage in the leadership of electronic projects at all levels in the country. Many of the current leaders lack the technological proficiency required, which disrupts or leads to project failure or delay."

Most interviewees believed that leaders at times did not have the required technological skills and capabilities to be able to work on the electronic projects. They believed that leaders who worked on these projects required an e-government background. Moreover, it was noted that there was an enormous deficiency in the number of IT leaders. This lack of suitably experienced staff members affects the smooth running and shift to electronic government. To be able to carry out efficient setting up of e-government projects, the MoE requires leaders who possess knowledge and management skills as well as IT skills. In fact, there is a severe deficiency of leaders who are able to manage e-government projects. Participant D1 said, "a strong and successful leader is very important to the success of electronic projects, and we are offering annual sessions in London, Singapore, etc. for the top leaders in ministries to increase their capabilities."

In the case of additional funding, all the participants shared the view that the required budget is granted in full. Nevertheless, the documentary cycle takes at last a year before it is available. A considerable number of interviewees believed that this practice leads to an interruption in implementing e-government on time. D1 claimed, "budgets are fully provided for any of the e-government projects, but the problem is in the long delay of the documentary cycle that might last for a year before we get the budget."

In support of that, I3 stated, "yes, we had to postpone the building of some e-government projects due to the long delay in receiving budgets." D1 stated that the political leaders and decision-makers of the state had promised that the budget would be granted in an expedited time to get things in order. Furthermore, he clarified that that the failure to allocate the essential budget to the leaders in the required time would slow down the process of acquiring e-governance. I3 said that "eventually, budgets are provided fully but the procedures for obtaining them, which extends over more than a year is leading to a delay in implementing e-government initiatives."

Moreover, it was widely accepted that the political support of the government in the quest to acquire e-government was essential. However, most interviewees did not believe that this support was as full or forthcoming as it needed to be. I2 added that there was,

"no encouragement or support by the government, but on the level of our leadership there is full desire and support to implement the e-government." On the contrary, D1 claimed that "yes, at the level of political leadership, there is a desire and full support to speed up work on the implementation of e-government." I3 believed that political interest and their backing has to be greater. He conceded that "there is true political will and full support for the projects of egovernment, but we need still greater support."

As far as rules and regulations are concerned a large number of interviewees believed that they are an essential feature for the functioning of e-government. Rules and regulations that govern online transactions pose a huge challenge for e-government to successfully carry out processes effectively. In this case, e-services play a vital role in constructing the legal baseline for reliable use that inculcates all parties concerned. If there is a delay in forming the laws then there will be a delay in carrying out the processes in time. The stakeholders in this process require efficient laws and regulations that protect their interests when dealing with other parties. The delay in the maturing of rules is due to the legislative session in Kuwait taking a long time. I1 said, "a delay in the development of laws and legislation regulating online services leads to a delay in the implementation or a lack of desire to use e-services." D1 was of the opinion that rules and laws were not required in the execution of e-government. However, it was definitely regarded as vital for the adoption of this technology, especially the law relating to digital signatures as without this organisations would not feel comfortable with the exchange of data and information to one another. D1 further reported that "laws and legislations on online transactions do not affect the construction of e-services. However, it has a direct impact on the adoption and use of those e-services after deployment." The draft for online transactions was completed previously by the law-making team, and the prospect of a digital signature was added, which is essential for G2G transactions. This draft was finalized in 2005 but has not yet been passed by the parliament at the time of writing this thesis. Furthermore, if there is no implementation of rules and legislations, there will be a distrust of online service because of online transactions. D1 added:

"Of course, everyone is keen to be protected with laws and regulations that control the use of electronic services. Issuing laws and legislations is to protect clients and preserve their rights.

By passing the e-signature law to legitimize all the services provided through the one-stop portal, things will be easier.

Social Pressures

All the interviewees were united upon a single agenda, which was that it was highly important to train the employees with IT skills for the effective and efficient working of e-government. The transfer of the staff to the private sector came up as a challenging factor. They planned training sessions for the employees at the state level, something which would require the assistance of huge companies such as Microsoft. D1 reported that "we train our staff continuously with the assistance of international companies, and this takes a lot of time. The problem is in the loss of a significant number of them to the private sector after they gain experience." While giving the interview, I3 stated that leaders of the project should also utilize IT skills and it must not be limited to the employees only. He also believed that it was necessary that both leaders and employees were on the same page and were equipped with the necessary IT skills. He reported that:

:

In the current case, staff are not really trained and this is causing some issues, so staff must be trained on the latest technology, especially the leaders, to keep pace with the rapid development and to ensure the best implementation of the e-services.

Implementation was considered to be the most important aspect regarding strategy and awareness of e-government. The narrative among the interviewees was that there was a lack of long-term vision. D1 responded, "there is no full awareness and understanding of e-government among leaderships at the top e-government project management level. Also, the government has no clear strategy to be employed." However, I3 said that, "yes, there is a clear strategy to be applied and there is consciousness too, but there is no consistent follow-up to all e-projects." Researchers believed that the work being done on the project of e-government was very weak and required considerable attention. It was stated that it seemed there was no work being done on the project of e-government but at the level of our department, the strategy and awareness of the importance of e-government is very weak."

There was also a belief that priority being given to the online government initiative would increase its credibility. D1 said, "we always give priority to e-government initiatives and insist on using them." A few of the interviewees stated that they would continue working with the dual system until true efficiency in e-government has been achieved and that only then would e-government be granted priority. I2 added, "e-service has been completely adopted after having an opportunity to work on the two systems for a period of six months." A small group of interviewees presented a contrasting argument that the e-government system must be granted priority so that it is successful and press employees and customers to use it. Participant I1 added that "after placing the e-service on the website portal, it should be given priority to help in its success."

• Technological Pressures

The most vital aspect is to provide the ministry and various departments with a set of infrastructures that is secure so that the flow of data and information can take place in a protected environment. In the past, Kuwait has spent enormous amounts in making their information network secure and reliable. D1 said that:

IT infrastructure is the most important factor for building e-government. We have full uptime and the latest technological structure developed to link all the ministry departments using the latest technology, but some department infrastructures need to be updated (Interviewee D1).

It was noted that the real efficiency of e-government starts with a secure information infrastructure and that there were a lot of departments that are still in the process of constructing their information network. A strong IT network was considered the backbone of e-governance, with interviewee I2 claiming that "IT infrastructure is the backbone of implementing e-government initiatives; it is in a period of sustained improvement at the state level."

A new and modern network will enable the ministry to share data and reliable information. All this will take place through the new Kuwait Information Network. D1 stated that "we are suffering from a bad network and in my opinion solving this problem will make it easier to develop and adopt this system." This network will allow technical planning in areas which are comparatively inarguable. Cost efficiency and the speed of information flow will also be increased due to the Kuwait Information Network. I2 stated, "the government is trying to solve

this problem and I think yes, we will hear shortly that the network problems have been solved." This will enhance the delivery of information and services to the State of Kuwait and be regarded as the backbone for the implementation of e-government in the state. It will also allow the country to connect all the networks with the online G2G, G2C, and G2B services networks. This system will allow applications to be distributed among computer networks so that information can be exchanged. In addition, this network will also allow the whole network to grab the flow of information if one department has the necessary information.

The need for qualified IT staff was regarded as an important aspect in the implementation phase. However, in interviewee discussion it was concluded that most of the employees at the Ministry are newly employed and lack IT professionalism. D1 said that "we have IT staff, but there is an unending lack of qualified staff due to severe competition with the private sector." Just like other government ministries, the MoE also faces staff shortage issues in addition to the deficiency of technological skills. This problem has been a long-term one, with the core reason being that the organisation does not have the authority to choose their members of staff, rather people are provided to them by the service commission agency. This means that a lot of projects are growing quickly and organisations cannot keep up with the work load with existing staff. I2 claimed that "we suffer from a lack of sufficient IT specialists in the Ministry of Education, such as specialists in data security and networks, etc."

From observations, it was concluded that IT qualified employees need a lot of attention. I3 reported that "the skill level of staff in terms of information technology is weak and does not rise to the possibility of switching to e-government."

The point of security and privacy was considered vital and really important by the interviewees in the implementation of the e-government. All interviewees agreed that security and privacy is a very important factor. I2 said that, "the security aspect is very important in the acceptance and use of e-services at the level of government, business and the individual." Employees, government agencies, large firms and multinationals hold the security of data and information as crucial. They believe the presence of a strong security network is a significant factor in the success of the e-government. Participant I1 said, "the higher security, the higher the acceptance level from employees in accepting the new system." I3 reported that "this aspect is very important, especially after the placing of the e-service on the web portal." It was strongly
believed that the security and secrecy of the data available on the e-government network would make it a success and if the data was not secure it would be a major element in its failure.

However, as the MoE is an academic organization, many professionals refuse to cooperate or form relationships among the departments. D1 said that "cooperation is weak and does not rise to the level of our ambitions."

From the opinions of the interviewees present in the IT departments, most departments were not giving the implementation of e-government a chance. Even though the IT department had extended their assistance in this project, a majority of the departments were not willing to adopt this new network. The frequent change of leaders could be cited as one of the reasons for this unwillingness. I1 said, "cooperation is very weak because of the reluctance of other departments and their unwillingness to build e-services." I2 reported, "there is currently no cooperation because there are no e-services that require that." Therefore, in the current case no cooperation exists in the MoE because there is no e-government system that requires such cooperation.

Chapter summary

This chapter presented and discussed the analysis of the qualitative data which was collected from the semi-structured interviews. The qualitative data analysis was undertaken to explore the factors that not have been covered by the UTAUT model. Moreover, it presented the main political, social and technological issues that MoE e-government implementers faced. These issues constituted the main challenges. Furthermore, the technological issues were classified into four categories, namely, security and privacy, IT standards, e-government portal and access and system integration. Political issues were classified into four categories, namely leadership, government support, financial and fund resources and legislation and legal issues. Likewise, the social issues were classified into three categories, namely awareness, employee-centric focus and digital divide. The three themes have been developed based on institutional theory (section 3.2). Based on the empirical data presented and analysed in this chapter, new technological, political and social challenges to the e-government system, that were not included in the proposed conceptual model in Chapter 3, were identified and explored. These will be further considered in the revised conceptual model in Chapter 7.

The case study findings showed that these issues are considerable and very challenging to the e-government system. They must be studied before and during the implementation of an e-government system.

To conclude, this chapter showed that there are substantial problems that were considered by those who wished to implement the e-government, but which sadly, were not further reflected upon and corrected. In addition, there were some other issues that were not considered at all and, thus, have not been solved during the implementation of the e-government system. The case study findings showed that each challenge mentioned needs to be solved as they are serious and vital to the future success of e-government. The next chapter will focus on analysing the quantitative data.

CHAPTER SIX.

QUANTITATIVE DATA ANALYSIS

The previous chapter (Chapter 5) described the case study findings. This chapter aims to meet the fourth objective of this thesis. The aim of the survey was to examine the challenges that face the adoption of e-government among the employees in Kuwait's MoE. Therefore, to meet this objective, the following sub-sections aim to identify those key factors that are identified and covered in Chapter 3 (section 3.4) for e-government adoption.

6.1 **Overview of Research Questionnaire**

A questionnaire survey was conducted in the MoE in Kuwait and distributed among ministry employees. The covering page of the questionnaire explained the purpose of study, the nature of the questions, the ethical considerations of the research, and contact information for the research team. The questionnaire was comprised of four parts (Appendix II). Part one collected demographic information about the respondents. Part two included multiple choice questions designed to collect additional information about participants' computer and internet skill, as well as participants' knowledge of e-government and their desire to use it. Part three contains UTAUT (discussed in chapter 3) model statements which measured participants' attitudes towards e-government services and describes participants' perceptions about e-government services in the Kuwait. All UTAUT constructs were measured by five scales on the Likert-type scale. Responses were ordered as follows: 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 =agree; and 5 = strongly agree. Finally, part four contained yes/no questions in order to explore, in a simple manner, the participant's intention to use e-services. The research questionnaires were distributed to 250 participants randomly chosen from the MoE situated in the main building in Kuwait city. The questionnaire response rate was 25% (250 participants responded) of the targeted participants which is acceptable response rate according to Sundra (2012). This was done to cover a wide area and obtain greater cultural diversity in the responses from the participants.

6.2 Data Screening and Management

6.2.1 Data Normality

The fluctuation in data referred to as variance and the mean value or average of total values are the key factors that determine normal distribution and is graphically plotted as a bell-shaped curve. Field (2009) refers to it as a balanced distribution as it's the midpoint of all data values. Before performing a regression analysis or any other analysis, data of normal distribution should be assessed. Plotting Q-Q (quartile-quartile) shows a straight-line transient to most of the data values and making bar graphs shows that the data obtained from the study carries a normal distribution at the edges of the bar chart. Normal distribution occurs when data is large, as noted by Hair, et al. (2006).

Prejudice of the investigator can lead to selective judgement of the nominal data which can alter the findings; therefore, for each value limitations of slope and kurtosis were calculated to validate the normal distribution in data (Tabachnick and Fidell, 2007). Regularity in data can either be a positive slope or negative slope. A positive slope occurs when data is tilted to the left with the tail directed towards the right and a negative slope is achieved when data is tilted to the right with the tail directed towards left. The flaw in data distribution is signified as normal by kurtosis if the bell shape is maintained that is not peaky or at level. Ideally the data is normally distributed if kurtosis and the slope have zero values; likewise, increasing or decreasing the value can reduce the normality (Tabachnick and Fidell, 2007).

The definite standard value depending on kurtosis and slope cannot surpass the statistical Z value usually + or -2.58 with significance value 0.01 and 1.96 with an error level of 0.05 (Hair, et al. 2006). Data distribution is normal if the accurate value of sloping is not more than two and the approximate value of kurtosis is not more than nine (West, et al., 1995; Hair, et al., 2006). The outcome of this study shows that kurtosis was below 6 and sloping was less than 2.5, which is adequate.

6.2.2 Missing data management

Data loss is a usual challenge in collective research analysis (Kline, 2005; Tabachnick and Fidell, 2007). To begin a data analysis, missing links like imperfect of misplaced data values must be sorted out (Hair, et al., 2006). In the context of this current research, any survey forms with unanswered questions associated to UTAUT model were cast off. Any lost data can lead to errors in computing through Structural Equation Modelling via AMOS or Goodness of fit index (GFI) measurement (Arbuckle, 2006). During one month, 250 survey forms were dispersed to MoE employees. From this total, 200 forms were selected and used for research study as the remaining 50 were of no value as they were incomplete. A feedback response rate of 30% is considered to be suitable for survey studies as highlighted by Sekaran (2003).

6.3 **Descriptive Statistics**

6.3.1 Demographic analysis of participants

The survey was completed by 200 participants. It was noted that there were a significant number of females from amongst the participants in each department who managed to complete the survey (see Figure 6.1, page 152) 57% of the respondents were made up of females, with males accounting for the remaining 43%.



Figure 6.1 Gender Frequency

With respect to age, the results revealed that a huge percentage of participants from the group of respondents were in the age range of 31-40 years old (41.5%), as well as a group of individuals aged between 25 to 30 years old, who made up approximately 31% of the total participants. Those individuals aged over 40 years old constituted 15% of the total participants. And finally, respondents aged between 18-24 years old constituted only 11% of total participants whereas just 2% were less than 18 years old (see Figure 6.2).



Figure 6. 2 Breakdown of age ranges for respondents

From an educational background perspective, most participants (68%) were qualified to undergraduate level, 21.5% of participants held Masters' and PhD qualifications, with 11% of respondents having only been educated to secondary school level (see Figure 6.3).



Figure 6. 3 Education level

In terms of nationality, it has been demonstrated in Figure 7.4 that most of the participants (97%) are citizens of Kuwait by birth while the rest of the respondents (3%) are residents of other countries who work or live in Kuwait or are not Kuwaiti citizens by birth. In addition, in terms of internet experience, it has been revealed through the results that most of participants (60%) were present in the group of individuals with some internet experience, of more than 4

years. On the other hand, 37% of total participants had internet experience of 3-4 years, with the final 3% of respondents accounting for internet experience of 1-2 years (see Table 6.5).



Figure 6. 4 Internet experience

In terms of internet usage in Kuwait, it has been revealed through the results that 92% of respondents were reported to use the internet on a routine basis. This was accompanied by 3% of participants who utilized the internet many times in a week. It was also noted that no one form amongst the participants fell into the categories where the internet was only used once a month or only several times in a month.

Moreover, Figure 6.8 shows most respondents used internet services for: social media (80.4%); research (5.1%); purchasing (10.3%); and other reasons (4.2%), and each respondent had the choice of choosing more than one answer. This suggests that the majority of respondents are more likely to use the internet for social purposes, such as Instagram and Snapchat, applications that are related to communication, and that do not require users to reveal their personal data.



Figure 6. 5 Internet usage purpose

Finally, most of the participants had only a basic background in e-government, whereas onequarter of the participants had an intermediate background in this area (Figure 6.6). This indicates a low level of awareness among employees in the MoE.



Figure 6.6 e-government awareness

The next sections will focus on the UTAUT model factors (section 3.4).

6.4 The factors influencing the adoption of e-government in the Ministry of Education from the employees' perspective

Objective 4

To identify and study the challenges and factors that affect the acceptance and use of e-government services in the ministry of education from employee's perspectives.

The factors that impact the adoption of e-government (section 3.4) have been outlined in table 6.1. These were recognized in the survey data and literature under six important indicators: Behavioural Intention (BI), Facilitating Conditions (FC), Social Influence (SI), Effort Expectancy (EE), and Performance Expectancy (PE) and the demographic variables such as education level, gender and age.

Table 6. 1 Survey Participant Respondents in percentage terms

	Description	Strongly Disagree	Disagree	Nature	Agree	Strongly agree
PE1	Online government system would enable me to access government information and services when I need them - 24 hours/day, 7 days/week.	1%	4%	10.1%	17.3%	58.6%
PE2	E-government system via the Internet will not be useful due to inefficient availability of government information and services in the e-government portal	1.5%	4.5%	12.5%	22%	59.5%
PE3	Using the e-government system will enable me to accomplish tasks more quickly.	1.9%	3.8%	13.5%	25%	56.7%
PE4	I do not think that the e-government project integrates well with other government ministries	1.5%	4.7%	13.2%	23.3%	57.3%
PE5	E-government systems seem compatible with most aspects of my devices.	2%	4%	9.6%	27.4%	57%
PE6	Overall, the e-government system is useful to me and other employees	2.4%	3.4%	11.3%	26.8%	56%
EE1	Learning to operate the e-government system is easy for me.	1.5%	4.9%	6.5%	39.3%	47.8%
EE2	I would find the e-government system easy to use if I got suitable training.	2.5%	6%	19.7%	25.9%	45.9%
EE3	It is easy for me to become skilful in using the e- government system.	1%	4.2%	11.1%	35.4%	48.2%
EE4	Overall, I believe that the online government system is easy to use	2.3%	5.5%	16.8%	27.2%	47.1%
FC1	I don't have the resources necessary to use the online government system.	0%	7.2%	12.6%	24.2%	56%
FC2	Given the resources, opportunities and knowledge it takes to use the e-government system, it would be easy for me to use the system.	2.4%	2.1%	8.1%	40.9%	46.5%
FC3	I have enough Internet experience to use the e- government services	.2%	3.1%	9.6%	34.9%	52.1%
FC4	There is no doubt of the high government support towards the e-government project	2.2%	2.6%	8.5%	39.8%	46.9%
FC5	I am satisfied with the security and privacy measures provided with the e-government system	1.8%	1.6%	10.8%	33.9%	50.9%

FC6	I don't feel assured that the level of legislation currently implemented encourages me to adopt e-government services	1.3%	4.2%	13.6%	29%	52%
SI1	My friends and colleagues think that I should use the e-government system	1.2%	3.1%	9.4%	42.1%	44.2%
SI2	My family members and relatives think that I should use the e-government system	1.5	3.5%	10.5%	39.5%	45%
SI3	I don't feel people around me who use the e- government system have more prestige.	.3%	3.2%	12.5%	36.8%	47.2%
SI4	I find it difficult to use the e-government services due to lack of information and awareness campaigns	2.3	4	15.1	33.5	45.1%
SI5	Overall, I am not satisfied with the level of the awareness campaign (TV, radio, newspapers, banners in government agencies websites, and in shopping malls) obtained by e-government officials.	3.1%	4.2%	15%	20.3%	57.4%

The following sections present the results of the analysis of the measurement scales utilized in the questionnaire to test the constructs proposed in the conceptual model. As the scales of UTAUT developed by Venkatesh, et al. (2003) (chapter 3) combined items from different models, it was necessary to check the reliability of the scale constructs by measuring the internal consistency of the scale using Cronbach's alpha coefficient. It is important and instructive to test whether the data could have been generated by a common theoretical distribution before empirically fitting the distributions to data. For construct validity verification, a factor analysis was performed through use of Exploratory Factor Analysis to confirm the validity of the factor structures that represent each individual model construct.

6.4.1 Validity

Reliability depends upon validity thus unreliability signifies less reliability and computing validity is possible through face or construct means (Bryman, 2008). The point where functional and practical means meet the theoretical means under study is the construct validity and it claims (the investigator with full surety) that the research device measures absolutely what was required of it to measure (Gable, 1993; Netemeyer, Bearden and Sharma, 2003; Turocy, 2002). Factorial inquiry is the chief tool to compute construct validity (Turocy, 2002). Straub, et al. (2004; p.68) state "a kind of validity that emphasizes the testing device computes

theoretical concept efficiently as the construct validity". Factorial analysis is a method of examining the subunits of construct validity as co-related factors incorporated as a single entity. The construct validity in the current study is calculated through factorial analysis and the matrix co-relation test. Factorial analysis is used in case various items determine the identical factor. Therefore, the EFA was conducted for all the individual constructs to explore the validity of the whole model also to explore the robust model structures and to show that these constructs had been well developed and have a strong relationship.

In this study, the validity of the scales was assessed by using exploratory factor analysis (EFA) and an examination of the correlation coefficients for all of the instrument scales.

6.4.1.1 Exploratory Factor Analysis (EFA).

Exploratory factor analysis (EFA) is an orderly simplification of interrelated measures. EFA has been used to explore the possible underlying factor structure of a set of observed variables without imposing a preconceived structure on the outcome (Child, 1990). It is used to explore data to know the number or the nature of factors that can be a result for the covariation between variables when the researcher does not have, a priori, sufficient evidence to form a hypothesis about the number of factors underlying the data. Therefore, EFA is generally thought of as more of a theory-generating procedure, as opposed to a theory-testing procedure (Stevens, 2002). EFA is valuable in measuring the relationships among variables and in exploring the construct validity of test scales.

The statistical package, SPSS, was used to conduct the EFA. All the scales of the research model (section 3.4) were analysed one by one: (Behavioural Intention (BI), Facilitating Conditions (FC), Social Influence (SI), Effort Expectancy (EE), and Performance Expectancy (PE), and the details of the validation process and results are discussed in the following subsections.

• Analysis of Performance Expectancy scale (PE).

The correlation coefficients matrix was calculated for the six items used in the measure of the performance expectancy scale, as shown in Table 6.2.

Variable Code	Questionnaire Statement
PE1	Online government system would
	enable me to access government
	information and services when I need
	them - 24 hours/day, 7 days/week.
PE2	The e-government system via the
	Internet will not be useful due to
	inefficient availability of government
	information and services in the e-
	government portal
PE3	Using the e-government system will
	enable me to accomplish tasks more
PE4	I do not think that the e-government
	project integrates well with other
	government ministries
DE5	E government systems seem
TE5	compatible with most aspects of my
	devices
	devices
PE6	Overall, the e-government system is
	useful to me and other employees
	aserar to me and other employees

Table1 6. 2 Coding of Performance Expectancy Variables

The results discovered, as shown in Table 6.3, illustrate that the correlation coefficients between items are generally greater than 0.3, which indicates that they are appropriate for factor analysis (Coakes, 2005).

Table 6.3 Correlation Matrix for Performance Expectancy Scale						
	PE1	PE2	PE3	PE4	PE5	PE6
PE1	1.000	0.522	0.637	0.467	.434	.728
PE2	0.522	1.000	0.401	0.327	.363	.369

PE3	0.637	0.401	1.000	0.352	.363	.517
PE4	0.467	0.327	0.352	1.000	.345	.370
PE5	.434	.363	.363	.345	1.000	.425
PE6	.728	.369	.517	.370	.425	1.000

Moreover, the researcher assessed sampling adequacy by examining the Kaiser-Meyer-Olkin (KMO) output provided in the factor analysis. According to Coakes (2005) and Pallant (2005), the KMO and Bartlett's test of sphericity are applied to determine the factorability of the output matrix. A KMO correlation above 0.60 to 0.70 is considered to be adequate for analysing the EFA output (Netemeyer, et al., 2003).

Table 6.4 : KMO and Bartlett's Test				
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.817		
Bartlett's Test of Sphericity (Approx. Chi-Square)		426.284		
	df	15		
	Sig.	0.000		

As Table 6. 4 above shows, the KMO statistic is 0.817, which is above the minimum acceptable level of 0.60 (Coakes, Steed, and Dzidic, 2006), indicating sampling adequacy.

Additionally, Bartlett's test of sphericity was (chi-square = 818.389), which was highly significant at (p<0.001) indicating that there were adequate relationships between the variables included in the analysis (Field, 2005). Therefore, it can be concluded that the data is appropriate for factor analysis.

• Analysis of Effort Expectancy scale.

As can been seen from Table 6.5 below, the Effort Expectancy scale (EE) has four questionnaire statements to measure the degree of ease of use of e-government services.

Table 6. 5 : KMO and Bartlett's Test				
Kaiser-Meyer-Olkin Measure of Sampling Adequacy0.690				
Bartlett's Test of Sphericity (Approx. Chi-Square)	416.807			
	df	6		
	Sig.	0.000		

The correlation matrix for the four scale items, EE1 to EE4, indicate that the correlation coefficients are generally greater than 0.3, as shown in Table 6.6.

Table 6. 6 Coding of Effort Expectancy Variables					
Variable Code	Questionnaire Statement				
EE1 EE2	Learning to operate the e-government system is easy for me				
	I would find the e-government system easy to use if I got suitable training.				
EE3	It is easy for me to become skilful in using the e-government system.				
EE4	Overall, I believe that the online government system is easy to use				

Also, both the KMO analysis (0.690, a highly significant result) and the Bartlett's test (chi-square = 416.807) are highly significant (p<0.001), as presented in Table 6.7.

Table 6. 7 Correlation Matrix for Effort Expectancy Scale						
SI4	EE1	EE2	EE3	EE4		
EE1	1.000	0.434	0.441	0.441		
EE2	0.434	1.000	0.508	0.490		
EE3	0.441	0.580	1.000	0.869		
EE4	0.441	0.490	0.869	1.000		

It is concluded that the four items scale measures the effort expectancy as being unidimensional.

• Analysis of Social Influence scale

Table 6.8 presents the five questionnaire statements to study how an individual perceives that others believe it is vital that he or she use e-government services.

Variable Code	Questionnaire Statement
SI1	My friends and colleagues think that I should use the e-government system
SI2	My family members and relatives think that I should use the e-government system
SI3 SI4	I don't feel people around me who use the e-government system have more prestige
	I find it difficult to use the e-government services due to lack of information and awareness campaigns
SI5	Overall, I am not satisfied with the level of awareness the campaign (TV, radio, newspapers, banners in government agencies websites, and in shopping malls) has obtained from e-government officials.

Table 6. 8 Coding of Social Influence Variables

The correlation matrix for the five scale items (SI1 to SI5) indicates that the correlation coefficients are generally greater than 0.3 as shown in Table 6.9.

Table 6.9 Correlation Matrix for Social Influence Scale						
	SI1	SI2	SI3	SI4	SI5	
SI1	1.000	0.464	0.541	0.741	.345	
SI2	0.464	1.000	0.508	0.490	.575	
SI3	0.541	0.580	1.000	0.864	.345	
SI4	0.741	0.490	0.864	1.000	.456	
SI5	.345	.575	.345	.456	1.000	

Also, both the KMO analysis (0.590, a highly significant result) and the Bartlett's test (chisquare = 316.807) is highly significant (p<0.001) as presented in Table 6.10.

It is concluded that the five items scale measures the social influence as being unidimensional.

Table 6. 10 : KMO and Bartlett's Test				
Kaiser-Meyer-Olkin Measure of Sampling Adequacy 0.590				
Bartlett's Test of Sphericity (Approx. Chi-Square)	316.807			
df	10			
Sig.	0.000			

• Analysis of Facilitating Condition scale

Table 6.11 shows the six questionnaire statements which were used to measure how an individual believes that technical infrastructure, resources, and support exists to facilitate the use of e-government services.

variable Code	Questionnaire Statement
FC1	I don't have the resources necessary to use the online government system.
FC2 FC3	Given the resources, opportunities and knowledge it takes to use the e- government system, it would be easy for me to use the system.
	I have enough Internet experience to use the e-government services
FC4	There is no doubt of the high government support towards the e- government project
FC5	I am satisfied with the security and privacy measures provided with the e- government system
FC6	I don't feel assured that the level of legislation currently implemented encourages me to adopt e-government services

 Table 6. 11 Coding of Facilitating Conditions Variables

The correlation matrix for the three scale items (FC1 to FC6) indicated that the correlation coefficients are generally greater than 0.3 as shown in Table 6.12.

Table 6. 12 Correlation Matrix for Facilitating Conditions Scale						
	FC1	FC2	FC3	FC4	FC5	FC6
FC1	1.000	0.695	0.409	0.357	.434	.462
FC2	0.695	1.000	0.497	0.370	.351	.458
FC3	0.409	0.497	1.000	0.352	.363	.747
FC4	0.357	0.327	0.352	1.000	.345	.370
FC5	.434	.370	.363	.345	1.000	.425
FC6	.462	.458	.747	.370	.425	1.000

Also, both the KMO analysis (0.658, a highly significant result) and the Bartlett's test (chi-square = 343.361) is highly significant (p<0.001) as presented in Table 6.13.

Table 6. 13: KMO and Bartlett's Test				
Kaiser-Meyer-Olkin Measure of Sampling Adequacy 0.658				
Bartlett's Test of Sphericity Approx. Chi-	343.361			
Square				
	15			
df				
	0.000			
Sig.				

It is concluded that the six items scale measures the facilitating condition as being unidimensional.

• Analysis of Behavioural Intention scale.

Table 6.14 provides the three questionnaire statements which were used to study the influence of behavioural intention (BI) on the use of e-government services.

Table 6. 14 Coding of Behavioural Intention Variables				
Variable Code	Questionnaire Statement			
BI1 BI2	Learning to operate the e-government system is easy for me			
	I would find the e-government system easy to use if I got suitable training.			
BI3	It is easy for me to become skilful in using the e-government system.			

The correlation matrix for the three scale items (BI1 to BI3) indicated that the correlation coefficients are generally greater than 0.3 as shown in Table 6.15.

Table 6. 15 Correlation Matrix for Behavioural				
Intention Scale				
	BI1	BI2	BI3	
BI1	1.000	0.475	0.725	
BI2	0.475	1.000	0.635	
BI3	0.725	0.635	1.000	

Also, both the KMO analysis (0.651, a highly significant result) and the Bartlett's test (chi-square = 816.808) is highly significant (p<0.001) as presented in Table 6.16 (below).

Table 6. 16 : KMO and Bartlett's Test				
Kaiser-Meyer-Olkin Measure of Sampling Adequacy 0.651				
Bartlett's Test of Sphericity (Approx. Chi-Square)	816.808			
df	6			
Sig.	0.000			

It is concluded that the three items scale measures the behavioural intention is unidimensional. Finally, factor loading of scales was examined in the next section in order to verify the construct validity.

6.4.1.2 Factor loading

In Table 6.17 (below), factor loading has been shown for all the factors. The entire range of items are loaded above 0.50 that is considered to be the least suggested value in research of IS (Straub, 2004; Dwivedi, *et al.*, 2008). Furthermore, cross loading of factors was not present to be higher than above 0.40.

In Performance Expectation (PE), all six factors were loaded at factor (1) and it demonstrated the unrevealed factors of Performance Expectancy. For the initial construct, variation in coefficients was recorded to be between 0.612 and 0.81. Then, all four factors of Effort Expectancy (EE) were reported to be loaded at value (2). For this component, the variation in component was reported to be between 0.76 to 0.88. For the construct of Facilitating

Conditions (FC), all six factors were loaded at factor (3). For this component, the coefficient differs between 0.704 and 0.795. Lastly, for the construct of Social Influence (SI), all five factors were loaded at factor (4). For this component, the coefficient ranged between 0.607 to 0.745.

Using the principle component, varimax rotation along with factor analysis was utilized to analyse construct validity (Table 6.17). As can be observed in Table 6.17, all of the factors have been properly loaded in discernment validity construct (having 0.40 loading and no cross loaded at less than 0.40) (Carter, et al., 2008).

Table 6. 17 Rotated factor matrix				
Items	(1) Performance expectancy	(2) Effort expectancy	(3) Facilitating conditions	(4) Social influence
PE1	.803			
PE2	.710			
PE3	.769			
PE4	.616			
PE5	.612			
PE6	.810			
EE1		.779		
EE2		.760		
EE3		.912		
EE4		.885		
FC1			.716	
FC2			.787	
FC3			.734	
FC4			.704	
FC5			.795	
FC6			.733	
SI1				.607
SI2				.719
SI3				.663
SI4				.745
SI5				.502
Extraction meth	od: Principle Con	nponent Analysis.		
Rotation Method: Varimax with Kaiser Normalization.				

Therefore, the results of factor analysis produced satisfactory outcomes.

6.4.1 Reliability

The reliability of a measure refers to the degree to which the instrument is free of random error. Cronbach's coefficient alpha value was assessed to examine the internal research consistency of measuring (Field, 2005; Hinton, Brownlow, McMurray, and Cozens, 2004; Straub, Boudreau, and Gefen, 2004). The coefficient values of Cronbach alpha were recorded to examine the post gathered data's internal consistency and through Cronbach alpha, reliability is measured (Hinton, et al., 2004; Field, 2005). Particularly, alpha is a moderate boundary for actual survey reliability. In mathematical terms, reliability is described as a measure of variability to the survey responses and it is the outcome of differences in participants. Also, survey results will vary because different opinions are held by participants, not due to the reason that research is ambiguous or confusing with numerous interpretations. The measurement of Cronbach alpha is based on the amount of each survey item and the ratio of mean value of items inter covariance to the average variance of item. Based on the proclamation that equality is found to be present in variances of item, this ratio clarifies to the mean inter item correlation, and the outcome is known as the Spearman-Brown stepped up reliability coefficient. Moreover, Hair, et al. (2006) mentioned that construct reliability should be 0.7 or higher to indicate adequate convergence or internal consistency (Hair, et al., 2006). According to the current, most realistic model as well as Venkatesh, et al. (2003), the construct constituting the UTAUT should have a good internal consistency with a reported Cronbach's alpha (α) value greater than 0.70.

Moreover, the coefficient values of Cronbach's alpha were selected to analyse internal consistency of factor (Hinton, et al., 2004; Field, 2005) (see Table 6.2). It has been suggested by Hinton, et al., (2004) that there are four various reliability points: low reliability (0.50 and below), high moderate reliability (0.50-0.70), high reliability (0.70-0.90) and excellent ranges of reliability (0.90 and above). For each construct, the reliability is provided in Table 6.3. A high value of Cronbach alpha for all variables suggests that they are internally consistent.

In this study, there were five scales used in the survey questionnaire to measure the constructs proposed in the model (Figure 3.3), namely performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating condition (FC), trust (TR), and behavioural intention (BI). To prove that those scales satisfied the model constructs consistently and accurately, a

scale reliability analysis was performed to assess the internal consistency. A reliability coefficient was run on SPSS for each set of constructs and the results are presented in Table 6.18, which shows the Cronbach's alpha (α) value for each variable. The results of the analysis show that all of the constructs got a high reliability of more than 0.7.

Table 6. 18 Cronbach's alpha (α) value for each variable				
Constructs	Number of	Cronbach's	Туре	
	Items	Alpha		
Performance expectancy	6	.815	Excellent Reliability	
Effort expectancy	4	.826	Excellent Reliability	
Social influence	5	.823	Excellent Reliability	
Facilitating conditions	6	.726	High Reliability	
Behavioural Intention to	3	.744	High Reliability	
use				

The results of Cronbach alpha fell between (0.744) for the construct of Behavioural Intention and it was recorded to be (0.918) for the constructs of Effort Expectancy. A reliability of 0.794 was revealed for the construct of Social Influence and a reliability of 0.745 was possessed by Facilitating Conditions. For Performance Expectancy construct, the score of Cronbach alphas was recorded to be 0.884.

It is shown through research findings that all values of alpha indicate that instrument of research study is greater the Cronbach alpha's construct value is reliable (Dwivedi, *et al.*, 2006).

This suggests that findings that were recorded from the instrument and the data gathered from the survey, were reliable and valid. Findings from both the factor analysis and reliability test provides confirmation for construct validity and measures of internal consistency. The next section will test the effects of the moderators on the adoption of e-government

6.5 The Effect of Age, Gender, and Education Level

The previous sections presented the statistical analysis and results which indicated that the research model has demonstrated satisfactory reliability and validity. The next step is testing the impact of the moderators (age, gender, education level) on the adoption of e-government,

which includes testing the theoretical hypothesis and the relationships between latent constructs. This section provides the progression of assessment of the conceptual modified UTAUT model in Figure 3.1 in Chapter 3. One of the main aims of the current research is to test hypotheses related to the proposed UTAUT model, as well as a number of hypothesized relationships that were previously established in the UTAUT model. The next section discussed this issue in more detail.

6.5.1 Gender impact

The investigation on the effect of the adoption of e-government performance is controlled via gender preferences and is evaluated by means of constructing

H6: there are differences between the gender of the adopters and non-adopters

E-government adoption has been exemplified amongst the employees of the MoE in Kuwait. The number of males are 73.6% in comparison to their female counterparts (26.4%). Interestingly, there is a minimal difference within non-adopters, where males (49.5%) are low in number in comparison to their female counterparts (50.5%).

It was validated through the Pearson test of chi-square that there was a considerable difference in the gender of non-adopters and adopters ($\chi 2$ (1, N = 200) =70.411, p < .001) (Table 6.19). Also, the test of binary correlation was performed to analyse if any relationship exists between e-government adoption and gender of participants. Table 6.20 (below) demonstrated that there was a positive association between the adoption of e-government and the gender of participants. (Table 6.19). Here, the gender effect hypothesis (H6) is sustained.

Table 6. 19 Gender as a determinant of E-government Adopters and Non-Adopters					
Gender	Non-Adopters		E-government		Total
			Adopters		
	Frequency	Percent	Frequency	Percent	
Male	11	49.5%	76	97%	
Female	16	50.5%	97	26.4%	
Total	27	100%	173	100%	200
X ² Test (N=200)					
Gender X E-government Adoption					
	Value		Df		P(2-sided)
Person X ²	70.422		1		< .032

The outcomes of coincident group study for females and males are briefed in Table 6.20. A statistical change in the chi-square values was observed in Table 6.20 from the standard model to the constructed one. But, in gender group, every track was not solely invariant. In this manner, the hypotheses applied are as follows:

Other tests showed that the behavioural intent relations vary distinctly between females and males. In males, the behaviour relation was stronger ($\beta = 0.41$, p = 0.001) as compared to the female sample ($\beta = 0.17$, p = 0.001). In accordance with this outcome, the testable statement of gender effecters was not sustained.

Table 6. 20 Spearman's Correlations which show the association between					
Gender and E-government	Adopters				
Gender Respondents	Correlation	E-government			
		Adoption			
	Sig. (2-tailed)	.248(**)			
	Ν	200			
** correlation is	** correlation is				
significant					
At the 0.01 level (2-tailed)					
6.5.2 Age impact	·	·			

In table 6.21 it has been exemplified that adoption of e-government services increased with the age of MoE employees. However, the rate of adoption begins to tail off after employees reached the 30-44 year old age bracket. The highest percentage (46%) attributed to adopters of

e-government was in the 30 to 44 year age range. Contrary to this, the group of younger age, below 18 years of age remained at1% and the older age group range was reported to be 2% in which people above 54 years of age were included. In table 6.14, it has been shown that a large number of employees (66%) having age range of 25-66 years, adopted services of e-government. Moreover, the younger (less than 18 years of age) and elder (greater than 54 years of age) groups together constituted 5% of total respondents.

Table 6. 21 Age as a Determinant of E-government Adopters and non-adopters.					
Age	Non-Adopters		E-Government		Total
			Adopters		
	Frequency	Percent	Frequency	Percent	
Less than 18	0	0%	3	1%	3
18-24	2	33%	20	14%	22
25-29	8	20%	54	20%	62
30-44	12	35%	70	46%	83
More than	25	7%	5	17%	30
45					
Total	27	100%	172	100%	200
X ² Test (N=200)					
Gender X E-government Adoption					
	Value		Df		P(2-sided)
Pearson X ²	90.625		5		< .001

Also, binary correlation test was performed to measure any relationship between adoption of e-government and age of participants. The following table (table 6.22 below) highlighted that there was a considerable negative relationship between e-government adoption and the age of participants (Table 6.22).

Table 6. 22 Spearman's rho Correlations	which show the	association	between Age
and E-government Adopters			

		E-government Adoption
Age of Respondents	Correlation	270(**)
	Sig. (2-tailed)	.000
	Ν	200
** correlation is significant		
At the 0.01 level (2-tailed)		

6.5.3 Education impact

In table 6.23 (see below), non-adopters as well as adopters of e-government among citizens of Kuwait are presented. The table illustrates that most of the adopters have an undergraduate level of education (64%), followed by low level educational degrees (22%). Finally, low adoption levels were found to be present amongst the group at postgraduate education level (14%). With respect to adopters, most of the non-adopters were recorded as having greater education levels. The Pearson chi square test validated that there is a considerable difference in level of education, presenting both non-adopters and adopters ($\chi 2$ (2, N =200) =20.769, p < .001) (Table 6.23).

Table 6. 23 Educ					
Non-Adopters					
Education	Non-Adopters		E-government		Total
			Adopters		
	Frequency	Percent	Frequency	Percent	
=< high school	2	31 %	15	22 %	17
Undergraduate	15	63 %	124	64 %	140
Postgraduate	10	6 %	33	14 %	43
Total	27	100 %	172	100 %	200
X ² Test (N=200)					
Gender X E-gov					
	Value	P(2-sided)			
Pearson X ²	20.769		2		<.001

Moreover, a test of binary correlation was performed to measure the association between the level of respondent's education and the adoption of e-government. It has been suggested in findings of research that there was a negative association between adoption of e-government and education level of respondents (Table 6.24).

Table 6. 24 Spearman's rho Correlations which show the association between Education and E-government Adopters						
		E-government				
		Adoption				
Education of Respondents	Correlation	168(**)				
	Sig. (2-tailed)	.000				
	Ν	200				
** correlation is significant						
At the 0.01 level (2-tailed)						

6.6 The relationship between the factors

The following section will test the relationship between the factor of the UTAUT model mention in chapter 3 (section 3.4).

6.6.1 Analysis of Behavioural Intention scales

This section will conduct a regression analysis, where the dependent variable was found to be Behavioural Intention, while predictor variables included Social Influence, Effort Expectancy, and Performance Expectancy

• Regression Analysis: Examining the Relationship Between the Overall Performance Expectancy, Effort Expectancy and Social Influence Constructs and Behavioural Intention

A test of binary relation was carried out to note the relationship between Behavioural Intention, Social Influence, Effort Expectation and Performance Expectancy. It was shown through results that there is a significant correlation to all factors: Social Influence (0.443), Effort Expectancy (0.923) and Performance Expectancy (0.470). (Table 6.25).

Table 6. 25 Correlations		
		Behavioural Intention to
		adopt E-government
Performance expectancy	Person Correlation	.810(**)
(PE)	Sig. (2-tailed)	.000
	Ν	200
Effort expectancy (EE)	Person Correlation	.823(**)
	Sig. (2-tailed)	.000
	Ν	200
Social influence	Person Correlation	.480(**)
	Sig. (2-tailed)	
	N 200	

Regression analysis was conducted with Behavioural Intention to measure e-government's adoption as a dependent variable and Social Influence, Effort Expectancy and Performance Expectancy as predictor variables. As many as 200 cases were examined. Based on the analysis, the emergence of a significant model tool place (F (3, 200) = 113.573, p < 0.001) (Table 6.26) with 0.868 as value of adjusted R square. The significant constructs are represented in Table 7.7 in which Social Influence (= .100, p < .001) Effort Expectancy (= .823, p < .001) were included and their effect on Behavioural Intention was measured. Contrary to this, Performance Expectancy (= .024, p = .111) was not reported to be a significant variable in the model.

R2 which is also termed as R Square, showing the proportion of response variable variation, comprised of value between (0) and (1). A greater value of R2 may be considered as a sign of good fit of the tested model. In this test, Behavioural Intention changes to adopt e-government was reported to be at 86.5%.

Table 6. 26 Regression Analysis I : model summary						
Model	R	R square	Adjusted R square	Std. error of the estimate		
1	.929(a)	.868	.765	.262		

Table 6. 27 Regression Analysis I : ANOVA(b)							
Model	Sum of	Df	Mean Square	F	Sig.		
	Square						
1 Regression	72.538	2	72.538	113.573	.000(a)		
Residual	126.462	198	0.069				
Total	200.000	200					

As explained in table 6.28 (see below), it has been suggested by size of (ß) that Effort Expectancy has a considerable effect on Behavioural Intention of e-government adoption. This is followed by the construct of Performance Expectancy and Social Influence.

In regression analysis, the presence of multicollinearity negatively impacts regression model's predictive ability (Myers, 1990) and causes issues to the model's success. Hence, analysing the presence of multicollinearity issues in this research is needed. Measuring whether the data experienced such a kind of issue, two options are provided by SPSS software; mainly to estimate the variance inflation factor (VIF) and tolerance. It has been specified by Myers (1990) that if the value of VIF becomes greater than 10, this results in availability and detection of a VIF problem in the construct that requires elimination.

A substitute to this is to approximate the value of tolerance through which correlation is measured between predictor variables that usually ranges from (0) to (1). The greater the value of the tolerance is to (0), the greater the association between this and other constructs. Also, in this study, both tolerance and VIF have been provided by the author (as shown in Table 6.28). Values obtained for both tolerance and VIF signify that there is no multicollinearity problem in this research.

It has been illustrated in table 6.28 that VIF varied for the model, between Performance Expectancy (1.00) and Effort Expectancy (1.23) which are lower values than the suggested level (Myers, 1990; Stevens, 1996). However, Social Influence has a value of 2.256 which is higher than the recommended figure. Also, it has been shown in table 6.28 that all constructs have a greater value of tolerance than 0.59 except the social influences. As a result, both tolerance values and VIF values recommend that independent variables (Effort Expectancy, Performance Expectancy) involved in this test of research do not experience any king of multicollinearity issue, except Social Influence.

Table 6. 28 Regression Analysis I : coefficients (a)								
Model	Unstandardized		standardized				Co linear	ity
	Coefficier	nts	Coefficients				statistics	
	B Std.		В	Т	Р	Partial	Tolera-	VIF
	Error					Correlation	nce	
Constant	142	061		2 072	003			
Constant	.142	.001		2.912	.005			
Performance	.038	.13	0.24	1.595	.111	.019	.596	1.000
Expectancy	.895	.17	.876	66.42	.000	.777	.787	1.230
Effort Expectancy	.127	.13	.100	6.782	.000	.079	.634	1.587
Social Influence	.065 .12		.652	5.36	.121	.052	.016	2.256

This suggests that:

(H1) There is positive insignificant association between Behavioural Intentions and Performance Expectancy to adopt the services of e-government.

(H2) There is a significant association between Behavioural Intentions and Effort Expectancy to adopt services of e-government.

(H3) There is a significant positive association between Behavioural Intentions and Social Influence to adopt services of e-government.

(H6) There is a significant difference among genders of non-adopters and adopters.

(H7) There is a significant difference between the ages of the non-adopters and adopters.

(H8) There is a significant difference between the level of education of non-adopters and adopters.

6.6.2 Analysis of Facilitating Condition scale

The dependent variable that computes the adoption behaviour of e-government is represented through (No) and (Yes) and it is entirely categorical in nature. (Yes) is represented through the number (2), when e-government is chosen by a particular respondent and (No) is represented through (1), if e-government is not used by the respondent. The model of logistics regression was selected because it was considered to be most suitable for evaluating the factors which impact the adoption behaviour of e-government. Also, logistics regression analysis was selected because the Linear probability model had certain limitations which might predict values of probability beyond the range of (2), (1) (Greene, 1997).

• Logistics Regression Analysis: Examining the Relationship between the Facilitating Conditions and Behavioural Intention Constructs, and E-government Adoption Behaviour

A logistic regression analysis was performed with adoption behaviour of e-government as the dependent variable and predictor variables as Behavioural Intention, and Facilitating Conditions. The complete model was believed to be highly reliable (X2 (2, N= 200) = 30.706, p < .001).

Table 6. 29 Logistic Regression 2: Model Summary						
Step	-2 Log	Cox & Snell R	Nagelkerke R			
	Likelihood	Square	Square			
1	125.362	.032	.053			

This model reported variance between 3.2% and 5.3% in adoption of e-government (Table 6.29). Furthermore, 77.9% of the estimations for non-adopters of e-government were accurate, and the overall estimation was correct at 58.5% (Table 6.30).

Table 6. 30 Logistic Regression 2: Classification Table(a)						
	E-government			Percentage		
	Adop	otion		Correct		
	Beha	viour				
	Yes No			100		
Step 1 Have you added	Yes	121	19	77.9		
any E - Government						
Service?	No 277		8	33.9		
Overall Percentage				58.5		

In table 6.31 (see below), probability values, associated degrees of freedom, Wald statistics, and coefficient values for all independent variables are listed. It has been shown in this table that adoption of e-government is reliably forecasted by Facilitating Conditions. Through values of coefficients, it was illustrated that a rise in score of Facilitating Conditions is related with a rise of odds of adopting e-government by a factor of (1.021) (see Table 6.31). Also, it has been shown in table 6.31 that Behavioural Intention for e-government adoption, was predicted not reliably through adoption of e-government. The values of coefficients expose a decrease in score of Behavioural Intention with a reduction in odds of adopting e-government by a factor of (0.017).

Table 6. 31 Logistic Regression 2: Variables In the Equation							
B S.E Wald Df Sig Exp(B)							
Facilitating Conditions	.231	.157	.024	1	.002	.375	
Behavioural Intention Constant	.537 1.876	1.28 .485	22.925 9.032	1 1	.000 .003	.584 5.516	

This suggests that:

(H4): There is a significant association between facilitating conditions and the usage of egovernment

(H5): There is a significant association between behavioural intention and the usage of egovernment

6.7 Factors Affecting E-government Adoption in the Ministry Of Education in Kuwait

The following sections will meet the fourth objective and will illustrate the factor(s) that influence(s) the adoption of e-government.

6.7.1 **Response Hypotheses**

In the following table (table 6.32 below), the total hypotheses have been summarized, which were offered and suggested in Chapter 3. Moreover, it demonstrates that whether these hypotheses are supported or not. A total of correct hypotheses are demonstrated in table 6.32 that were tested to analyse whether dependent variables were significantly explained by independent variables.

Table 6. 32 Summary of the Hypotheses Analysis

···· · · · · · · · · · · · · · · · · ·									
Affecting Construct	Affected Construct	Hypothesis		Hypothesis testing result					
Performance Expectancy (PE)		Performance Expectancy will have an positive influence on Behavioural Intentions to use e- government services.	PE - BI	Not Supported					
Effort Expectancy (EE)	Behavioural Intention (BI)	Effort Expectancy will have a positive influence on Behavioural Intentions to use e-government services	EEBI	Supported					
Social Influence (SI)		Social Influence will have a positive influence on Behavioural Intentions to use e-government services	SI-BI	supported					
Facilitating Conditions (FC)	Use Behaviour (USE)	Facilitating Conditions will have a positive influence on e- government usage behaviour.	FC-USE	Supported					
Behavioural Intention (BI)		Behavioural Intentions to use e-government services will have a positive influence on e-government usage behaviour	BI-USE	Supported					
Gender		The adopters of e- government will be more from male than female gender.		Supported					
Ager	Moderators	There will be a difference between the e-government adopters and non- adopters of various age groups		supported					
Education		There will be a difference between the adopters and non- adopters of e- government based on different levels of education.		Supported					
6.7.2 The Validating Factors Affecting E-government Adoption in the Ministry of Education in Kuwait

Figure 6.7 provides a demonstration of the outcomes that impact the adoption rate of egovernment services in the MoE in Kuwait.



Figure 6. 7 Factors Affecting E-government Adoption in Ministry of Education

6.8 Chapter Summary

In this chapter, findings have been acquired from the data analysis conducted through the survey research method. The research was conducted to measure the usage and adoption of e-government services by MoE employees. The findings were present in different sections. The initial phase was a detailed explanation about the findings and validation obtained about the e-government adoption rate. Findings were presented in the section that provided a demonstration about the confirmation of the reliability test and that constructs were internally consistent, as Cronbach alpha above 0.70 was possessed by all constructs. The validity of construct was developed through use of EFA.

The results of the probability tests were significant. The components were frequent with the total independent variables in the conceptual model. Additionally, it was revealed through results that there was zero cross loading above 0.40 and hence a confirmation was made that both kinds of construct validity is present in the instrument of the survey research.

From descriptive analysis, an implication has been developed that all constructs are strongly rated on the Likert scale of 1 to 5. This suggests that strong agreement is shown by participants within constructs included in the research for measuring the e-government adoption system. An inspection of the demographic differences (education, age and gender) as social constructs by deploying Pearson test of chi-square has shown through the results that adopters of e-government in Kuwait City significantly differ in terms of education level, age and gender.

Through liner regression, an evidence was provided that Social Influence and Performance Expectancy do not significantly elaborate Behavioural Intentions towards e-government adoption. Finally, an evidence was provided by logistics regression analysis that the independent variable of Behavioural Intentions significantly demonstrated the adoption behaviour of e-government (dependent variable). Facilitating Conditions was considered to be a significant predictor in this model. In the next chapter (7), findings will be discussed in the light of past research.

CHAPTER 7.

DISCUSSION AND MAIN FINDINGS

Despite the existence of a significant amount of literature, as presented in Chapter 2, there seems to be a scarcity of material about e-governance theoretical models. No proper model could be found which explores the challenges and opportunities e-governance faces at the social, technological, and political levels. Many studies suggest the implementation of e-governance models in Kuwait, but theoretical explanations and ideas seldom back them. One of the objectives of this study is to address these issues by way of exploring the theoretical underpinnings of e-governance models. This study analyses the MoE to support the adoption of e-governance in the country.

To achieve the objectives mentioned above, the model presented in Chapter 3 was chosen as the scale to assess. Meanwhile, Chapters 5 and 6 provided necessary data for the model tested and suggested in this context. The essence of this study is to synthesise empirical data with the theoretical ideas of e-governance to meld and formulate the model in the Kuwaiti context. In short, this study expresses a new conceptual model explicitly designed for Kuwait. These findings will serve as a useful guide for government and policymakers in the implementation or adoption of e-governance systems.

Under this section, the data found in Chapters 5 and 6 would be represented to appraise the reader of the dataset used. An in-depth study of Chapter 2 (section 2.2.4) shows that a large number of studies exist which explore attitudes towards e-government and challenges faced in its adoption.

7.1 Factors That Influence the Implementation of E-Government in the Ministry of Education

Since the inception of e-government, numerous studies have focused on the prospects and challenges with respect to e-governance in various cultural and national contexts. They have analysed dependent, independent, and influencing factors which have contributed to the success or failure of e-governance implementation. Chapter 2 (section 2.2.4) and Chapter 3 highlighted and extensively discussed these as well. An explanation of these factors along social, technological, and political lines is presented below.

7.1.1 Technological issues.

Chapter 3 (section 3.2.1) highlights seven issues of a technological nature which may arise in an e-government system. These are prevailing IT standards, portal access, skills and capacity building, business and IT alignment, security and privacy, system integration, and local industry partners. A detailed discussion follows.

7.1.1.1 IT standards.

The case study (section 5.3.2) found that low IT standards severely impacted e-government in the MoE, especially in terms of services offered to employees through various hardware and software.

The interviewees claimed that government should pay attention to this factor, as it is very important. The literature (section 2.2.4) also emphasises this, covering the importance of proper standards for integration technologies between systems in different agencies (Fedorowicz, et al., 2009; Nyrhinen, 2006). Nyrhinen (2006) and Irani, et al. (2008) also indicate that it is an indispensable factor in this regard. To bridge this deficiency, projects are underway which would rely on ICT architecture and standards to ease the integration and alignment of existing systems in various departments. All participants agreed that they need a reliable IT infrastructure, especially in the implementation of the e-government system. An accomplished and secure IT infrastructure can lead to successful e-government initiative implementation (Al Nagi and Hamdan, 2009). Although government organisations have a significant amount of incompatible hardware and software, the established Kuwait Information

Network has made the integration of all departments possible. For some departments, the MoE infrastructure must still be updated. Lack of an IT infrastructure can delay the implementation of e-government (Sarantis, et al., 2011). Technology is no longer the problem it was in the 1980s; the problem is on the human side (Luo, 2009). IT-skilled employees are part of the IT infrastructure, which is vital to the success of e-government implementation.

7.1.1.2 Security and privacy.

The security and privacy of an e-government system is a significant factor in the implementation of that system. Empirical evidence substantiates this. Interpreted empirical data identified this factor as essential to e-government implementation. In the age of cyber-attacks and a lack of internet security, it is critical that the e-government system itself be protected from threats. This factor covers the private data of employees or subscribers to services.

The literature (section 2.2.3) also covered this with respect to security, and privacy enhances employees' trust in government-provided services (Al-khouri and Bal, 2007; Smith and Jamieson, 2006). However, interviewees claim that this is no longer an issue of concern because they have launched a secure network that all government organisations can use, and an e-signature will increase the level of security.

7.1.1.3 System integration.

Another critical factor in this regard is the integration of e-governance into the system. In the MoE, this is also a determining factor. It is vital because integration problems increase as one enters the later stages of e-government implementation, becoming most difficult when the joint workings of all the ministries are combined (Layne and Lee, 2001).

The case study found that the present IT infrastructure which has been employed for service integration has not been successful in creating dividends for e-government services and corresponding employees' responses. The prospects of joined services were hampered due to the use of a one-way integration system. For the success of e-government, a smooth and seamless integration is important (Al-Khouri and Bal, 2007; Layne and Lee, 2001; Al-Sebie

and Irani, 2005). These researchers also show that when integration is seamless, the result is better employee participation and response. Employees experience increased satisfaction and trust in e-government services.

7.1.1.4 E-government portal and access.

In the case of the MoE, the e-government project has faced various challenges and hurdles stemming from the accessibility, availability, and usability of the e-government portal. Based on interviews (section 5.4), one can conclude that issues of accessibility also determine the success or failure of e-government systems. Interviewees agreed that this is an essential factor in terms of implementing an e-government system.

Literature also suggests that challenges may stem from the introduction of new technologies (Carter and Weerakkody, 2008; Wittmann, et al., 2007; Turkman and Turk, 2009; Carter and Bèlanger, 2005). This may be due to a lack of familiarity with the methods and workability amongst people and operationalising officials. When a payment gateway was introduced in 2008, the whole service was shut down for over a month due to technical issues and system problems. This substantiates the previous research in this regard, which found that portal access is also significant for e-governance.

7.1.1.5 Skills and capabilities.

This factor found from the analysis of empirical data which influenced the implementation of e-government systems. The case study found that officials and government were fully aware of this factor and its importance in this regard. Empirical findings indicated that the availability of IT-qualified staff in the MoE is an essential factor that may affect the introduction of the new e-government system.

Literature (Al-Sebie and Irani, 2005) also suggested that the skills and capabilities of employees play an essential role. To obtain a well-qualified and well-equipped workforce, several rewards should be offered. They were expected to deliver and implement complex e-government systems on time and correctly. However, acquiring only the best skills and capability is not enough. Employees should receive regular training on IT developments and e-governance models. Interviewees recognised the importance of this factor in terms of e-governance implementation. The empirical data revealed that IT-qualified employees escape to the private sector, which is considered one of the challenging factors. According to the

interviewees, this problem can be solved by implementing a reward system in the MoE or by increasing employees' salaries.

7.1.1.6 Business and IT alignment.

This is a very different and essential factor derived from a cross-study of literature and empirical data. It focuses on the alignment of an organisation's business goals and its applied IT solution or systems. In the case study, awareness of the importance of this arrangement was evident amongst implementers and officials. According to empirical data derived from the case study, alignment of an agency's business is one of the most critical factors for e-government initiative implementation.

Coherence between business strategy and IT techniques is achieved through an examination of infrastructure and activities (Chan and Reich, 2007). The government in the MoE has devised various methods to accomplish this collaboration.

7.1.1.7 Local industry partners.

Another vital factor that surfaced during the detailed study of empirical data and the chosen case was a collaboration between government and private industry. Help from the private sector is sought to ease the problems that arise in terms of e-government implementation. All participants agreed that this is an essential factor.

The literature on e-government also finds this factor to be of utmost importance for the environment in which it operates (Al-Sebie and Irani, 2005). The implementers and officials in the MoE recognise that help from the private sector can be beneficial for e-government success. Therefore, a significant scale technology architecture and public-private partnership must be ensured. The government in Kuwait is creating strategic alliances with private organisations (Chen and Gant, 2001), aiming to attract the appropriate partners. They are seeking high-level IT experience for the successful implementation of e-government initiatives. Interviewees reported that relationship and cooperation between participants is always necessary.

7.1.2 Social issues.

Certain social issues may also arise during and after implementation of e-government services. The government, especially implementers, must give due attention and time to such challenges. After careful deliberation, the case study found that dictatorship in Kuwait was a potential social challenge that the implementation of e-government could face. This may also cause people to distrust an e-governance institution, calling it corrupt and unfair. The sense of public ownership would be affected. Another issue could be a lack of public awareness about such services, which would affect their impact. Previous research corroborates this potential issue (Choudrie, et al., 2005 ; Al-Omari, 2006). This can be addressed by way of increased communication between the public and implementers. However, the government must have a thorough understanding of these challenges so that it can equip itself to tackle them effectively.

7.1.2.1 Training and education for employees.

To ensure the success of an e-governance project, it is crucial to educate and train service users about e-government functions. Training can help create a better understanding of e-government and prevent problems from arising. This notion was found in the case study and empirical data, the latter of which revealed that IT training is an essential factor for e-government implementation, not only for employees but also for officials such as managers.

The literature (Abdallah and Fan, 2012) claims that training and education are important factors. Due to a resistance to change, illiteracy, or a lack of awareness, all e-government stakeholders were trained through a program launched by the Kuwait government. This program targeted businesses, employees, and citizens, with the latter being the primary focus. Although most of the employees have the necessary IT skills, as shown from the empirical data in section 5.3, participants feel that more training is needed.

7.1.2.2 Awareness.

Another factor is awareness amongst people familiar with e-government services and initiatives. Empirical data suggests that successful implementation depends upon it. This may account for various reasons. For most e-government services, the target audience is the

business community in Kuwait instead of employees. This contributes to the failure of egovernment implementation in Kuwait.

Many projects failed due to a lack of public awareness before 2005. While the Kuwaiti government ran public campaigns in malls, newspapers, television, and on the internet, these campaigns had little impact. Literature who also suggests These efforts are (Al-Omari, 2006; Navarra and Conford, 2003; Reffat, 2003;).

7.1.2.3 Digital divide.

The interviewees indicated that this was an important factor. A careful examination of empirical data found that addressing this factor will satisfy the implementation of Kuwait's e-government.

A digital divide arising out of gender differences, habitat, age variations, socio-economic group, and language variations may also impact e-governance implementation (; Caldow, 2001; Im and Seo, 2005) (section 2.2.4). Weerakkody and Choudrie (2005) and Im and Seo (2005) suggest that ICT literacy and the digital divide play an essential role in stakeholders' adoption of an e-government system.

7.1.3 Political issues.

After reviewing social issues in the context of e-government implementation, it is crucial to revisit underlying political issues as well. These are as follows.

7.1.3.1 Government support.

For the MoE, this factor scores high, as the initiative has high-level support from top to bottom in policy-making circles and the government. Several reasons account for this support. The empirical evidence derived from the empirical data indicates that this factor is vital for egovernment implementation in the MoE.

Weerakkody and Dhillon (2009), Heeks (2003), and Zarei, et al. (2008) state that government's commitment and support also play a crucial role in the implementation of an e-government

system. People at the top level of government should acknowledge the importance of strategic decision-making in this regard (Zarei, et al., 2008; Heeks, 2003; Weerakkody and Dhillon, 2008). Complex and prestigious e-government projects are gaining in importance all over the world, and in the Gulf in particular. The expectations that such a project would overhaul the face of governance in Kuwait is another reason. To achieve employees' approval, demands, and participation, e-government is seen as one such tool. Finally, the MoE aims to become a good role model for other ministries in the region and beyond. These reasons explain the MoE's strong support and financing of the e-government initiative.

7.1.3.2 Finances and funding.

For any project, regardless of its nature, smooth finances and funding support are required. This holds true for large-scale IT projects, which may face hurdles regarding monetary support for their implementation. Empirical evidence found in the case study also delineates the importance of proper and constant financing for the implementation of e-government projects at various levels. This was also stressed by the interviewees, who stated that constant government funding for the project was necessary to immediately mitigate hurdles. The interviewees from the MoE said that finances are essential during or before the implementation phase. Interviewees complained about the delay in the process of accepting the budgets for e-government. They agreed that receiving financial support in time could enable faster implementation.

This view has been highlighted by the studies and research of Heeks (2003), Eyob (2004), and Okiy (2005), who talk about possible challenges arising due to a lack of funding for e-government implementation.

7.1.3.3 Leadership and supervision.

During the implementation stage of e-government services, leadership and supervision play an essential role. All the interviewees agreed that leaders capable of managing the development process of e-government are needed.

Leaders can ensure the success of electronic government initiatives in the ministry. Chapter 3 (section 3.1.5) discusses how the government recognised that visionary and robust leadership was paramount to the project's success. Notwithstanding other factors, the project head or

leader plays a vital role in determining the course of action. His authority is responsible for how the e-government service would function, look, and operate. Interviewees suggested that leadership for the ministry should not be centralised; instead, it should be decentralised such that everyone is a stakeholder and decision maker. Jeager and Thompson (2003) and Ke and Wei (2004) pinpoint leadership as an essential factor in the development of an e-government system. Therefore, the role of leaders in the IT department is most important, as they supervise the cycle process of the implementation.

7.1.3.4 Legality.

An analysis of the case study found that questions of legality and legalisation should also be considered relevant while implementing the e-government system. However, this will not affect the implementation process. According to the empirical data, legislation is not needed during the implementation but is required more so for adoption.

Previous literature on the subject discusses how legislation adds credibility and support to the system (Bonham, et al., 2003; Heeks, 2001; Elliman, et al., 2007). Proper legislation should follow any such initiative to avoid legal or political controversy over the issue. Analysis of the interviews also found that the legality of such projects plays a pivotal role. This holds especially true for large-scale IT projects.

7.1.3.5 The pace of public sector development.

All around the world, governments recognise that capacity building and the development of ministries and agencies is significant in ICT. The changing nature of ICT sometimes affects priorities and decision-making, which makes it imperative to employ the latest progress in ICT to meet user demands.

Chapter 5 (section 5.4) indicated that the Kuwaiti government seems to be quite interested in using the most recent advancement in ICT to better its system. The government in Kuwait has been robust regarding its response to the changing environment and threats in the country. It continuously and rapidly realigns e-government projects in tandem with changing conditions. The postponement of implementation timelines to match the 2035 development master plan is an example. Other examples are e-health and e-education related projects which stem from the realisation that the e-government system must be flexible enough to accommodate changes.

This is in accordance with the work of Ahn and Bretschneider (2011) and Bigdeli and Cesare (2011), who said that reluctance to change is an essential factor delaying the implementation of e-government. The most important thing is to make the model flexible enough to tackle challenges that may affect implementation for government and also the reception and use of these services among employees.

The previous sections meet the objective by introducing the factors that influence the implementation within the MoE in Kuwait. The following section explores the acceptance factors of the e-government system from the employee's standpoint.

7.2 Factors That Affect the Acceptance and Use of E-Government Services in the Ministry of Education from Employees' Perspectives (Questionnaire)

The original UTAUT model (section 3.4.5) and the constructs that affect the acceptance and use of e-government services in the MoE in Kuwait are discussed below.

7.2.1 Performance expectancy

In this study, the performance expectancy used is the degree to which the user believes that use of e-government services will help him or her facilitate communication with the government regarding benefits, i.e., saving time and money, improving the quality of government services, and increasing equity among all employees. Chapter 3 (section 3.4.5) explains that expectations of performance consist of perceived usefulness, extrinsic motivation, job fit, relative advantage, and expected outcomes. All these are applied as uni-dimensional constructs relating to behavioural constructs. The conclusions of this study suggest that the expectation of performance does not have a significant effect on the intention to accept e-government systems. This pinpoints the need for efforts by the government and implementers to devise systems and methodologies that make the services more appropriate and useful for employees. This result is consistent with previous research findings (Louho, Kallioja, and Oittinen, 2006; Rosen, 2005; Garfield, 2005; Schaper and Pervan, 2004; Zhou, Lu, and Wang, 2010).

7.2.2 Effort expectancy

The effort expectancy (EE) variable in this study is defined as the degree of ease related to the use of the e-government services system in the Ministry of Education in Kuwait. It was measured by the perception of the ease of learning and using these systems, as well as the amount of effort that should be spent on using these systems. Employees are most likely to adapt to online methods and activities if the effort expectancy factor towards government behaviour is positive, as discussed in Chapter 3 (section 3.3.5) (Venkatesh, et al., 2003).

This research substantiates this theoretical assumption by concluding that effort expectancy positively affects the intention to accept e-government services or an e-government system. The study also makes the point that this factor plays an essential role in influencing employees' decisions to adopt e-government. Moreover, according to Venkatesh, et al. (2003), effort expectancy is the extent of the system's ease of use. Consequently, this finding is consistent with the results of other studies which also confirmed that effort expectancy has a substantial effect on use intention (Birth and Irvine, 2009]; Louho, et al., 2006; Venkatesh, et al., 2003). The presence of limitations and constraints may dampen the prospects of positive behavioural intent to embrace an e-government initiative. Positive intention suggests that the capacity building of employees should be undertaken by training them on the use of computers, the internet, and, hence, e-government services. Moreover, this significant influence of effort expectancy (EE) can be supported by using simple e-government services, enhancing the quality of services, using accessible and clear words and phrases, and making web-based assistance tools available. However, some scholars, such as Agarwal and Prasad (1997), Davis, et al. (1989), and Thompson (1991), argue that the factor of performance expectancy has lost its lustre due to overuse throughout the period of time. This runs counter to the research and study mentioned above, which highlights it as a predetermining factor.

7.2.3 Social influence

The social influence (SI) construct in this study is defined as the level to which an individual distinguishes others' opinions are important in terms of one's decision to use e-government services. It is measured by the awareness of how social communication affects users' intentions to use e-government services. Another factor influencing employees' decision-making regarding the adoption or rejection of e-government initiatives is the social influence factor.

The social influence of e-government services has a significant impact on employees who have not yet adapted to such services or those who are dismayed by the quality of such initiatives, as found in Chapter 6 (section 6.6.3). By way of sending messages through the media, the government convinces satisfied users to influence their friends and family to switch to egovernment services. As a result, the relationship and hypothesis (H4) between SI and BI are supported. Social influence through generally held perceptions plays a vital role in influencing people's behavioural intention to join the e-government initiative. Social influences are intended to be significant in the early stage of individuals' practice.

Chapter 3 states that campaigning and propagation through mass media, television, newspapers, etc. have a considerable effect on how people view e-government initiatives (Dwivedi, et al., 2009; Venkatesh and Brown, 2001; Dwivedi and Lal, 2007). Thus, to attain maximum acceptance from employees, the government should use mass media in the form of advertisements and awareness campaigns, as well as online campaigning on social media and government websites, etc. to lure people to the e-government system. The research carried out in Chapter 6 (section 6.6.3) also justifies and supports this theory. The study result revealed the significant impact of social influence on behavioural intention (BI) to use e-government services.

7.2.4 Facilitating conditions

In this study, facilitating conditions (FC) refers to the availability of technological and organisational resources to support the use of the e-government system (Venkatesh, et al., 2003). It is measured in terms of the awareness of accessing the required resources, the necessary knowledge, and the technical support needed to use e-government services systems.

The study results confirmed that facilitating conditions (FC) have a direct and significant effect on the usage behaviour (USE) of e-government services. That finding supports the established direct link between facilitating conditions (FC) and usage behaviour (USE). Concerning the MoE, facilitating conditions include ICT infrastructure of government sectors, internet connectivity, the accessibility and reliability of government websites, technical support services, and any other available services to assist individuals in adopting and using egovernment services. Therefore, enhancing facilitating conditions regarding both technological and human resources is required to improve and increase the adoption of e-government services. This result was in line with those of other empirical studies (Helaiel, 2009; Venkatesh, et al., 2003; Zhou et al., 2010 ; Hung, et al., 2006).

The above discussion highlights how facilitating conditions play an essential role in determining individual behavioural intent towards an e-government system (Dasgupta and Gupta, 2009). As explained in Chapter 3, the technological factor bridge the gaps towards e-government implementation. They minimise potential hurdles in the usage and effectiveness of the system, thus adding to the facilitating conditions. Hence, if these factors are readily available, there will be more participation from the employee's side in e-government. The conditions which help the user adapt to certain systems play a significant role in the actual adoption of e-government systems.

7.2.5 Behavioural intention

From the above discussion, it can be concluded that behavioural intention positively influences employees' behaviour towards e-government services. It also positively affects technological usage and enhances it effectively, as suggested by Venkatesh, et al. (2003).

7.2.6 Gender

Gender is another factor that positively affects employees' views of e-government acceptance. In this study, gender moderated the relationship between performance expectancy (PE) and effort expectancy (EE) on behaviour intention (BI). This finding shows that gender plays a significant moderating role in performance expectancy (PE) and effort expectancy (EE) towards behavioural intention (BI) to use e-government services.

In general, all hypothesised relationships were significant and confirmed the importance of gender as a model moderator, regardless of whether it was supported. The results can inspire the MoE to continue enhancing and delivering more online services to all employees. The result also proves that both genders actively accept and use online government services. This result corresponds to that of another study, affirming the importance of the gender effect on the adoption of technology usage (Louho, et al., 2006; Akman, et al., 2005; Venkatesh, et al.,

2003). It has been theoretically established through extensive research that men are highly taskoriented, but this study found results contrary to this perception. The reason might be the high literacy and educational level of most Kuwaiti females in contemporary times. The social construction of gender has changed in modern Kuwaiti society.

7.2.7 Age

With respect to the moderating effect of age, in this study, age moderated the relationship between performance expectancy (PE) and effort expectancy (EE) on behaviour intention (BI). Moreover, the relationship between the facilitating conditions (FC) and use behaviour of egovernment services was moderated. Regarding the findings of this study, all age moderating hypotheses were supported, confirming that age is an essential moderator in the MoE context.

More specifically, the analysis result showed that younger employees in the MoE are more likely to adopt and use e-government services than older employees. There are many possible reasons for this result. For instance, those who are late to the use of computer technology are less aware of the internet and technology as compared to younger people who have grown up using it. Also, in the past, computer devices, communication facilities, and internet services were less common. Not everyone could buy them, and only traditional methods were available. Moreover, concerning the MoE's internet services, these have only become popular within the last 20 years (since 1997, when public internet access was first granted in Kuwait); thus, the younger generation of users has more experience using the internet than older users. In fact, the moderating effect of age was reported in many studies (Morris, Wu, and Finnegan, 2005; Venkatesh, et al., 2003). Moreover, this notion has been supported by subsequent research and empirical data that found that aged people are less likely to adapt to e-government initiatives.

7.2.8 Education level

In Chapter six (section 6.5.3), an inverse relationship was found between a user's education and e-government acceptance. Possible reasons for this negative relationship are that the e-government system might not be effective enough for accessing basic government information.

Also, highly educated and well-qualified people may not need e-government services to finish their tasks. This might explain the disinterest shown by qualified people or the inverse relationship between education and e-government acceptance. The result of this study is consistent with the results of several studies, including those of Jaruwachirathanakul and Fink (2005), Venkatesh and Bala (2008), Jiang, et al. (2000), and Venkatesh, et al. (2003).

The previous sections meet the fourth objective of this thesis by presenting the main factors that influence the adoption of e-government within the MoE in Kuwait. The following section explores the challenges facing the adoption of the e-government system from the employees' perspective.

7.3 Core Challenges Influencing the Adoption of E-Government in the Ministry of Education in Kuwait (Interview)

This section is dedicated to exploring other factors affecting the acceptance and use of egovernment services that have not been covered by the UTAUT model. Also, it presents a summary of the results derived from the open-ended questions.

To address this objective and create a comprehensive picture of the research issues, there must be an investigation of employees' and managers' perspectives on the factors affecting their intention to accept and use e-government services. As explained previously (section 5.3), 11 challenges were identified based on the literature review (section 2.2.4). The analysis of the results of this question generated a list of three common challenges. Chapter 5 (section 5.3) found that there are many common challenges between employees and managers. Commonly, there is a communication gap between managers and employees. The absence of technical support from e-government websites is a chief barrier between the two and is directly related to the achievement of services offered by e-government and accepted by MoE employees. Another hurdle is the carelessness of information regarding e-government services. A lack of technical support ranked first on that list, followed by a lack of knowledge among Kuwaiti society about e-government services. This technical support and awareness of e-government services in Kuwait. In addition, the availability and

reliability of one's internet connection was ranked third on the barrier list. Table 7.1 summarises the common challenges derived from the viewpoints of MoE employees with respect to e-government services.

The objective of this section is to identify the challenges that affect the adoption of egovernment services from the point of view of MoE employees and managers (section 2.2.4). The focused and concentrated study of these challenges could help increase the level of adoption of e-government services. The interview aimed to determine the underlying factors affecting e-government services. The identified challenges can help speed the acceptance of e-government services, as well as boost their level of adoption.

Table 7. 1. Ranked Challenges Among Employees and			
Managers of the Ministry of Education			
Rank	Challenge		
1	Lack of technical support from		
	government websites' support		
	teams		
2	Lack of knowledge about e-		
	government services		
3	Availability and reliability of		
	internet connection		
4	IT infrastructure weakness of		
	the government public sector		
5	Government employees'		
	resistance to change to e-ways		
6	Lack of user trust and		
	confidence in using e-		
	government services		
7	Shortage of financial resources		
	in government sectors		

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8	Lack of policy and regulations
	for e-use in the Ministry of
	Education
9	Lack of partnership and
	collaboration between
	government sectors
10	Lack of security and privacy of
	information on government
	websites
11	Lack of knowledge and ability
	to use computers and
	technology efficiently

With this knowledge, the third objective of this thesis (section 1.4) can be understood. The next section will examine employee awareness and acceptance of e-government.

7.4 Addressing the Research Gaps That Exist Between E-Government Implementation and Adoption Research

As mentioned in Chapters 1 and 3, one of the objectives of this research is to address the gaps and challenges that face e-government implementation and adoption by employees of the MoE. This section establishes the correlation between the sections mentioned above and those factors that may lead to gaps and challenges being created. It analyses and examines the implementation process through the case study (Chapter 5) and survey findings (Chapter 6) to explore the adoption levels in the Ministry of Education. This comparison aims to paint a holistic picture of the essence and spirit of e-government.

Chapters 3, 5, and 6 show relationships between e-government implementation and adoption (Chapter 3, Figure 3.3 and Chapters 5 and 6). However, this study found that not all the factors in Figure 3.3 in Chapter 3 manifested a clear and direct relationship between implementation and adoption. The next section will bridge this gap and explain factors with a definite correlation. It will also highlight those factors which have dubious or vague links.

7.4.1 Accessibility and availability.

The evidence uncovered in the case study indicates that e-government officials have provided users with one-stop access to the e-government system. They have displayed and presented information in more user-friendly formats.

The findings highlighted by the survey in Chapter 5 (section 5.3) indicate that accessibility and availability were more important factors than facilitating conditions in explaining Behavioural Intention in the MoE context. Ho (2003), Carter and Bèlanger (2005), and Carter and Weerakkody (2008) have written about the importance of this factor. In providing enhanced access to the internet, the Kuwaiti government can expect more employee participation. It was interesting to note that the survey findings, as presented in Chapter 6 (section 6.1), show that 82.2% of the respondents thought that e-services would not be useful to them. The survey asked about access to the e-government system through the availability of internet services. Section 6.1 highlights the adoption rate as found through the survey which paints the same picture as above. Overall, only 55% of the employees accessed or used the egovernment portal.

It can be concluded that access to and availability of e-government services in Kuwait is not high. The probable reason is that the approach of officials and implementers has not been employee-centric; instead, it has been business-centric. Nonetheless, availability and accessibility have a clear relation to e-government adoption.

7.4.2 System integration.

As discussed above, system integration is significant to e-government adoption. The more substantial and complex an e-government system is, the more it will require application integration at the external and internal levels.

A careful study of e-government in Kuwait found a severe discrepancy and lack of synergy between the e-government system and other agencies. Inter-agency coordination is required because certain procedures require face-to-face interaction between government agencies and employees. This can also be established through the research of Kamal, et al. (2009), Layne and Lee (2001), Al-Sebie and Irani (2005), and Al-Khouri and Bal (2007).

Lack of system integration might be the reason behind the insignificance of performance expectancy as found in the survey data analysis in Chapter 6. Amongst 200 participants, around 80% thought that there was inadequate integration between the e-government system and participating stakeholders.

The analysis undertaken above highlights that integration is dismal in the MoE regarding the e-government system. These results confirm that integration of e-government systems has a two-dimensional impact that spreads across adoption.

7.4.3 Security and privacy.

For the successful adoption of e-government, the factors of security and privacy are also significant. Amongst 200 employees surveyed, 84.8% labelled the security and privacy that e-government provided as satisfactory. This has also been highlighted in the works of Al-Khouri and Bal (2007), Smith and Jamieson (2006), and Al-Sebie and Irani (2005).

Due to such efforts, the government provided a reliable and trusted security setting. Relatively, the Chapter 6 (section 6.26.2) survey shows that the facilitating conditions construct was found irrelevant in terms of explaining e-government acceptance. This may be because of a deficiency in the security and privacy mechanism implemented by government and trusted by employees.

Hence, these findings indicate a strong relationship between privacy and security measures and the adoption of an e-government system.

7.4.4 E-government training and education.

The training of users and implementers has a direct relationship with adoption. This has been substantiated by Kown and Zmud (1987) and Anderson and Young (1999). For that reason, the government has established programs tasked with increasing ICT training and awareness amongst stakeholders and employees. By 2008, approximately 8,000 employees had been

trained. The survey data as presented in Chapter 7 also shows that effort expectancy explains the relationship between adoption and behavioural intent in a better way. Hence, there is a greater need to provide training in requisite skills to potential users. This should be done especially for those who cannot learn and use the internet or computer-related services.

Among the respondents who were surveyed, 61.8% believed there are fewer opportunities available for training in this regard for employees. Only 3.8% of the respondents found present opportunities for employee training to be satisfactory. Careful examination of the effort expectancy construct found that the proper model appeared with behavioural intent. Hence, it can easily be claimed that there were negligible opportunities available for e-government training amongst employees.

7.4.5 Awareness.

There exists a greater need in contemporary times to make as many people as possible aware of the availability and advantages of such services. Lack of awareness may result in the failure of e-government initiatives as well as the loss of financial investment. As mentioned previously, not many people are trained or equipped to work with or handle IT systems. Against this backdrop, it becomes more important to disseminate awareness about the challenges.

It found that in Kuwait, few awareness drives were carried out targeting employees to enhance the e-government initiative. The aim was to convince employees to adopt e-government services with enthusiasm and trust. The empirical analysis shows that the social influence construct also explains behavioural intention with respect to the adoption of e-government. This can be fruitful for implementers and officials, as it would make more people consider egovernment services as a mode of handling their matters. In Kuwait, employees can be convinced or attracted through social media campaigns or any other type of online portal which is accessed by most Kuwaitis.

This way, even if one person is convinced, he would automatically become a resource for the implementers and officials, who would encourage his family and peers to adopt e-government services. Another method is through electronic media like television channels which can run

paid ads from the government highlighting the advantages of e-government systems. Kuwait is in dire need of such campaigns, as the findings in Chapters 5 and 6 (see Table 6.1) showed that 81.4% of respondents rated awareness campaigns as insufficient and lacking in impact. Lack of awareness is why many employees have difficulty using such systems. The insufficiency of e-government awareness campaigns also causes a lack of interest among employees in such services. Hence, through this analysis, a direct and clear relationship can be established between awareness and the adoption of e-government services and systems. This is something that implementers and officials in the MoE should consider.

7.4.6 Legislation and legal matters.

As mentioned in section 3.1.5 and highlighted by Elliman (2006) and Heeks (2001) (section 2.2.4), legislation is vital for the viability of e-government initiatives. It also plays a crucial role in adoption at the employee level. The empirical inferences drawn from the case study indicate that even officials in the highest levels of government agree to this challenge and say that it significantly impacts the e-government system in Kuwait. The findings in Chapter 6 (section 6.6.2) stress that facilitating conditions are comparatively less significant regarding the implementation and adoption of e-government services. One possible reason for employees' non-adoption of the e-governance system can be legal and legalisation challenges. However, the survey showed that 80% of the respondents felt encouraged by the level of legalisation of the system and found it satisfactory.

7.4.7 Government support and commitment.

The detailed explanation of the case study in section 5.4 shows that all employees who gave interviews felt that the government supported such initiatives in the MoE in the Kuwaiti context. As mentioned previously, the government in Kuwait has been at the forefront of implementing a national e-government project. It has given necessary funds of around \$400 million in this regard. All of this has been done to ensure the smooth functioning and sustainability of e-government services in Kuwait. Facilitating conditions play an insignificant role in the adoption of behavioural intent, so a possible reason for people's disinterest might be a lack of government support for and patronage of such initiatives. The survey evidence as

presented in Chapter 6 (Table 6.1) shows that 86.7% of the respondents found government political and financial support of the e-government initiative at the highest level. This substantiates the conclusions of Weerakkody and Dhillon (2008) that the government should support such projects to ensure sustainability and success regarding adoption and implementation.

7.4.8 Lack of technical support for government websites.

The study found that a lack of technical support for government websites by a support team is the first and strongest barrier against the adoption of e-government services (section 5.3). Thus, a fast and accurate technical support service is an essential part of an effective and efficient egovernment system. Employees may be easily deterred by technical failures, so it is critical to have a professional team that can detect and respond to technical issues and help users as soon as possible. Employees require high-quality technical support to become familiar with eservices and learn how to use them effectively. Hofman (2002) defined technical support as "knowledge[able] people assisting the users of computer hardware and software products." Technical support can include help desks, information centre support, online support, telephone response systems, e-mail response systems, and other facilities. Geetika (2007) and Williams (2002) confirmed that technical support is one of the significant factors in the acceptance and use of technology in general, and in the adoption of e-applications such as egovernment services; many interviewees in Chapter 5 agreed with this viewpoint.

7.5 Revise the Conceptual Model.

The following sections will establish the relationships between implementation and adoption by analysing the interview (implementation), survey (adoption), and case study (other factor) findings from MoE employees in Kuwait to offer a more holistic picture of the concept of egovernment. This was one of the primary objectives of this research.

7.5.1 Relationship between implementation and adoption.

Of the numerous factors proposed in the conceptual model (Chapter 3, Figure 3.3) and found empirically in Chapters 5 and 6, some factors emerged showing explicit relationships between e-government implementation and adoption. However, this study found that not all the factors listed in Figure 3.3 in Chapter 3, as well as in Chapters 5 and 6, manifested a clear and direct relationship between implementation and adoption. The next section will bridge this gap and explain factors with a clear correlation. It will also highlight those factors which have dubious or vague links.

A detailed explanation and analysis has found that a direct relationship exists between government services and implementation efforts and employees' acceptance of an e-government system. The discussion undertaken above can be summarised as follows in the MoE in Kuwait.

Factors Influencing E-	E-Government Implementation	E-Government Adoption	
Government	(Government's Perspective)	(Employees' Perspective)	
Government support and	Empirical data found government support to be	The survey found government	
commitment	high. Most credit this to the active direction of	financial and political support to be	
	the national e-government project committee.	sufficient. Respondents rated	
		government's commitment to the	
		project highly.	
Legislation and Legal	The interviewees considered legislation on	The survey indicated that legislation	
	electronic service to be an important factor in	is sufficient and appropriate.	
	terms of implementation and adoption. Most	Such an environment backed by	
	researchers showed support for the present	legal stipulations encouraged them	
	legislation, as it greatly facilitated online	to accept e-government initiatives.	
	services.		
E-government awareness	Empirical data was found that the level of	The survey found that e-government	
	awareness efforts was satisfactory, while some	campaigns were insufficient to	
	labelled them inadequate and insufficient. They	address the challenges to e-	
	said that they did not feel encouraged to join e-	government adoption and	
	government services due to this.	implementation. Among the	
		respondents, 81.4% thought that the	
		awareness campaign in Kuwait was	
		un satisfactory.	

 Table 7. 2. Overall Standpoints of Implementing E-Government Services and Employees Adopting Services

 in the Ministry of Education

E-government training and education for employees	Most of the participants thought that the capacity building and training of employees are low in Kuwait. Establishment of the Ministry	Employees were dismayed by existing efforts to assimilate users into the e-government project and
	of Education Institute was considered a welcome step in this regard.	thought that the project had not done enough in training and education for employees in this regard.
Security and privacy	Interviewees said that the government has enforced and carried out various measures to ensure the security and privacy of employees' data in e-government systems. It has employed various mechanisms. Due to such measures, they are confident that the systems are adequate.	The survey found that the security and privacy measures in place were appropriate and reliable in the context of the e-government system. This is a positive sign, as it may increase employees' trust in the reliability of the e-government system.
E-government system integration	Most of the interviewees said that the level of integration was reasonable. Integration in terms of e-governance between various applications and databases being used by government agencies. It was stated that a challenge remained in terms of the communication channel between the Ministry of Education and stakeholder agencies.	The survey found that a lack of integration was hindering the prospects of e-government implementation and adoption in Kuwait. This was preventing the creations of a sustainable environment for such efforts to function.
Accessibility and availability of the Kuwaiti e-government system	Interviewees thought that the mode and level of access have increased over time. More user-friendly mechanisms are made available through the implementation of a one- stop shop philosophy. The portal's interface and domain have been refreshed to increase access and adoption amongst users.	The survey found accessibility to be insufficient. Access was considered limited and restricted.

Considering these gaps, the next section will revise the conceptual framework presented in Chapter 3 (Figure 3.3)

7.5.2 Revise the conceptual model.

The model presented in Chapter 3 (Figure 3.3) can be revised after a detailed analysis of the findings and research of Chapters 5 and 6, along with the in-depth study carried out in this chapter. The revision of the conceptual model as presented in Chapter 3 should consider the factors and challenges in the implementation of e-governance models in light of the research hypothesis as discussed in previous sections. The summary provided in Table 7.2 also allows the new model to identify gaps and relationships between implementation and the adoption of e-government systems. Therefore, the revised conceptual model aims to map the relationships between e-government implementation and adoption as indicated in Figure 7.1.



Figure 7. 1. The Revised Framework

The next section will focus on the last objective of this thesis, which to validate this framework.

7.6 Validation of the Framework Model as a Proposed Model for E-Government Services Implementation and Acceptance to Use in the Ministry of Education

An interview was conducted to confirm the results of the quantitative and qualitative analysis presented in Chapters 5 and 6. The analysis of the interview is driven by the purpose of the study and concentrates on the constructs of the framework models as the central questions.

7.6.1 The adoption framework.

Interviewees consisted of three employees in the MoE, coded as E1 to E3. Table 7.3 shows the demographic information for each participant.

Table 7.3. Demographic Information for Interviewee Adoption Framework				
Participant	Age	Education	Position	Internet
		Level		Experience
E1	45	Bsc	Manager	15 years
E2	36	Bsc	Employee	8 years
E3	34	BSc	Employee	7 years

The discussion with the interviewees concentrated on the primary purpose of the research and the fundamental constructs of the adoption framework model. The researcher started with a brief introduction to the research topic and aims. Also, the proposed framework model was presented and clarified in detail. The analysis is discussed below.

• Facilitating Conditions

There was a conflict of opinion regarding the facilitating conditions. Some participants agreed with the availability of the resources necessary to access and use e-government services.

Participant E1 confirmed this view: "In my opinion, I think that a high percentage of employees have at least one computer in the department and they can access [the] Internet easily. Therefore, I don't think this factor will affect the adoption." However, Participant E2 commented, "[The] internet is not available; the building location is not very good, and some departments are located in the basement, so the internet will be horrible. Therefore, it is an important factor for sure." Participants E1, E2, and E3 mentioned that technical support is a real barrier to the use of e-government and the receipt of benefits from it, as e-government is lacking and very weak in relation to that kind of support.

To conclude, there is evidence that the influence of facilitating conditions on the use behaviour of e-government services is significant, and this agrees with the proposed framework.

• Effort Expectancy

Regarding the effort expectancy which was not supported in the finding of the quantitative analysis, two of the participants (E2 and E3) expected that e-government systems would be easy to learn; they thought that anyone with a basic understanding of the Internet and computers could efficiently use the systems. However, E1 believed that this would not be the case for all employees, especially older ones. All participants agreed that users who have knowledge and experience in using the internet would find it easy to take advantage of the available services. This indicates that there is a significate effect of effort expectancy with respect to the use of e-government services. This was compatible with the findings of Chapter 6.

• Social Influence

The interviewees were asked about the importance of others' opinions on whether one should use e-government services. The following statements reflect their comments. Participant E1 disagreed with the statement. He said, "*That is a personal decision, and I should not follow anyone to accept it or ignore it.*" He thought that the use of e-government services would depend on his own beliefs and experience rather than on his friends' opinions or views. However, E2 and E3 thought otherwise. E2 said, "*Of course, hearing other views and opinions will affect me and will change my mind.*" E3 said, "I can easily [be] affect[ed] by other opinions and experiences especially if it was a good experience."

This indicates that social influence will affect the acceptance and use of e-government services, which is compatible with the proposed framework.

• Performance Expectancy

All participants agreed that using e-government will allow all employees to accomplish their needs faster and more efficiently than using the traditional way. However, participant E1 said, "*I don't feel this factor will affect my adoption level of e-government services as the performance will be the same*." All participants agreed that using an e-government system would not affect the performance of the employee. Participants E2 and E3 agreed that e-government systems would increase the level of equity among all employees. However, E2 said, "*The performance of the employee will not change or [be] affect[ed] by using the e-government system*."

Based on the previous discussion, the performance expectancy does not affect the use of egovernment services, which is compatible with the proposed framework.

As previously mentioned, the interview was conducted to complement and validate the quantitative findings, to reduce the weaknesses of depending on a single research method. Based on the analysis of the interview, the result is entirely consistent with the quantitative findings for all eight hypotheses. The survey data results supporting the eight hypotheses also found support from the interview analysis. Only one hypothesis - that of effort expectancy, was not supported by the quantitative analysis or the interview.

7.6.2 The implementation framework.

Interviewees consisted of three employees from IT departments in the MoE, coded as E4 to E6. Table 7.4 shows the demographic information for each participant.

Table 7.4. Demographic Information for Interviewee Implementation				
Framework				
Participant	Age	Education	Position	Internet
		Level		Experience
E4	48	Bsc	IT Manager	15 years
E5	32	Bsc	Employee	5 years
E6	39	BSc	Employee	10 years

During the discussion, interviewees concentrated on the main purpose of the research and the key constructs of the implementation framework model. The researcher started with a brief introduction to the research topic and aims. Also, the proposed framework model was presented and clarified in detail. The analysis is discussed below.

Political Support

All participants agreed that political desire is essential for e-government initiative implementation. All participants said that there is political desire and support, but no followup to the e-government initiative implementation. This factor can be more effective if there is a clear strategy. Participant E4 said, "Government support is very vital and can help to overcome any problems. The support of top management is very essential for the success of e-government." E5 added, "To be honest, there is a political will and full support to implement the e-government. The successes of e-government will [depend] on the full support [of] the implementation of e-government." Therefore, this factor will scientifically affect the implementation of e-government, which supports the qualitative findings.

• Funding

All interviewees agreed that funding is a crucial factor in developing an e-government. Most of the interviewees agreed that they always receive the budget they need to develop the system. However, all also claimed that the lateness of developing any system is because of the bureaucracy and paperwork they must go through before they can receive funds. E6 stated, *"It takes some time, more than a year to receive the funds for the e-government."* Moreover, participant E4 said, *"The problem is not that the government does not give the financial support*

but the long documentation cycle that sometimes takes more than a year before receiving the *budget*." Therefore, funding plays a vital role in the implementation of e-government, which is compatible with the proposed framework.

• Leadership

Most of the interviewees agreed that the role of leadership is vital for the implementation of e-government. E4 said, "Of course, a strong leader is one of the significant factor[s] that can assist [with] a successful e-government implementation. Without a good leader, it would be challenging to do the job." All participants agreed that a strong leader has a significant impact on the success of e-government projects. A strong leader will significantly affect the implementation of e-government, which is supported by the proposed framework.

• Resistance to Change

All interviewees agreed that resistance to change could be a challenging factor for implementing the e-government system. Participant E6 said, "Yes, there is some resistance among some bureaucrats during [the] implementation of e-government. The reason behind this was either that they are trying to keep their powers, or fear for data security and privacy." However, E5 claimed, "I don't think so. What I see [is] that all the officials and staff are asking the government to speed up the implementation of electronic services because it is more useful for them in their work and they are happy with [it]." There is a conflict of opinion regarding this factor, as some believe it is a significant factor and some do not. However, resistance to change is an important factor that can hinder the implementation of e-government.

• Awareness

The interviewees all agreed on the importance of the awareness factor for the implementation of e-government. Participant E4 said, "*Government should [pay] attention [to] this factor, as the awareness within the employee[s] is very weak.*" All participants agreed on this. Moreover, this was compatible with the proposed framework.

• IT Training

IT training is the most important factor for the implementation of e-government. Interviewees believe that all employees and officials must take training courses in IT skills. E4 said, "*IT skilled staff is very important and helps to speed the transition to adopt[ing an] e-government system.*" E5 added, "*Lack of IT skills will surely hinder accepting and implementing the e-government system.*" Therefore, IT training has a significant effect on e-government implementation.

• Cooperation

All interviewees agreed that cooperation in the implementation of an e-government system is important. Participant E4 said, "*The true cooperation between departments to provide e-services is very important to the success of any online service.*" Interviewees said that cooperation between stakeholders is always required. Therefore, this factor, in particular, is essential for e-government implementation.

• Legislation and Regulations

Legislation and regulations are important factors in the implementation of an e-government system. Laws and legislation governing online transactions are one of the biggest challenges that face e-government initiative implementation. However, interviewees did not agree. E5 said, "*Laws and legislation on online transactions do not affect the construction of e-services. However, it has a direct impact on the adoption and use of those e-services after deployment.*" According to most of the interviewees, legislation is not an important factor in implementing the e-government system.

• IT Infrastructure

The interviewees had the same perception that the IT infrastructure is the most important factor affecting implementation. E5 said, "*IT infrastructure is important for the success of any electronic services*." E3 added, "*We have an IT infrastructure that can host all current and*

future e-services. But, there is a discrepancy between the departments. Some of them are ITinfrastructure-ready while some still need to be updated. The lack of IT infrastructure leads to delays in the e-services implementation." This supports what Chapter 5 found: that IT standards can influence the implementation of the e-government system.

• Skills and Capabilities

Interviewees believed that skills and capabilities are very important. E4 said, "In order to have a successful e-government system we should have a very qualified employee. This is an important thing." However, E5 disagreed and said it is not an important factor, as it has been overcome: "Our employees have the technological capabilities and [are] ready [to switch] to e-government." E6 said, "We suffer from the lack of sufficient IT specialists, which will indeed hinder the implementation of an e-government system for sure." In summary, this factor will affect the implementation of the e-government system, and the result is compatible with the proposed framework.

• Security and Privacy

Most interviewees shared the same perceptions regarding the importance of the security and privacy factor. All interviewees agreed that security and privacy are very important. E4 said that security and privacy would increase the level of adoption of the system: "*The security feature is very important to accept and use e-services.*" E6 added, "*Security and data privacy are important to the success of e-services, no doubt.*" This confirms the researcher's assumption that security and privacy will affect the implementation of the e-government system.

• Business and IT Alignment

Business and IT alignment, in the view of all the interviewees, plays an important role in implementing any system. E4 said, "We care about this aspect significantly. We are cooperating with the IT department to re-engineer our business process, as this has a direct impact on the implementation of e-government."

As previously mentioned, the interviews were conducted to complement and validate the survey findings and to reduce the weaknesses of depending on a single research method. Based on the analysis of the interviews, one can identify differences in the result in terms of the qualitative findings in Chapter 6. Moreover, the factor has been arranged regarding the implementation stages. The next section will summarise the findings and illustrate the new conceptual framework

7.6.3 Summary of the validating analysis.

As previously mentioned, the result is almost completely consistent with the quantitative and qualitative findings. Figure 7.2 illustrates the proposed framework for this research. Some participants made crucial points and suggestions that were unrelated to the framework but that are worth mentioning so they can be addressed by the government and help it succeed in establishing and improving e-government services. Some of these suggestions are summarised as follows.

• Conduct an awareness campaign to increase the level of awareness and address the lack of employees' information and knowledge about e-government applications system by using all available media, especially social media.

• Improve and increase the regulation of e-laws which guarantee user rights and privacy when they use e-government services.

• Increase the number of experienced IT and specialist staff by increasing their low salary as compared to salaries in the private sector.

- Create more jobs with different levels and qualifications to support all IT sectors.
- Increase the number of training sessions for all employees in the ministry.




7.7 Chapter Summary

The aim of this chapter was to study and cross-examine the factors which affect the adoption and implementation of e-government services. A holistic and pragmatic approach was undertaken to explore underlying relationships between various factors. Through a detailed examination of the case study, challenges in the adoption and implementation of e-government services were highlighted. These challenges and hurdles ranged from technological to social and political in nature. They were added to the conceptual model as proposed in Chapter 3. Also included were political encounters and the government's strategy to tackle them. At the technological level, issues regarding skills and capabilities, business and IT integration and cooperation, and strategic partnerships between government and local partners were added. At the social level, the training and capacity building of employees was added. Moreover, legal and regulations were removed as they are not implementation factors. All the factors have been ordered at each stage of the implementation. The model as presented in the above table is a unique contribution to the literature, as it encompasses the following aspects:

• In terms of e-government implementation, this model, for the first time ever, explores challenges, at various and diverging levels, which are of a technological, social, and political nature. Institutional and unified theory dominated the previous model along with the use of technology, which backed the model with robust theoretical explanations to seek new understandings and explanations in terms of e-government implementation and adoption from employees' points of view.

• The new factors were explored and analysed through the lens of existing literature and empirical data and had been validated within the MoE employee. This helped modify the existing model per the dynamic needs of e-government implementation.

• Now this model can be employed by policy makers and decision makers to augment the prospects of e-government initiatives in various agencies and institutions. This will help them make complex yet successful decisions. The model can also be used by academics and researchers to understand various nuances in the theory and practise of e-government systems. This model highlights challenges, opportunities, and hurdles which a government may face in implementing such solutions. The most significant contribution of this chapter has been to establish a relationship between implementation and adoption factors in the context of e-government. This was a hefty task that created clear and direct relationships between dependent, independent, and intervening factors in technological, social, and political solutions.

CHAPTER 8.

CONCLUSION AND MAIN FINDINGS

This chapter seeks to provide an overall conclusion to this thesis and will also present the research overview and provide a discussion of the contributions the thesis has made in e-government implementation and adoption. This is followed by a discussion of the knowledge implications of the research findings, an outline of possible research limitations and a review of future research directions in e-government implementation and adoption.

Conclusion

A promise has been made by e-government to mimic the private sector by providing more accessible, transparent and efficient services to general stakeholders (Al-Shafi, et al., 2009; Flak, et al., 2009; Sofiane, 2005). Irrespective of the fact that the advantages provided by egovernment are well adapted, implemented and documented, the development of e-government has remained scant in both developing and developed countries across the globe. This holds specifically true in the region of Western Asia, where the investment of resources and money takes place at a wider level, but where a realisation has not been made regarding the maturity of e-government. Although stakeholders and employees have shown high interest in developing and promoting a system of e-government, the expectations of citizens and businesses have still not been met. An important rationale for this may be due to the lack of sufficient knowledge; where the users of a service (employees) do not become aware of the presence of e-government services. As a result, online services provided by the government are not adopted by its employees, even if those services provide added value. Hence, the purpose of this research was to create a conceptual model to map and investigate the associations between the adoption of e-government services by employees and the expectation of government for the implementation of such services. By rapidly aligning and analysing the problems of e-government with the aspects of adoption and implementation, this research focused on providing a better overview of the gaps that prevail between adoption and implementation.

In Chapter 1, the research problem was defined and some motivations were shown for performing this research analysis. In this chapter, the objectives of the study were stated, which are focused on proposing a conceptual model for the adoption and implementation of e-government. This model can generate awareness of e-government among its implementers and decision makers.

In Chapter 2, literature findings were presented, in which some e-government challenges were discussed in general. It emphasised the brief history of the adoption of e-government, followed by various definitions of e-government. In this section, various dimensions regarding the interaction of e-government were discussed. These dimensions were categorized into G2E, 2G, G2B and G2C and provided a detailed explanation of the interaction patterns and initiatives of every sector. Furthermore, Chapter 2 highlighted the challenges and benefits of e-government,

and this resulted in the identification of various contributions that had been made to the sector of e-government (the efforts of the government regarding the implementation of e-government and the expectation of employees regarding the adoption of e-government).

In Chapter 3, the researcher laid increased emphasis on the research problems that were identified in Chapter 2. A gap in the literature was identified by the researcher, mainly from the perspective of the cohesive theoretical model for gaining a deeper insight into the adoption and implementation of e-government system. In moving ahead, Chapter 3 focused on providing a detailed research framework. From this perspective, the challenges of e-government were examined in detail in Chapter 3. These challenges reported were faced by some of the government agencies which were involved in the adoption and implementation of egovernment. To gain a deeper insight into the various aspects of e-government implementation, a conceptual model was developed in Chapter 3, which was affected by an institutional theory. Moreover, in the proposed model, a set of social, political and technological challenges are present, which are faced in the implementation of e-government. While proposing the adoption of e-government, Use of Technology (UTAUT) and Unified Theory of Acceptance were used by the researcher (Venkatesh, et al., 2003), as a foundation for examining the factors impacting the adoption of e-government. The justification for the model of UTAUT was provided in this chapter, which is considered to be the most suitable model for examining the adoption of egovernment, wherein the institutional theory was supported and proposed for gaining a deeper insight into the broad range of challenges that impact implementation (see Chapter 3). By considering these factors, an e-government adoption and implementation model was developed by the researcher. (Figure 3.3). It was adjudged that a good understanding was provided by this model regarding the phenomenon of adopting and implementing the initiative of e-government. Furthermore, it was claimed that this model will provide better support, so that decision makers get the substantial support needed for triggering the process of adopting and implementing egovernance. The conceptual model was thoroughly studied in chapters 5 and 6, and was later validated and revised in Chapter 7.

In Chapter 4, the research approach was outlined, along with the design and methodology of research. In this study, the methodology was adapted and developed by first justifying and discussing some quantitative and qualitative research methods to gather data in the context of e-government that covers both the adoption problems faced by employees and the implementation problems faced by the government in the MoE in Kuwait. The collection of

data occurred by conducting interviews with the employees of the government, who were involved in the implementation activities of e-government. Moreover, a survey questionnaire also distributed among employees, mainly to test the conceptual model that was proposed in Chapter 3.

In Chapter 5, a case study was reported that talked about the implementation and background of e-government in the MoE in Kuwait. This chapter started by examining the existing use of e-government in the MoE. Specifically, social, political and technological issues experienced in the adoption of e-government were investigated, from the perspective of the MoE in Kuwait. Empirical data confirmed the various conceptual problems highlighted in the literature of Chapter 3 and different, new, social, political and technological challenges that were identified in the literature of Chapter 3 were highlighted. These findings were implemented in Chapter 7, which resulted in a validated conceptual model (see Figure 7.1). Moreover this chapter studied the factors that can affect the acceptance of e-government system within the MoE.

In Chapter 6, findings were presented that were extracted from the survey in which the use and adoption of e-government services by employees, was examined in detail. In this chapter, a reliability test was presented to assure the validity of each construct. A Cronbach alpha score of 0.70 was reported in the study. It was suggested by the findings of the research that the survey participants showed strong agreement with a few prompts of the construct. Lastly, the demographic analysis was performed between educational level, age, gender and construct of e-government adoption to test the association between variables.

In Chapter 7, the results of theoretical perspectives were reflected and confirmed. It then validated, refined, discussed and presented the conceptual model that was taken into consideration for the adoption and implementation of e-government.

8.1 Meeting the objectives of this research

The innovative contribution, and the main literature review that has been taken from the empirical research are presented and summarised as below:

Objective 1: The first objective of this study was to understand the current use of e-government. Therefore, a literature analysis was carried out to assess the main characteristics of an e-government system in order to obtain a clear understanding for this project. In this case, classifications of e-government, benefits, and challenges were investigated in order to increase awareness for the development of this project

Objective 2: The second objective was to develop a conceptual framework. In the area of egovernment, the literature review revealed that theoretical models which are associated with the adoption and implementation of e-government are absent. Therefore, it is crucial to propose and develop a conceptual model, mainly to get a thorough insight into the implementation of e-government in the context of the MoE in Kuwait. The conceptual model was developed for this reason in Chapter 3, to highlight the gap in the literature concerning the adoption and implementation of e-government (Figure 3.3). Organisational institutionalisation has been described by institutional theorists, for both the external and internal sources of organisations. Hence, an approach has been adopted by this study in which the change related to e-government has been studied in detail. While studying this change, a number of important factors impacting the implementation of e-government were studied, which mainly included political, social and technological themes, which were studied through the lens of institutional theory. Moreover, the most important characteristics impacting the expectations of employees, in terms of the usage and adoption of e-government was identified using the UTAUT model. It was noted that this conceptual model provides an integrated frame of reference for the wider research community of e-government, the MoE and the government of Kuwait.

Objective 3: The third objective focused on identifying the factors that influenced the MoE towards the implementation of e-government services. This objective was met by analysing data gathered with qualitative methods. The study identified several factors that might influence the implementation of e-government in the MoE. New factors were also recognised that are not listed in the institutional theory, (figure 7.1) namely the government's responsiveness to change, collaboration, e-government training and education for employees, skills and capabilities, business and IT alignment and e-government training and education for employees.

Objective 4: The fourth objective involved identifying the challenges that affect the adoption of e-government services by MoE employees. To meet this objective, a quantitative method was employed. Three kinds of factors such as social influence, facilitating conditions and effort expectancy significantly demonstrated the behavioural intention of the workers, when e-government was adopted by them. The largest variance recorded was by social influence (B=0.876), then secondly by the construct of effort expectancy, and lastly by the construct of performance expectancy, with a variance of (B= 0.024). However, the construct of performance expectancy had a positive correlation but did not provide any explanation for the adoption of e-government in MoE in Kuwait.

Objective 5: The fifth objective for this study was to validate and develop the conceptual framework. In Figure 7.2, a revised conceptual model was proposed, which may be used as a point of reference for government officials and decision makers. In addition, the relationships of these themes can better be analysed by gaining an insight into the conceptual model. This model has been modified and validated to provide a new solution for the adoption and implementation of e-government (Figure 7.2). In this model, a review of the challenges and implementation of e-government has been encapsulated, based on three important themes, social, political and technological. In terms of adoption, the six constructs are included in the proposed model. These are: a) behaviour of e-government usage and three demographic constructs such as educational level, age and gender, b) behavioural intention, c) facilitating conditions, d) social influence, e) effort expectancy and f) performance expectancy.

8.2 Contribution To Knowledge

Although a large number of research studies have been conducted in which the adoption rate of employees towards e-government has been explored in different states, an argument has been made by the author that currently, there is no specific research that explores the adoption of e-government in Kuwait. The complete ability of e-government is less likely to be realised without the employees who would participate or adopt such services. This perspective is clearly stated in the recent efforts of the Kuwaiti government on the diffusion and development of egovernment within which one of the main goals is to encourage the diffusion, development and preparation of employees for effective service delivery. From this perspective, the results of this study have expanded the knowledge boundaries in the area of e-government, thereby enabling an innovative and valuable contribution to adoption and implementation of egovernment.

A contribution has been made by this study to highlight the conceptual factors of e-government in chapters 1, 2 and 3. In chapter 4, a number of research methods were reviewed and normative literature was synthesized. In practical terms, a major contribution has been made by this thesis in the pursuit of gaining a deeper insight into the efforts of e-government, specifically in the MoE in Kuwait (which has been reflected in Chapters 5 and 6). Finally, the basic objective of the study was re-examined, wherein the relation between the adoption and implementation of e-government was explored in detail. The aims of the section are highlighted to outline important research contributions. It is claimed by the researcher that novel contributions are made by this thesis in the following domains:

Contribution 1: It was identified in Chapter 2 that theoretical models are absent that can help us to gain a deeper insight into the various challenges that are impeding the implementation of e-government. To fill this gap, a conceptual model was proposed by the author in Chapter 3, with the intention of gaining a deeper insight into the potential relationship between the factors affecting the usage and adoption of e-government and the challenges impacting the implementation of e-government. Based on the results, Chapter 7 presented a revised conceptual model (Figure 7.1) that was then confirmed (Figure 7.2). It depended on the survey evidence and empirical research that was derived from the survey data and case study.

Contribution 2: In Chapter 7, the conceptual model was proposed (figure 7.2) by integrating the two factors of e-government (adoption and implementation). Firstly, the challenges encountered by the implementation of e-government were addressed. These challenges were examined and themed under three important domains, namely political, social and technological, that were impacting implementation. Based on the three important factors, various challenges were highlighted that were influencing the implementation of e-government. A contribution was then made by the consequent research studies to expand these elements by pinpointing the new challenges (partnership of local industry, the alignment of IT and business, capabilities and skills, collaboration, training given to employees and responses of government towards change). On the side of adoption, a contribution was made by this study by proposing five important elements that impact the adoption of e-government, namely,

behavioural intentions, facilitating conditions, social influence, effort expectancy and performance expectancy to adopt the services of e-government in the MoE in Kuwait.

Contribution 3: It was confirmed via a revised conceptual model that social variables such as educational level, age and gender played a contributing role, when the actual use and adoption of e-government was explained.

Contribution 4: At the level of practicality, a conceptual model was proposed by the author (figure 7.2), which can be utilised as a guide for decision makers to support implementers and government officials who are looking to successfully adopt and implement e-government. Also, researchers can use the revised conceptual model to analyse and understand the challenges of e-government that might impede the implementation. It can also be taken into consideration to manage and predict the expectations of employees regarding the usage and adoption of e-government.

Considering the aforementioned contributions, a pioneering and initial effort has been represented in this research, especially in the Gulf States such as Kuwait. It also highlights the subsequent behavioural usage in the MoE. Moreover, it is considered to be an important study in highlighting the problem of various efforts that have been put forth by the government to use and adopt the system of e-government. Furthermore, by deploying the quantitative and qualitative research approaches, this research has been carried out at initial level, in which the role performed by different factors and challenges have been confirmed towards the successful adoption and implementation of e-government in the MoE.

By making use of the popular theoretical models, including the UTUAT model (for examining the e-government adoption) and Institutional Theory (for gaining an insight into implementation), an effective theoretical framework has been offered by this research for examining the phenomenon of e-government.

As identified in Chapter 1 of this report, the basic objective of this study was to gain a deeper insight into the potential gaps and relationship between the adoption and implementation of e-government. This was particularly relevant as the motivation for this study was driven by the lack of past studies and literature providing a unified perception of adopting and implementing e-government. Although e-government literature is abundant, a focus has been developed by

the majority of research studies, either on the diffusion, adoption or implementation aspects in isolation.

This gap in the literature has given rise to various initiatives of e-government that are experiencing delayed implementation, especially in developing states. This is further triggered by the absence of already accessible services in these states. Hence, this study has been conducted to determine/ascertain the link between the adoption and implementation of e-government by performing a survey and case study on the MoE in Kuwait.

As stated in Chapter 7, it has been indicated by the empirical findings and the literature of current study that it is hard to recognise the explicit relationship between adoption and implementation of e-government. This may demonstrate why researchers have become unable to explore the varied stages and concepts of e-government from adoption to implementation.

8.3 Research Limitations

Certain limitations were encountered in this research, which were as follows:

The first limitation of the research was that it was a cross-sectional study, which was unavoidable due to the total time given for conducting the study. Various UTUAT research (Alawadhi and Morris, 2008; Schaper and Pervan, 2004, 2007; Venkatesh, et al., 2003; Venkatesh and Davis, 2000) were longitudinal, in which information was gathered at various points in time for computing, using behaviour and behavioural intention at various points in time to examine the change in dependent constructs (Sekran, 2000). This research was cross-sectional, in which data was gathered over a single period of time.

The second limitation is based on this research having only used one case study. It is therefore difficult to assert with certainty or generalise whether the proposed conceptual model is applicable in other implementations of e-government and whether it can be used in other settings.

Some of the limitations experienced occurred when the empirical survey was conducted, as the data regarding the national population was not accessible by the general public, mainly because of legal restrictions. A convenient sampling method was used by the survey protocol, by

choosing to administer the questionnaire in the various organisations and agencies. This was made possible because of the contact made at a personal level, in all eight municipalities.

8.4 Areas for Future Research

In this research study, there are certain areas which need to be further explored and investigated. Also, some alternative directions have been recommended on which future work can be based. These include:

Recommendation 1: Various challenges faced by e-government were proposed in the current research, which is based on a single case study and past literature studies. It is proposed by the author that these can be further be examined and perhaps broadened to discover more challenges.

Recommendation 2: In chapters 2 and 3, past literature studies were taken into consideration to recommend various challenges that are experienced during the implementation of e-government, under the wider categories such as social, political and technological factors. However, various literature on e-government has also classified and identified cultural, economic and organisational challenges. Hence, it is further suggested that various economic, cultural and organisational themes can be explored that affect the implementation of e-government.

Recommendation 3: In the future, the effect of implementing e-government can be examined on the political fabric and formal structures of a state.

Recommendation 4: For the aspect of e-government adoption, the UTUAT model has been suggested in Chapter 3. In the UTUAT model, the most important factors of using behaviour and behavioural intention include behavioural intention, facilitating conditions, social influence, effort expectancy and performance expectancy. In this study, the researcher focused on five direct factors of behavioural intention. Education level, age and gender were considered as direct factors impacting the adoption of e-government. Future studies can study other factors of adoption, such as trust and culture, which might impact the intention of employees to adopt e-government in Kuwait.

Recommendation 5: Some parts of this research focused specifically on technology adoption by employees (in this case, services and application of e-government) by examining the UTUAT model in a single context of one organization, i.e., the MoE in Kuwait. In the future, research can be conducted (to expand the scope of this study) in other regional states and ministries of Kuwait.

8.5 Overall conclusion

This study was considered a single piece of research that aimed to develop an understanding of the most fruitful approaches to improving the provision of e-government in general, and the implementation and adoption of e-government services in particular. As the many literature reviews emphasise, e-government in developing countries is under-researched. This in-depth study is the first of its kind that has attempted to explore the implementation and adoption of e-government services in the MoE in Kuwait, as one of the developing countries, using a mixed-methods approach. The MoE in Kuwait is trying to cope with the advancement of technology. Yet, much more can be done to adopt and implement the e-government system effectively in the ministry.

Although this study has chiefly focused on e-government in the MoE in the Kuwaiti context, the value of conducting it exceeds the boundaries of its specific context. The findings of this study should be able to inform e-government systems worldwide. The research model has been able to identify factors that determine both implementation and adoption of e-government. This also makes a contribution to the literature on implementation and adoption.

Finally, this research is submitted hoping that it has contributed to the literature on egovernment and the literature on IS. Furthermore, it is hoped that decision-makers and government leaders and researchers in the field of e-government will find it a helpful resource.

8.6 Chapter Summary

According to the viewpoint of the author, this is the first research paper in which the problem related to the adoption and implementation of e-government has been addressed, from the perspective of employees in the MoE in Kuwait. Based on the results, a conclusion can be

drawn that knowledge has been extended by this research study, specifically in the domain of the employees' adoption of e-government services. This research was supported by two important theories, namely the Unified Theory of Acceptance and the Use of Technology and Institutional Theory, in which a validation has been developed regarding the important factors in the adoption and implementation of e-government for the employees in the MoE.

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Appendix 1: INTERVIEW QUESTIONS General question:

Your name, years of experience, qualification, your job position, your job title

Implementation of e-government:

- a) what is the current use of e-government?
- b) Do you think e-government is a solution for your issues?
- c) what are the challenges you face with the current use?

Commitment and Support for Executive Leadership and Top Authority Level

a) How would you illustrate the support and commitment of the government officials towards the Ministry of Education e-government project?

b) How would you describe the support and commitment of the top authority level and Leaderships towards the e-government project?

c) How do you deal with resistant to change among your staff when implementing egovernment initiative?

Financial challenges

a) Is e-government funding aligned with priorities outlined in its strategy?

b) Would you consider financial issues as a key challenge in developing the Kuwaiti e-government?

Legal/ Regulatory Framework

a) Is privacy of information protected in e-government organisation legislation?

b) Is there any clear rules established permitting the use of cryptography, and policy set concerning key recovery in order to ensure security of data and transactions?

c) Are there any regulations that ensure security and privacy of the Kuwaiti egovernment users and mainly citizens?

d) Is there any online services regulation and legislation in place in the country. How would you describe the current legislative process? (E.g. efficient/inefficient).

Human Issues

a) How would you describe the importance of IT infrastructure to implement egovernment initiatives?

b) Are there a clear strategy and awareness to implement e-government initiatives?

c) How would you rate the support level from top management toward e-government implementation?

d) How would you describe the qualification level of your staff in terms of IT skill?

e) How would you describe the IT training in your organization?

f) What is the cooperation level between your department and other departments in your organization with respect to e-government initiative implementation?

g) Do you face problems in obtaining the required budget to implement e-government

Appendix 2: Questionnaire Survey in English

Salford Built Environment school , University of Salford, Salford,



My name is Fatemah Hamadi a PhD student at the University of Salford. I am presently in the process of completing a research project that relates to e-government and you are respectfully invited to take part in this study. Before you decide, it is important for you to understand why the research is being done and what it will involve.

Please take time to read the following information carefully. Kindly ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

One of the key issues that ministry of education in Kuwait face is the waste time of employees by finishing their applications. Employees required to wait for more than day in order to finish Their application. As researcher worked in the ministry of education he believes that ministry of education can improved this process in order to improve the communication between the ministry and the stockholders or can contribute to a partial solution for this problem.

The purpose of my research is to develop a strategic approach for the implementation and adoption of an e-government system that promote effective communication amongst stakeholders within the ministry of education in Kuwait.

You are being invited to take part in the study because your organisation fits this criterion of research. The outcome of this study will help policy makers and e-government developers to take into account factors which experts consider as important in order to maximize the benefits and avoid the problems of an e-government services system. It would be greatly appreciated if you would take just a few minutes of your time to complete the questionnaire. Please follow the instructions and complete the survey.

Your participation in this survey is completely voluntary; you don't have to respond to every item, and you can discontinue participation at any time without reprisals. The information collected during the study will only be used to accomplish the research requirements, and all responses provided on this survey will remain confidential. By reading this information and completing the survey below, your consent to participate in this study will be implied.

1	What is your gender?	1. Male 2. Female
2	What is your age?	1. under 18 2. 18-24 3. 25-29 4. 30-44 5. 45-54 6. 55 and older
3	What is your o	ccupation?
4	What is your educational background?	 Secondary Education or less Bachelor Higher Education (postgraduate qualification)
5	What is your nationality?	1. Kuwaiti 2. Other
6	How many years have you been using the Internet?	 1. 1 - 6 months 2. 7 - 11 months 3. 1 - 2 years 4. 3 - 4 years 5. more than 4 years
7	How often do you use the Internet?	 Everyday Several times a week Several times a month Once a month Never

using the Internet?	
How often do you use the Internet to gather information about or from the government?	 Everyday Several times a week Several times a month Once a month Never

Circle the Most Suitable Number to Your Opinion From the Following Scale: 1 = Strongly Disagree. 2 = Disagree. 3 = Neutral. 4 = Agree. 5 = Strongly Agree.

Performance Expectancy Statements

8

9

	12345	
Online government system would enable me to access government information		
and services when I need them - 24 hours/day, 7 days/week		
and services when I need them - 24 nours/day, 7 days/week.		
E-government system via the Internet will not be useful due to inefficient	12345	
availability of government information and services in the e-government		
portal.		
1		
Using the encounter system will each be use to account is to also more	10245	
Using the e-government system will enable me to accomptish tasks more	12345	
quickly.		
I do not think that the e-government project integrates well with other	12345	
government /ministries		
government / ministries		
E-government systems seem incompatible with most aspects of my devices.	12345	
Overall the e-government system is useful to me and other citizens	12345	
overani, the e government system is useral to me and other entitiens.	12343	
Effort Expectancy Statements		
Learning to operate the e-government system is easy for me.	12345	
I would find the a government system easy to use if I received suitable	12245	
i would find the e-government system easy to use if i fecerved suitable	12343	
training.		
It is easy for me to become skilful in using the e-government system.	12345	
	1 2 2 4 5	
Overall, I believe that the online government system is easy to use.	12345	
Social Influence Statements		
	10045	
My mends and colleagues think that I should use the e-government system.	12345	
My family members and relatives think that I should use the e-government	12345	
system		
System.		
People around me who use the e-government system have more prestige.	12345	
I find it difficult to use the e-government services due to lack of information	12345	
and awareness compaigns		
and a wareness campaigns.		
Overall, I am not satisfied with the awareness campaigns (TV, radio,	12345	
newspapers, banners in government agencies websites, and in shopping malls)		
and the level obtained by e-government officials		

Facilitating Conditions Statements1 2I have the resources necessary to use the online government system.1 2Given the resources, opportunities and knowledge it takes to use the e-government system, it would be easy for me to use the system.1 2I have enough Internet experience to use the e-government services.1 2There is no doubt of the high government support towards the e-government project.1 2I am satisfied with the security and privacy measures provided with the e-government system.1 2I feel assured that the legislation level currently implemented encourages me to adopt e-government system in the future.1 2I predict using the e-government system in the future.1 2I intend adopting e-government system in the future.1 2		
I have the resources necessary to use the online government system.1 2Given the resources, opportunities and knowledge it takes to use the e-government system, it would be easy for me to use the system.1 2I have enough Internet experience to use the e-government services.1 2There is no doubt of the high government support towards the e-government project.1 2I am satisfied with the security and privacy measures provided with the e-government system.1 2I feel assured that the legislation level currently implemented encourages me to adopt e-government services.1 2Behavioural Intention Statements1 2I predict using the e-government system in the future.1 2I intend adopting e-government system in the future.1 2	Facilitating Conditions Statements	
Given the resources, opportunities and knowledge it takes to use the e- government system, it would be easy for me to use the system.1.2I have enough Internet experience to use the e-government services.1.2There is no doubt of the high government support towards the e-government project.1.2I am satisfied with the security and privacy measures provided with the e- government system.1.2I feel assured that the legislation level currently implemented encourages me to adopt e-government services.1.2I predict using the e-government system in the future.1.2I plan to use e-government system in the future.1.2I intend adopting e-government system in the future.1.2	I have the resources necessary to use the online government system.	12345
I have enough Internet experience to use the e-government services.1I are is no doubt of the high government support towards the e-government project.1I am satisfied with the security and privacy measures provided with the e-government system.1I feel assured that the legislation level currently implemented encourages me to adopt e-government services.1Behavioural Intention Statements1I predict using the e-government system in the future.1I plan to use e-government system in the future.1I intend adopting e-government system in the future.1	Given the resources, opportunities and knowledge it takes to use the e- government system, it would be easy for me to use the system.	12345
There is no doubt of the high government support towards the e-government project.1.2I am satisfied with the security and privacy measures provided with the e- government system.1.2I feel assured that the legislation level currently implemented encourages me to adopt e-government services.1.2Behavioural Intention Statements1.2I predict using the e-government system in the future.1.2I plan to use e-government system in the future.1.2I intend adopting e-government system in the future.1.2	I have enough Internet experience to use the e-government services.	12345
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I feel assured that the legislation level currently implemented encourages me to adopt e-government services.1 2Behavioural Intention Statements1 2I predict using the e-government system in the future.1 2I plan to use e-government system in the future.1 2I intend adopting e-government system in the future.1 2	I am satisfied with the security and privacy measures provided with the e- government system.	12345
Behavioural Intention Statements I predict using the e-government system in the future. 1 2 I plan to use e-government system in the future. 1 2 I intend adopting e-government system in the future. 1 2	I feel assured that the legislation level currently implemented encourages me to adopt e-government services.	12345
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I plan to use e-government system in the future.1 2I intend adopting e-government system in the future.1 2	I predict using the e-government system in the future.	12345
I intend adopting e-government system in the future.	I plan to use e-government system in the future.	12345
	I intend adopting e-government system in the future.	12345

Have you ever used the national e-government system? YES / NO

Thank you for your time

Appendix 3 : Ethical approval form

University of Salford MANCHESTER Research, Innovation and Academic

Engagement Ethical Approval Panel

Research Centres Support Team

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10 November 2016

Dear Fatema Hamadi,

<u>RE: ETHICS APPLICATION STR1617-01</u> – A Strategic Approach to the Implementation of Egovernment System for The Ministry of Education In Kuwait

Based on the information you provided, I am pleased to inform you that your application STR1617-01 has been approved.

If there are any changes to the project and/ or its methodology, please inform the Panel as soon as possible by contacting <u>S&T-ResearchEthics@salford.ac.uk</u>

Yours sincerely,



Prof Mohammed Arif Chair of the Science & Technology Research Ethics Panel Professor of Sustainability and Process Management School of Built Environment University of Salford Maxwell Building, The Crescent Greater Manchester, UK M5 4WT Phone: + 44 161 295 6829 Email: m.arif@salford.ac.uk