Factors that Influence the Adoption of e-Learning An Empirical Study in Kuwait

Thesis submitted for the degree of Doctor of Philosophy by

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PhD Summary

E-learning has emerged as a necessity to meet the challenges posed by the development of information technology and its potential for greater access to knowledge. The general hypothesis of this research is that; e-learning as an organizational activity started in the developed countries, and as such, the implementation models developed there are taken as a benchmark. The implementation barriers and the influential factors for adopting e-learning in different regions and societies may or may not be the same as those found in the developed countries (with varying degrees of intensity or importance). Hence, those available implementation models may not necessary be followed in all stages and steps when used by different countries and societies. Accordingly, the implementation barriers and the influential factor may differ from one case to another.

Since e-learning is respectively new in Kuwait and no comprehensive studies about the adoption of e-learning or the important factors that would influence the adoption of e-learning in Kuwait (ref), the aim of this research is to investigate and find the main and important factors that would influence the acceptance and adoption of e-learning in Kuwait as an example of a developing country.

In order to realize the aim of this research, the e-learning literature was reviewed, and an exploratory study was conducted in Kuwait. The exploratory study explored the state of e-learning in Kuwait and investigated the influential issues to e-learning adoption. Then, a conceptual model was proposed based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model, and amended it with the outcomes of the exploratory study to suit the context of the study. The proposed conceptual model was developed to study e-learning adoption in Kuwait and to offer a further explanation of the adoption of e-learning in the Kuwaiti context. Triangulation in data collection was used to examine and validate the conceptual model, where quantitative and qualitative methods were used. A questionnaire-based survey was firstly conducted, followed by an interview-based field study. This thesis concludes by highlighting the main findings of the research, and presenting the main contributions of this research.

Acknowledgement

First and foremost my gratitude goes to Allah the almighty god for blessing me with the opportunity to extend my study to this level, and blessing me in every stage of my life. It would not have been possible to write this doctoral thesis without the help and support of the kind people around me, to only some of whom it is possible to give particular mention here.

Above all, I would like to express my feelings of pride toward my wife Mona. She encouraged, supported and guided me during all stages of my postgraduate studies. At all times she behaved like a candle to enlighten my life. She has never disturbed my study with any kind of complaint. She always hides her pains and troubles just to make me feel that studying abroad was a pleasurable thing to do. She bore the responsibility of taking care of my children from the first day I started this endeavor. As a result, this thesis was not possible without her encouragement and support; there are no words to show you my appreciation.

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Dedication

This thesis is dedicated to my family; my wife, my children, my brothers and sisters. This thesis is dedicated in particular to my brother Abdullah who raised me and my brothers and sisters like a father.

God bless them all

Declaration

This thesis gives an account of the research undertaken by Mubarak Al-Kharang. Some of the material contained herein has been accepted and presented in the form of the following publications:

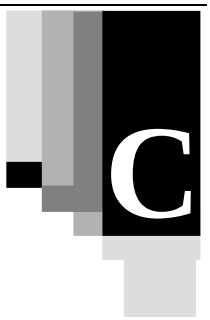
Journal Papers

ALKHARANG, M. M. & GHINEA, G. 2013. E-learning in Higher Educational Institutions in Kuwait: Experiences and Challenges. *International Journal of Advanced Computer Sciences and Applications,* 4**,** 1-6.

Conference Papers

ALKHARANG, M. 2010. Factors that Influence the Adoption of e-Learning: An empirical study in Kuwait. *European Conference on e-Learning.* Porto, Portugal.

ALKHARANG, M. & GHINEA, G. 2013. Factors influencing the adoption of e-learning in Kuwait. *World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*. Las Vegas, NV, United States.



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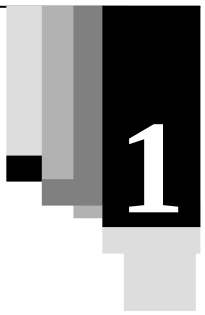


1 Chapter 1: Introduction to the Research Area

1.1 Overview

E-learning has emerged as a necessity to meet the challenges posed by the development of information technology and the potential for greater access to knowledge. There is much examination into the effects of communication and information technology (IT) on learning. Innovative techniques are still being explored with the aim of achieving learners' attention, and establishing active and tailored learning environments wherein learners are able to pursue continuous learning, in a motivated manner, with the use of various tools of information technology. This chapter presents an introduction to the research area, and highlights issues considered in this research. The research problem will be introduced and the research context will be also presented. The research aim and objectives will be then offered. Further, the significance of this research will be explained. Finally, the chapter concludes by presenting an outline to the thesis with brief description for each chapter.

1.2 Introduction to the Research Problem and Context of the Study

The fast advances in technology, the extensive expansion of the Internet, the considerable improvement in information technology and communication, and the successful experiences of e-services around the world have redefined the educational organizations' expectations of e-learning. The Internet and communication technologies are well embraced around the world, and the educational organizations have been aware of their enormous potential as a learning tool. Hence, governments have become more interested about the potential benefits of e-learning, and urged the educational organizations to use and adopt e-learning to provide cost efficient, easily accessible, and efficient lifelong education regardless of age, time, and place.

Since e-learning was started and implemented in the developed countries, the implementation and adoption models developed there were taken as a benchmark. However, the influential factors and barriers for adopting e-learning in different regions and societies may or may not be the same as those found in the developed countries (with varying degrees of intensity or importance). Therefore, those available implementation models may not necessary be followed in all stages and steps when

used by different countries and societies. Consequently, the influential factor and barriers may differ from one case to another.

This research studies the adoption of e-learning in higher educational organizations in Kuwait by investigating the important factors that would influence the adoption of e-learning. The investigation and exploration include: a) understanding what is e-learning and what are the benefits from using such technology, b) knowing the appropriate development stages for e-learning projects, c) identifying the important issues and factors that would influence the implementation, usage, and adoption of e-learning, d) studying and discussing these influential issues and factors, and e) proposing answers to solve or minimize the research gap. The context of this study is Kuwait as an example of developing country as classified by the United Nation (UN-DESA, 2013). Some background information about the research context will be presented next.

1.3 Context of the Study

Geography

Kuwait is situated in Southwest Asia, bordering the Persian Gulf, Iraq and Saudi Arabia. Kuwait is bordered by Iraq to the north and west, Saudi Arabia to the south and west, and the Persian Gulf on the east (Figure 1.1). Kuwait was a prosperous trade center for many centuries, and came to greater international prominence in the post-World War II era largely because of its strategic location at the head of the Persian Gulf and oil revenues (CIA, 2013). Kuwait is located in the north-east corner of the Arabian Peninsula, and is one of the smallest countries in the world in terms of land area, with an area of 17,818 km² (6,880 sq mi). It lies between latitudes 28° and 31° N, and longitudes 46° and 49° E. The country is generally low lying, and the flat, sandy Arabian Desert covers most of Kuwait. The highest point in Kuwait is 306 m (1,004 ft) above sea-level (CIA, 2013). It has nine islands, all of which are uninhabited. Of these, Bubiyan is the largest island in Kuwait with an area of 860 km² (330 sq mi), and is connected to the rest of the country by a 2,380 m (7,808 ft) long bridge (RUSSELL, 2000).

Figure 1.1: Location of Kuwait

Kuwait has a desert climate, making it generally both a hot and dry climate. Rainfall in the nation varies from 75 to 150 millimeters (2.95 to 5.91 in) a year. Actual rainfall has ranged from 25 millimeters (0.98 in) a year to as much as 325 millimeters (12.8 in). The summers are relentlessly long, punctuated mainly by dramatic dust storms in March and April when northwesterly winds cover the cities in sand (WMO, 2013). In summer, average daily high temperatures range from 42 to 48 °C (107.6 to 118.4 °F); the highest ever temperature recorded in Kuwait was 53.8 °C (128.8 °F) at Sulaibya on July 31, 2012. By the end of October the hot weather is over, and colder winter weather sets in, dropping temperatures to as low as 0 °C (32 °F) at night. On the other hand, daytime temperatures range between 15–20 °C (59–68 °F). The lowest official temperature recorded was −6.1 °C (21.0 °F) at Kuwait City in January 1964 (Met-Department, 2013).

Population

98% of Kuwait's population is urbanized, with 83% residing in cities. The CIA Fact book estimates that the total population is roughly 2.7 million people: 1.4 million

Kuwaiti citizens and 1.3 million non-Kuwaiti nationals (CIA, 2013). This contradicts the same CIA Fact book's information in the ethnic group section (CIA, 2013), which showed that the total population was 3.892 million: 1.227 million Kuwaiti (0.603 male and 0.624 female) and 2.665 million non-Kuwaiti (1.738 male and 0.927 female). The second estimation was supported by a statistical report generated in 2013 by the Public Authority for Civil Information (PACI, 2013c), see Figure 1.2.

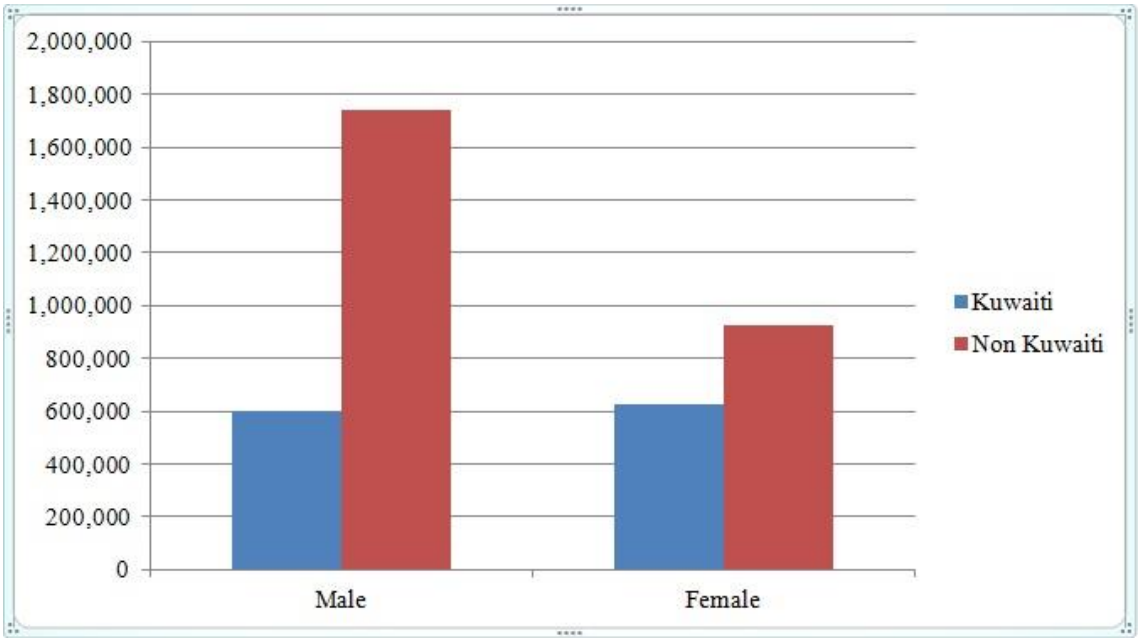


Figure 1.2: Population of Kuwait

Furthermore, Kuwait has a youthful population as about half of the Kuwaiti population is under the age of 25, and almost half of them are less than 10 years old (PACI, 2013b). Figure 1.3 illustrates the Kuwaiti population distribution by gender and age for the year 2013.

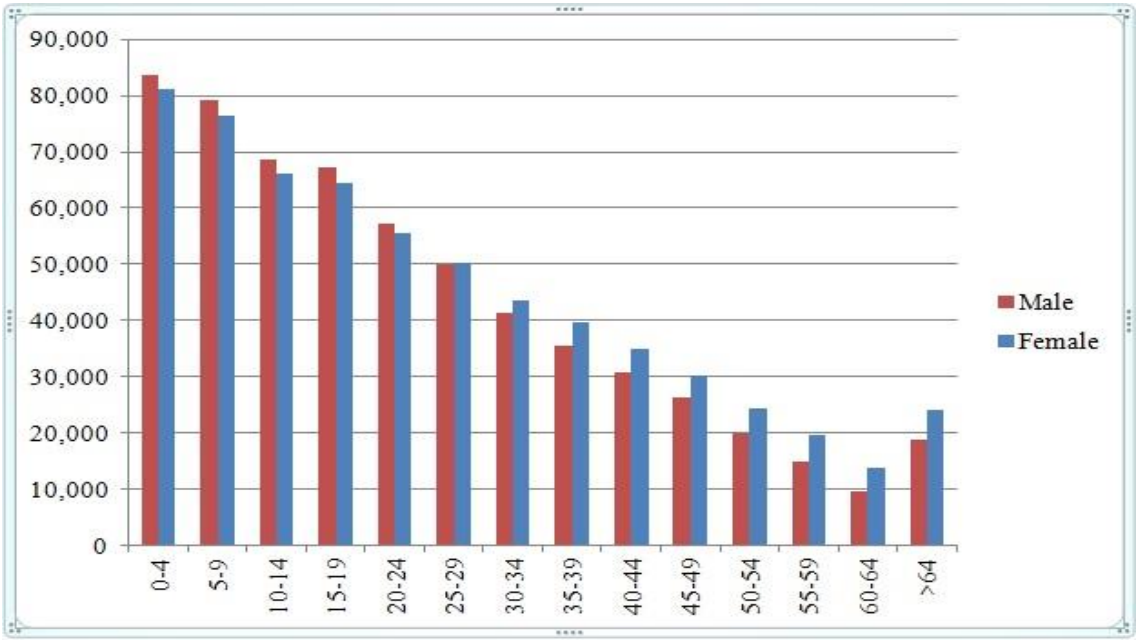


Figure 1.3: Kuwaiti population distribution by gender and age

A recent census carried out in Kuwait showed that Asians make up the majority of foreigners, who constitute two-thirds of the Kuwaiti population. According to the report of the Ministry of Planning on the 2011 census, this chronic imbalance in the population composition is worsening. Between 2005 and 2006, the number of native Kuwaitis increased by 3.3%, while the number of foreigners increased by 6.7% due to immigration. The non-nationals population mainly consists of two large ethnic groups, Arab and Asian.

Arab Communities

According to official figures, Egyptians are the largest Arab community in Kuwait, amounting to 453,000 people. They work in governmental departments, education and public services, medicine and other fields. An additional large segment of the Egyptian community is construction and maintenance workers. Meanwhile, others are victims of the so-called "residency trade" in Kuwait. Syrians are the second-largest Arab community, with 131,000 working in industrial, commercial, educational and health sectors. The Jordanian and Palestinian communities remain limited to around 53,000 people. Despite the improvement in relations with Amman and the Palestinian Authority, the Kuwaiti government does not want the Palestinians and Jordanians'

number to return to 380,000, as was the case on the eve of the invasion from Iraq in 1990 (PACI, 2013c).

The Lebanese population reached 42,000 people, which constitutes a decrease compared to previous periods. This is due to the fact that Lebanese visa applications are being rejected in view of the growing Iranian influence on certain parties in Lebanon. The Lebanese work in trade and vocational fields. The same applies to Iraqis, whose number does not exceed 15,000. Most of the Iraqi community in Kuwait has been living there since 1990. There is no interest, whether official or popular, to increase this population in Kuwait, despite the alleged improvement in relations between Kuwait and Iraq after 2003. The Yemeni community is also very limited, with 11,000 people only (PACI, 2013c).

Asian Communities

The total number of the Indian subcontinent's nationals in Kuwait amount to 1.066 million people, which is almost equivalent to the number of Kuwaitis. Indians constitute the largest community, with 647,000 people which play a vital role in the labor market in industrial, service and business fields. Bangladeshis come next with 189,000 people, and are mostly working as domestic servants. Pakistanis, constituting 120,000 people, work as laborers or craftsmen. There are up to 110,000 Sri Lankans in the country, most of whom are employed as domestic workers. The nationals of the Indian subcontinent are considered an extension of the Kuwaiti heritage in India, and the government does not view them as cause for political alarm. However, some independent Kuwaiti politicians fear that in the long term, relying on them in the local economy will have major political and security effects (PACI, 2013c).

Filipinos, who amount to 142,000 people, form a mix of skilled labourers, such as technicians and nurses, and unskilled workers, such as maids. Recent years have witnesses an increase in the number of Ethiopians, who have reached 74,000 people, while Nepali arrivals reached 52,000. The number of Indonesians, on the other hand, dropped compared to previous periods. Their number had swelled to around 19,000, with most of them working as domestic servants. This decrease comes as a result of the restrictions imposed on female citizens by the Government of Jakarta, banning them from working in the Gulf.

The Iranian community stands at 43,000 people according to official figures. However, some Kuwaiti MPs claim that their actual number is much larger and demand to identify the Iranian labor force more clearly due to security concerns. Afghans, who amount to 14,000 people, have started to replace Iranians in some occupations, such as bakers and construction workers. Figures showed that the number of Americans swelled to 13,000, making them the largest Western community. However, this figure does not include military personnel under the US armed forces, whose number amounts to 20,000 soldiers living in camps. American residents mainly work in industrial sectors such as oil. Others work in large companies as consultants or are trainers of the Kuwaiti army. Additionally, hundreds of American women are married to Kuwaitis (PACI, 2013c).

Religion

Islam is the official religion in Kuwait, with the majority of the citizen population being Muslim (Sunni 60-70%, Shia 30-40%) (US-Department, 2012). Kuwait also has a native Christian community; in 1999 there were 400 Christian Kuwaiti citizens (PACI, 2013b). In June 2013, there were 256 Christian Kuwaiti citizens residing in Kuwait (PACI, 2013b). There is also a small number of Baha'i Kuwaiti citizens that follow the Baha'i religion (US-Department, 2012). Most foreigners in Kuwait are Muslim, Hindu, Christian or Buddhist.

Language

The native and official language is Arabic, fluency in which is a requirement for naturalization. Kuwaitis speak a dialect of Gulf Arabic, and Modern Standard Arabic is taught in schools. Kuwaiti Sign Language is used by the deaf community. English is the second language taught in public schools. Hindi, Urdu, Persian (Farsi), and other languages are also widely spoken among the foreign population.

Political Context

Kuwait is a constitutional, hereditary emirate ruled by princes (Amirs) who have been drawn from the Al Sabah family since the middle of the 18th century. The 1962 constitution provides for an elected National Assembly and details the powers of the

branches of government and the rights of citizens. Under the Constitution, the National Assembly has a limited role in approving the Amir's choice of the Crown Prince, who succeeds the incumbent Amir upon his death. If the National Assembly rejects his nominee, the Amir then submits three names of qualified candidates from among the direct descendants of Mubarak the Great, the founder of modern Kuwait, from which the Assembly must choose the new Crown Prince. Successions have been orderly since independence (e.Gov-KWT, 2013). In January 2006, the National Assembly played a symbolically important role in the succession process, which was seen as an assertion of parliament's constitutional powers (US-Department, 2012).

Kuwait is divided into 6 governorates (muhafazah). The governorates are further subdivided into districts (Figure 1.4).

No.	Governorate	Capital	Area km²	Population Census of 2013
1	Al Jahra	Al Jahra	12 130	484874
2	Al Asimah	Al Asimah	200	522669
3	Al Farwaniyah	Al Farwaniyah	190	1030647
4	Hawalli	Hawalli	84	853514
5	Mubarak AlKabeer	Mubarak AlKabeer	94	231370
6	Al Ahmadi	Al Ahmadi	5 120	763925
TOTAL			**17 818**	3886999

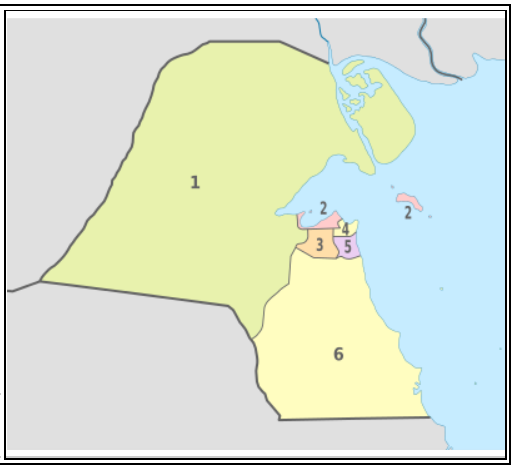


Figure 1.4: Summary of Kuwait Governorates

Economy

Kuwait has a geographically small, but wealthy, relatively open economy with crude oil reserves of about 102 billion barrels - about 7% of world reserves. Virtually all of Kuwait’s wealth is derived directly or indirectly, by way of overseas investments, from petroleum extraction and processing. The most dramatic element of Kuwait’s economic development has been the steady and rapid expansion of its oil industry since the 1970s. By the mid-1980s Kuwait was refining four-fifths of its oil domestically and marketing some 250,000 barrels a day in its own European retail outlets under the name “Q8.” This oil income and the investment income it generated (the latter surpassed direct sales of oil revenues by the 1980s) gave Kuwait one of the highest per capita incomes in the world. However, both the Iraqi invasion (which

nearly exhausted Kuwait's overseas investment revenues) and the increasing volatility of the global oil market in the 1980s reduced this income substantially; nonetheless, income levels rebounded when oil prices rose dramatically in the early 21st century. Other sectors of Kuwait's economy are weak by comparison; agriculture, manufacturing, and trade constitute only a small proportion of gross domestic product (GDP). Kuwait has done little to diversify its economy, in part, because of this positive fiscal situation, and, in part, due to the poor business climate and the historically acrimonious relationship between the National Assembly and the executive branch, which has stymied most movement on economic reforms. In 2010, Kuwait passed an economic development plan that pledges to spend up to $130 billion over five years to diversify the economy away from oil, attract more investment, and boost private sector participation in the economy (CIA, 2013).

Education

Education in Kuwait is a right for all citizens and its overall goal is to prepare individuals to become active and thoughtful members of society in both private and public life. The development strategy in Kuwait emphasizes the role of educational organizations in developing these qualities, and in training individuals to form part of a skilled body of human resources. Education is viewed as the main tool for building high performance in society at the institutional, economic, and cultural levels. Therefore, the role of education is to strike a balance between safeguarding the Kuwaiti cultural identity and preparing citizens to meet changes within the country and regional and international levels. Also, education in Kuwait aims to provide basic skills to prepare citizens to meet technological advancements and students for practical life. Basic education in Kuwait is free and compulsory for Kuwaiti citizens between the ages of 6 and 14. It is entirely free and also includes school meals, books, transportation, and medical attention (Al-Sharija, 2012). Education in Kuwait comprises three basic levels, elementary, intermediate and secondary school, with duration of five, four and three academic years respectively. Schooling begins at the age of six; however, a kindergarten level is also provided to Kuwaiti children from age four to six. The completion of basic education allows students to pursue higher education. Although the literacy rate of Kuwait was 94% in 2011, Kuwaiti citizens

have different level of qualifications, with less than 15% of the citizens possessing bachelor degrees and above as shown in Figure 1.5 (PACI, 2013a).

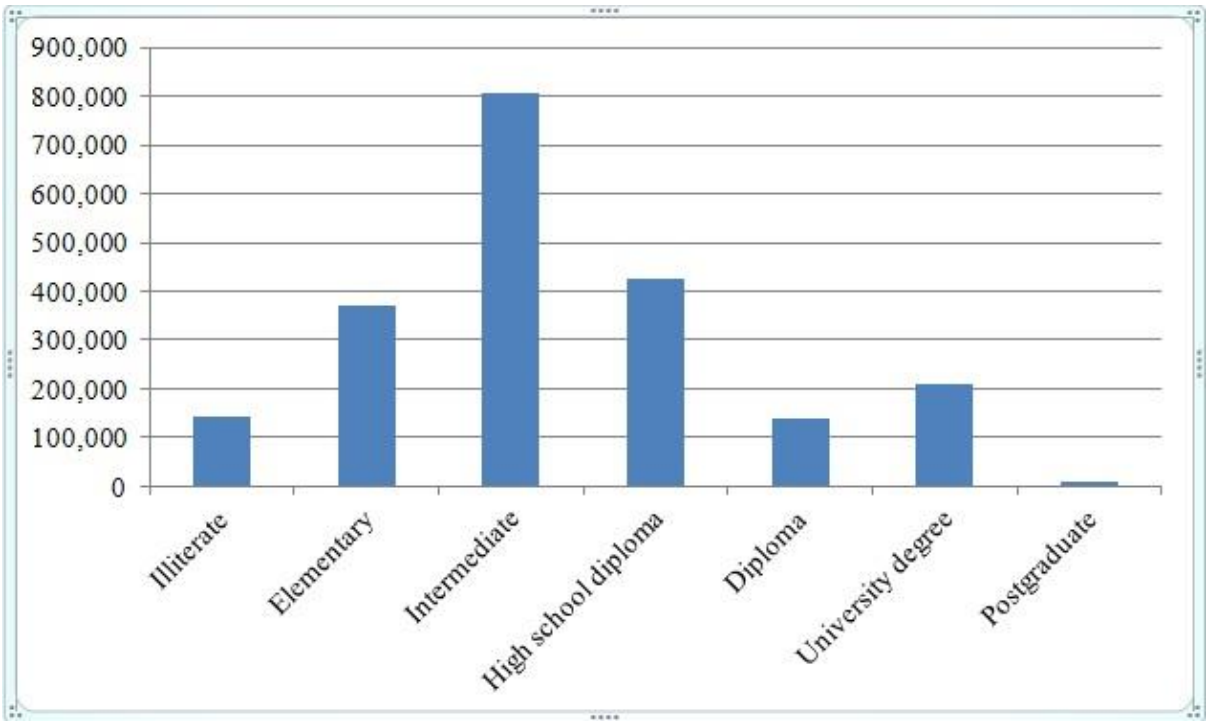


Figure 1.5: Education Level of Kuwait Citizens

Higher education in Kuwait covers university and vocational education. There are two public institutions: Kuwait University (KU) and the Public Authority for Applied Education and Training (PAAET). In addition, there are a number of private universities and colleges (Kuwait Information Office 2005). At the university level, Bachelor degrees normally last for four years. Master degrees are also offered in some programs, and take one to two years to complete after the bachelor degree. The duration of Doctoral degrees is at least three years. The vocational education takes place in technical institutes and training centres under the supervision of PAAET. Furthermore, several thousand students attend colleges and universities overseas, principally in the United States, United Kingdom, and Egypt, usually on governmental scholarships.

Kuwait University (KU)

Kuwait University, the only state university of Kuwait, was established in October 1966 to facilitate the pursuit of advanced scholastic studies, leading to the award of

Bachelor, Master and Doctoral degrees. Kuwait University consists of 13 colleges: Arts, Business Administration, Education, Engineering, Law, Medicine, Dentistry, Pharmacy, Allied Health, Sharia, Science, Social Sciences, and Women's College, in addition to the College of Graduate Studies. These colleges offer a wide range of programs in the sciences and humanities at undergraduate, graduate and doctoral levels. The internationally distinguished and culturally diverse community of professors and academics provides teaching, research and scholarship at the highest level (Al-Ansari, 2006).

Public Authority for Applied Education and Training (PAAET)

PAAET was established on December 1982 with the aim of providing and developing the national manpower in order to overcome deficits in national technical manpower and to meet development requirements of the country. It also aims to cooperate with major institutions in the labor market, training drop-outs, linking academic programs to society's needs through cooperation with institutions in public and private sectors. PAAET manages its own independent budget, and it is the sole body in charge of all applied education and training affairs in Kuwait. Colleges and institutions under PAAET offer two-year programs leading to the award of a diploma, and four-year programs leading to the award of bachelor degrees (Al-Hajri, 2002).

1.4 Significance and Research Aim and Objectives

The literature of e-learning is still immature, and many issues yet need to be investigated and studied. Above all, little has been published about the adoption of e-learning in developing countries (Ali and Magalhaes, 2008). Furthermore, AlShihi (2005) pointed out that in the Arab world little attention has been made to the adoption of e-services. Although some studies on e-learning have been carried out in Kuwait, they are only personal attempts to use technology in teaching and training (Al-Fadhli, 2011). There are no comprehensive studies about the adoption of e-learning or the important factors that would influence the adoption of e-learning in developing countries in general and in Kuwait in specific. The lack of useful empirical studies and research about the adoption of e-learning has resulted in little understanding of user acceptance and adoption of this technology. Hence, further

research and empirical studies on the acceptance and adoption of e-learning are required to help managements and decision makers in educational organizations to improve the quality and efficiency of learning.

Accordingly, this research studies the adoption of e-learning, focusing on the important factors that would influence the acceptance and adoption of such technology from the perspective of technology acceptance. Kuwait was chosen as an empirical case study, representing an example of a developing country. Therefore, the aim of this research is *to investigate and find the main and important factors that would influence the acceptance and adoption of e-learning in higher educational organizations in Kuwait.*

To realize the aim of this research, a conceptual model should be proposed and developed. The proposed model would be a frame of reference for educational organizations which try to use and adopt e-learning. This proposed model would also add to the field of e-learning adoption by providing a better understanding amongst government and educational organizations to the concept of e-learning.

According to the aforementioned research aim, the research objectives therefore are:

- Review the literature of e-learning and technology acceptance and adoption comprehensively and critically.
- Identify the important factors that would influence the adoption of e-learning in general, and in higher educational organizations in Kuwait in specific.
- Evaluate the state of e-learning in Kuwait's higher educational organizations.
- Develop a conceptual model and propose research hypotheses to identify the important factors and explain their relationships in influencing the adoption of e-learning.
- Examine and validate the conceptual model and research hypotheses empirically in higher educational organizations in Kuwait.
- Revise the proposed conceptual model and discuss the theoretical and practical implications of the research outcomes.

This research therefore provides some important contributions to the field of e-learning. First of all, this study provides new knowledge and adds to the literature in the context of e-learning adoption in an Arabic developing country, namely Kuwait.

Furthermore, this study explores and identifies the main issues and influential factors and their impact on the acceptance and adoption of e-learning. In addition, this study proposes a conceptual model based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model, and amended it with external factors related to cultural and social background to suit the context of the study. Moreover, this study tested the UTAUT model in the context of e-learning in a developing country environment.

1.5 Thesis Outline

This PhD thesis consists of seven chapters; each of them addresses a critical issue of the research. Figure 1.6 illustrates the structure of the thesis and outline the thesis chapters, followed by a brief description for each chapter.

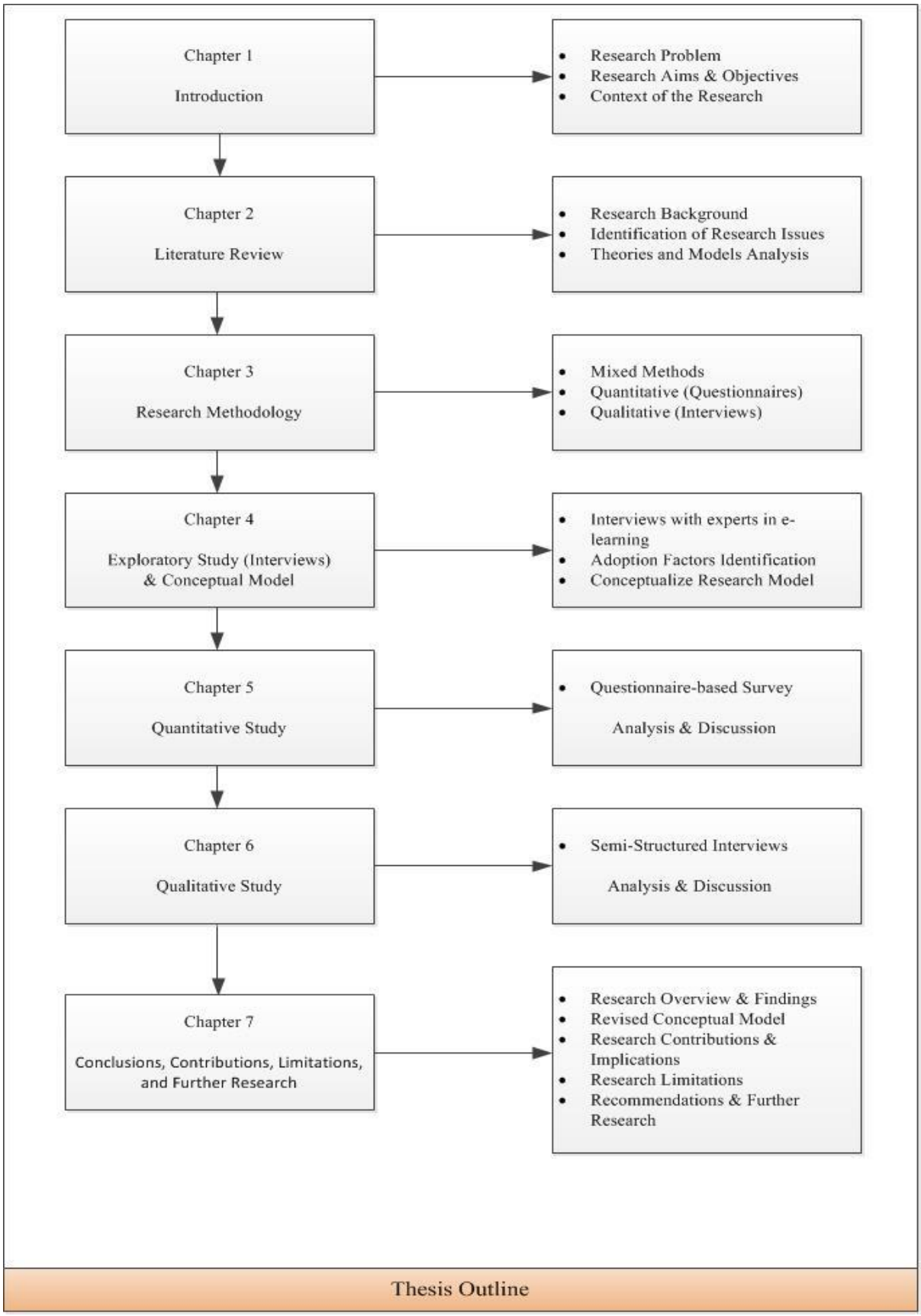


Figure 1.6: Research Thesis Outline

- **Chapter 1: Introduction to the Research Area**

  Chapter 1 has provided an introduction to the main issues this research will address, focusing on the main factors that would influence the adoption of e-learning in the context of Kuwait. It has given a brief introduction to the research area and problem. The aim and the objectives of the research have been detailed. Also, this chapter presented the context of the study, followed by an explanation of the significance of the research. Finally, the thesis structure will be outlined along with a brief description of each chapter.

- **Chapter 2: Literature Review – Critical Analysis of the Research Area**

  Chapter 2 will be based on reviewing and examining the existing literature and studies on e-learning, highlighting the research problem and identifying the main factors that would influence the adoption of e-learning in general and in Kuwait in specific. This chapter will introduce the research area and different definitions of e-learning will be acknowledged. Further, a brief history of e-learning will be presented, and the main benefits and drawbacks of e-learning will be explored. Thereafter, a detailed discussion on the barriers of e-learning adoption will be conducted, identifying the influential factors that would mostly hinder the adoption of e-learning in general and in Kuwait specifically. Also, the main barriers of e-learning adoption in Kuwait will be compared with those found in developed countries, exploring and distinguishing the priorities of different societies. Finally, a presentation of the main models and theories that have been developed and adopted when estimating and describing the implementation, acceptance, and adoption of new technologies or products by individuals will be given.

- **Chapter 3: Research Methodology**

  Chapter 2 sets the background for this research and identifies the research issues. To undertake the research that focuses on these issues, an appropriate and comprehensive research methodology has to be followed. An explanation of the overall research design process and justification of the chosen research methods are offered in this chapter. It starts by describing and discussing the different

philosophical approaches and strategies in the field of Information Systems, justifying the chosen methods. Then, the chapter discusses the data collection methods and protocols used in the different studies that were conducted in this research. Thereafter, the data analysis methods used in this research were explained and discussed. The chapter then concludes by explaining the ethical considerations that were followed when conducting this research.

- **Chapter 4: Research Conceptual Model – e-Learning Adoption**

  This chapter analyses and discusses the key challenges found in the literature which might influence e-learning adoption, and assigns them into constructs or themes. In addition, it proposes an initial conceptual model for e-learning based on critical analysis to the theories and models of technology acceptance and the outcomes of an exploratory study that was carried out in Kuwait. Therefore, this chapter is divided into two sections. The first section presents the exploratory study carried out to investigate the state of e-learning in Kuwait, and to discuss the important factors that influence e-learning adoption. The second section then analyses the technology adoption and acceptance factors that might explain the users' behaviour towards e-learning adoption using the UTAUT model. Finally, the conceptual model discussed in this chapter will form the basis for the empirical research discussed later in Chapters 5 and 6.

- **Chapter 5: Quantitative Research Analysis**

  This chapter analyzes and discusses the quantitative study findings with regard to the initial conceptual model proposed in Chapter 4 in light of e-learning adoption from the perspective of higher educational organizations in Kuwait. The quantitative study was conducted through a questionnaire-based survey to investigate the factors that influence the adoption of e-learning in the context of Kuwait. The chapter provides a descriptive statistics of the data collected from the questionnaires that were distributed to participants in higher educational institutions in Kuwait. Also, it will assess the adequacy of the model through measurement model analysis and structural model analysis by using the structural equation modelling. Thereafter, the chapter discusses the implications of the

survey's findings, and summarizes the main results and findings of this analysis. Finally, the chapter will conclude by testing the proposed hypotheses and revising the conceptual model based on the survey outcomes.

- **Chapter 6: Qualitative Research Analysis**

  This chapter analyzes and discusses the qualitative study findings with regard to the initial conceptual model proposed in Chapter 4 and the survey outcomes. The qualitative study was conducted through semi-structured interviews to search for more details and investigates in more depth the factors that influence the adoption of e-learning in the context of Kuwait. The qualitative analysis was used to confirm the previous findings of this research, and also to give explanations to the unexpected findings. The chapter will explore and study further the relationships between the conceptual model's constructs by using thematic analysis methods explained in Chapter 3. The chapter starts with identifying and explaining the themes developed. Then, the interviews will be analyzed based on the themes developed. Subsequently, the findings from the interviews will be discussed, and the important and influential factors of the adoption of e-learning identified. This chapter will conclude by presenting a final revised conceptual model based on all the findings of this research.

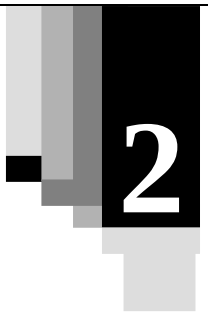
- **Chapter 7: Conclusions and Further Research**

  This chapter synthesizes the empirical findings with the literature and revises the proposed conceptual model based on the factors found to most influence e-learning adoption in the context of Kuwait. Also, it will consider factors that were emerged in this research and were not included in the original conceptual model. Finally, this chapter will summarize and draw conclusions based on the final results of the study, its implications for research and practice, its limitations, and gives recommendations for future research.

1.6 Summary

This research argues that there is a lack of prior research and studies that study e-learning adoption in developing countries, and apply theoretical models in the context

of e-learning adoption. With the aim of understanding and improving the adoption of e-learning, this research will propose a conceptual model that is based on the well-established UTAUT model and is influenced by an exploratory study that was conducted at the beginning of this research. To this end, this chapter provided an introduction to the subject of the research, and presented the context of the research. Further, it presented the research aim, objectives, and significance. The next chapter reviews the literature from which this research is built on.



2 Chapter 2: Literature Review - Critical Analysis of the Research Area

2.1 Overview

E-learning has emerged as a necessity to meet the challenges posed by the development of information technology and its potential for greater access to knowledge. The significant impact of communication and information technology on learning is still being explored, and constantly seeking new approaches to capture the attention of learners, and create active, yet customized, learning environments, where learners are motivated and have the desire for continuous learning using different tools of information technology (Bottino, 2004).

E-learning as an organizational activity started in the developed countries, and as such, the implementation models developed in the developed countries are taken as a benchmark. The implementation barriers and the influential factors for adopting e-learning in different regions and societies may or may not be the same as those found in the developed countries (with varying degrees of intensity or importance). Hence, those available implementation models may not necessary be followed in all stages and steps when used by different countries and societies. Accordingly, the implementation barriers and the influential factor of e-learning adoption may differ from one case to another.

E-learning technology is becoming more visible in educational organizations in many parts of the world. Like many other countries, Kuwait has started to study the adoption of e-learning in the public educational organizations (Aldhafeeri et al., 2006). Despite the high standards of living, Kuwait is falling behind other countries because of its relatively poor innovation and productivity capabilities (Ali and Magalhaes, 2008). Thus, it is important that the government and organizations continually work on updating and upgrading their participants' (employees, students, customers, etc) skills, and provide continuous and improved learning and training, areas in which undoubtedly e-learning has a major role to play.

This chapter will review and examine the existing literature and studies on e-learning, highlighting the research problem and identifying the main factors that would influence the adoption of e-learning in general and in Kuwait in specific. Accordingly, this chapter will introduce the research area and different definitions of e-learning will be acknowledged. Further, a brief history of e-learning will be presented, and the main benefits and drawbacks of e-learning will be explored. Thereafter, a detailed discussion on the barriers of e-learning adoption will be conducted, identifying the influential factors that would mostly hinder the adoption of

e-learning in general and in Kuwait specifically. Also, the main barriers of e-learning adoption in Kuwait will be compared with those found in developed countries, exploring and distinguishing the priorities of different societies. Finally, a presentation of the main models and theories that have been developed and adopted when estimating and describing the implementation, acceptance, and adoption of new technologies or products by individuals will be given.

2.2 Introduction to e-Learning

Since e-learning is relatively new in Kuwait (where this research will be conducted), it is necessary to explain what is e-learning. The term e-learning should be fully explained in order to provide an understanding of how e-learning started and developed. It is also important to identify the elements and the influential factors that can help in the adoption of e-learning, taking into consideration the fact that those elements and factors may vary in different regions and societies.

2.2.1 Definition of e-Learning

The term e-Learning refers to electronic learning, which was initially claimed to have been coined by Cross in 1998 (Dublin and Cross, 2002); however it seems to have already been published by Mori in 1997 (Clark, 2001). Several notable definitions of e-learning describe the utilization of ICT within educational and training programmes.

The term e-Learning was defined comprehensively by the NCSA e-Learning group as (Adeoye and Wentling, 2007):

> *"The acquisition and use of knowledge distributed and facilitated primarily by electronic means. This form of learning currently depends on networks and computers but will likely evolve into systems consisting of a variety of channels (e.g., wireless, satellite), and technologies (e.g., cellular phones, PDAs) as they are developed and adopted. E-learning can take the form of courses as well as modules and smaller learning objects. E-learning may incorporate synchronous or asynchronous access and may be distributed geographically with varied limits of time."*

Alternative definition is that of the American Society for Training and Development (ASTD) defined e-learning in 1998 as a broad set of applications and processes which include web-based learning, computer-based learning, virtual classrooms, and digital collaboration. Much of this is delivered via the Internet, intranet (LAN/WAN), audio and video tapes, satellite broadcast, interactive TV, and CD-ROM (Bernthal, 2004). Also, e-learning was defined by Koohang and Harman (2005) as:

> *"the delivery of education (all activities relevant to instructing, teaching, and learning) through various electronic media. The electronic medium could be the Internet, intranets, extranets, satellite TV, video/audio tape, and/or CD ROM."*

According to the World Bank (Badiee, 2009), e-learning refers to the use of computer-based electronic technologies of Internet, e-mail, websites and CD-ROMs, and their applications, to deliver, facilitate and enhance both formal and informal learning and knowledge sharing at any time, any place and at any pace.

Hence, e-learning is the fashionable term used to describe the diverse use of information and technologies to support and enhance learning, teaching and assessment. The nature of e-learning is to make learning an accessible, customized, and continuous process regardless of time and place. Therefore, since e-learning is respectively a new phenomenon in Kuwait and most of the people are not familiar with this terminology; this research will adopt the detailed definition of e-learning described above by the NCSA e-Learning group.

2.2.2 History of e-Learning

In the history of e-learning, there is no standard definition of e-learning and there is no approved theory of the evolution of e-learning. Since the 1960s, educators and trainers at all levels of education, business, training and military made use of technology and computers in different ways to support and enhance teaching and learning (Nicholson, 2007). For the past 40 years, e-learning has evolved in quite different ways in different sectors. In the school sector, e-leaning refers to the use of both software-based and online learning, whereas in Business, Higher Education, Military and Training sectors, it refers mainly to internet-based flexible delivery of content and programs that focus on sustaining particular communities of practice (Campbell, 2004).

The insightful work of Patrick Suppes at Stanford and Don Bitzer at the University of Illinois was the foundations of the current practiced e-learning in business and higher education, while others like Porter and Uttal also contributed in this area (Association, 2010; Fletcher, 2002). In 1966, Suppes argued that:

> *"In the future it would be possible for all students to have access to the service of a personal tutor in the same way that ancient royals were once served by individual tutors, but this time the tutors would be in the form of a computer."* (Suppes, 1966)

In the early 1960s, Don Bitzer at the University of Illinois created a timeshared computer system called Programmed Logic for Automatic Teaching Operations (PLATO) that was concerned with literacy programs. PLATO allowed students and teachers to use graphics terminals and TUTOR, an educational programming language, to communicate and interact with other users by means of electronic notes, which is the forerunner of today's conferencing systems (Bitzer et al., 1962). Woolley (1994) argued that PLATO's communication features were innovative and were the base of today's conference and messaging systems. Although Suppes and Bitzer created technology mainly as a tool, their vision allowed them to use it in other directions and today's e-learning systems such as Blackboard and ANGEL are the successors of PLATO.

However, the emergence of e-learning in education and business, and its marketing has led to concerns about the influence of quality assurance driven models on structure and quality of these programs (McGorry, 2003). Other concerns target the ability to deliver pedagogically structured learning experiences, or to have a clear learning paradigm have also been raised (Gillham, 2002).

In spite of these concerns, over the past several years, online enrolments have been growing substantially fast (Allen and Seaman, 2011). Nearly 5.8 million students were taking at least one online course during the fall 2009 term, a substantial increase over the 4.3 million reported the previous year at institutions of higher education in the United States (Figure 2.1 & Figure 2.2).

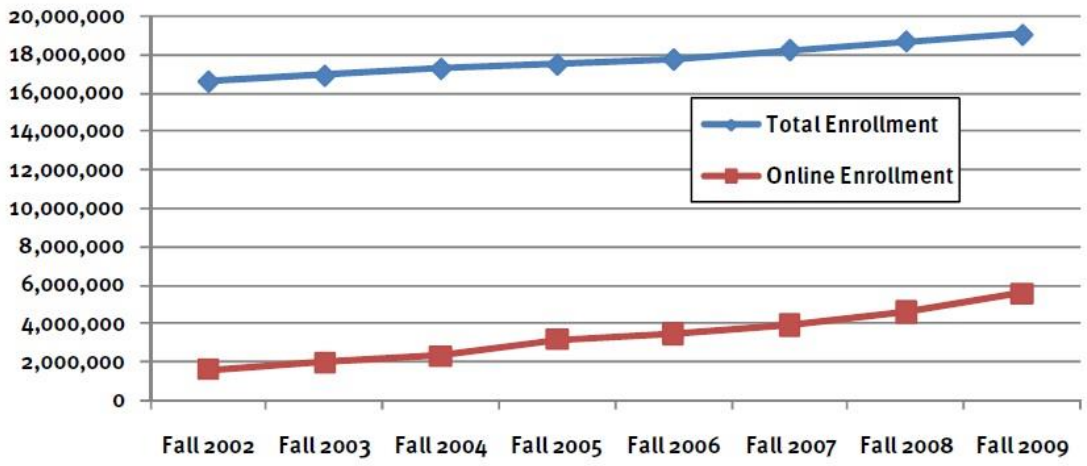


Figure 2.1: Total and Online Enrollment (Allen & Seaman, 2011)

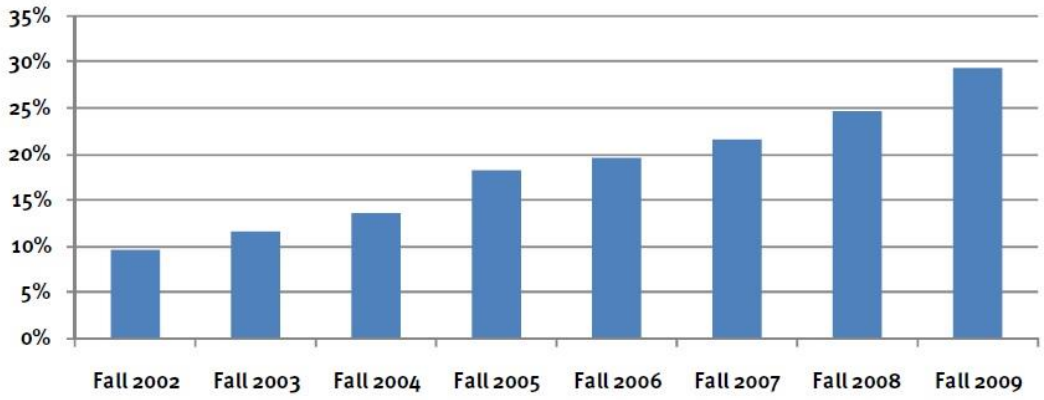


Figure 2.2: Online Enrollment as a Percent of Total Enrollment (Allen & Seaman, 2011)

Nowadays, e-learning is evolving with the World Wide Web as a whole and it's changing to a degree significant enough to warrant a new name, specifically e-learning 2.0. The term e-Learning 2.0 is used to refer to new ways of thinking about e-learning inspired by the emergence of Web 2.0. From an e-Learning 2.0 perspective, conventional e-learning systems were based on content delivered to students using Internet technologies. The role of the student was to learn from the readings and prepare assignments and course works, which were later evaluated by the teacher. In contrast, the new e-learning concentrates on social learning and use of social software such as blogs, wikis, podcasts and virtual worlds. This phenomenon has also been referred to as Long Tail Learning, and has witnessed increasing numbers of followers (Brown and Adler, 2008).

2.2.3 Benefits of e-Learning

The vast movement towards e-learning is clearly motivated by the many benefits it offers. However much e-learning is praised and innovated, computers will never completely eliminate human instructors and other forms of educational delivery. What is important is to know exactly what e-learning advantages exist. Some of the most outstanding advantages are now detailed.

2.2.3.1 Reduced Overall Cost and Time

Saving overall cost and time is the most influential factor in adopting e-learning. The elimination of costs associated with instructors' salaries, meeting room rentals, travel, lodging, and meals are directly quantifiable. The reduction of time spent away from the job by employees may be the most positive offshoot. Cisco Systems makes between 40-60 per cent cost savings using e-learning when compared with instructor-led training, and that more than 80 per cent of Cisco's technical employees currently participate in online training, with 100 per cent of the sales force being directed to online learning, saving time which is then spent directly with customers (Gill, 2000). There are also time savings to be gained from travel to a classroom.

2.2.3.2 Convenience and Flexibility

Convenience and flexibility are other benefits. Users are not bound by time; the course is available 24/7 and does not require physical attendance as long as the necessary equipment is accessible. Users are not bound by place, they can learn at home, work, or on the road. Learning is self-paced for slow or quick learners; this in turn reduces stress and increases satisfaction. It is self-directed, allowing users to choose content and tools appropriate to their differing interests, needs, and skill levels. Thus, users can use the tools best suited to their learning style and focus on material they would like (Hall, 1997).

2.2.3.3 Accessibility and Higher Retention

Access to quality education and higher retention is an important benefit. The fact that instructors of the highest calibre can share their knowledge across borders allows learners to attend courses across physical, political, and social boundaries. Recognized experts have the opportunity of distributing information internationally at

minimum costs. E-learning will draw users to topics and courses they like and enjoy, and act as a proof of completion and certification. Studies show that because of this and the variety of delivery methods used to reach different types of learners, retention is frequently better than in a traditional classroom (Millbank, 1994).

2.2.3.4 The Reduced Learning Time

Studies have found e-learning reduces learning time compared to those of instructor-led learning. Hall (1997) stated that:

> *"There is very strong evidence that computer-based training requires less time for training compared to instructor-led training. The amount of reduction ranges from 20-80%, with 40-60% being the most common."*

Another study carried out by Office Depot, in which a virtual classroom was used to simultaneously train students in Florida, California, and Texas, led to an increase in enrolment by a factor of three, while increasing student satisfaction by 30% and knowledge retention by 25%. Simultaneously costs also decreased by 80% (Horton, 2011).

2.2.3.5 Greater Collaboration and Interactivity

Greater collaboration and interactivity are yet other benefits of e-learning. Technology tools make collaboration among users much easier. Since many projects involve collaborative learning, the online environment is far easier (and often more comfortable) to work in since learners don't have to be face-to-face. E-learning also engages users and makes them active in the learning process, pushing them rather than pulling them through training (Kruse, 2002).

2.2.3.6 Environment Impact Reduction

Some would argue that the e-learning will reduce the environmental impact. E-Learning allows people to avoid travel, thus reducing the energy consumption and overall carbon output. The fact that it takes place in a virtual environment also allows some reduction of paper usage. With virtual notes instead of paper notes and online assessments instead of paper assessments, eLearning is a more environmentally friendly solution. A recent study by Britain's Open University (Roy et al., 2008) found that producing and providing distance learning courses consumes an average of

90% less energy and produces 85% fewer CO2 emissions per student than conventional face-to-face courses.

2.2.4 Drawbacks of e-Learning

While the potential advantages of e-learning make it appealing, organizations embarking on e-learning implementations must keep two things in mind: there are a number of potential drawbacks to using e-learning and successful implementation requires significant planning and effort. Up-front cost was the most frequently mentioned drawback of e-learning. E-learning initiatives can require considerable investment in both information technology and staff. Specific costs include development costs to design and build the actual courses as well as hardware and software costs to allow users to access those courses (Welsh et al., 2003).

Moreover, since users are not bound by time, the course is available 24/7 and does not require physical attendance which could reduce the social and cultural interaction. The learners may also feel isolated and unsupported while learning since the instructors and instructions are not always available. They may become bored with no interaction (Keller, 2006).

The technology issues required for e-learning could become a problem for the learning process since learners need to have access to resources such as computers, internet, and software. They also need to have computer skills with programs such as word processing, Internet browsers, and e-mail (Collins et al., 2003). The advance of communication technologies and software will lessen, if not solve, most of these disadvantages, and it is undisputable that e-learning is rapidly growing as form of learning delivery. Indeed most are finding that the clear benefits and advantages to e-learning will guarantee it a role in the overall learning process (Pongpech, 2013).

2.3 Barriers to e-Learning Adoption

Reviewing the literature on e-learning practices shows common agreement on the importance of information and communication technology (ICT) in today's learning environment (Lytras et al., 2002). Most organizations have understood that e-learning has to be integrated as part of daily tasks of students and employees (academics and managers), not to be seen as a separate tool or technique for learning and training.

Therefore, e-learning has become a strategic advantage that participates in the realization of the organizational strategic plan (Magalhães, 2004).

Figure 2.3 shows the model of e-learning development found in developed countries, where the barriers to e-learning adoption can be found between the decision to implement e-learning and the impacts on the organization (Ali and Magalhaes, 2008).

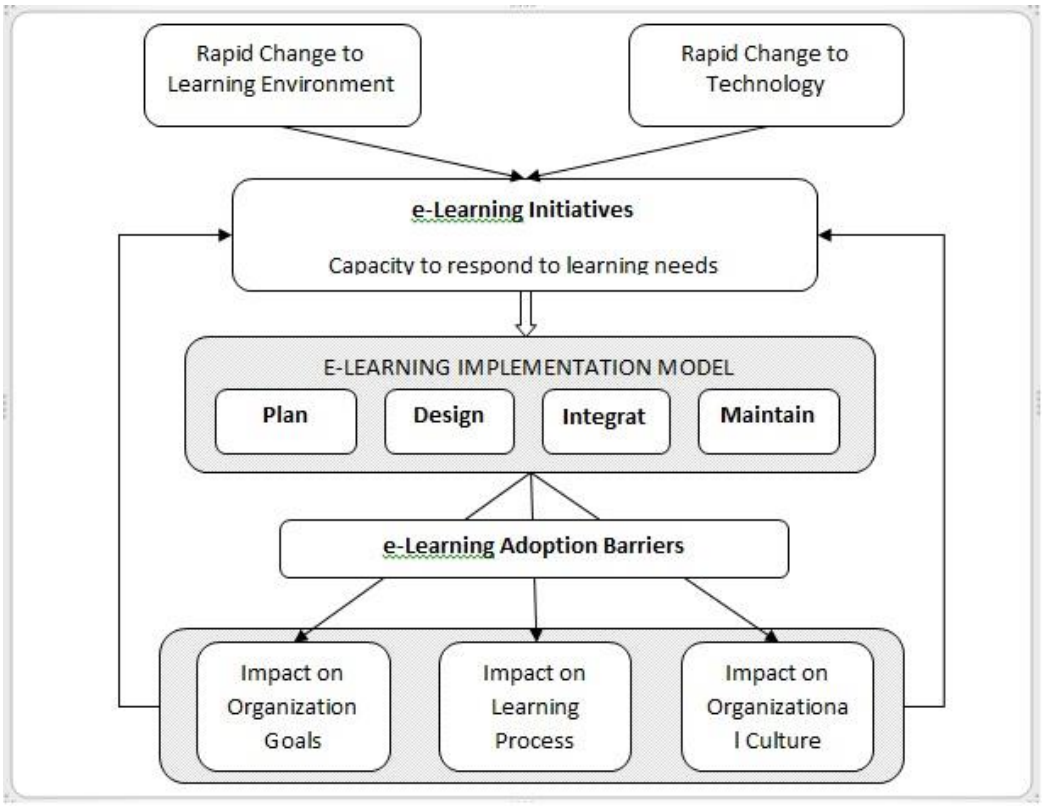


Figure 2.3: Development Model of E-Learning

E-learning initiatives come about as a result of environmental trends which are made up of the same factors that are the cause and the consequence of the revolutionized technology, i.e. rapid change of technology and rapid change to learning environment. The outcome of these trends has been an increasing amount of pressure on educational organizations to use IT to improve their capacity to respond to learning needs. From this pressure, the decision to implement e-learning emerges.

The e-learning implementation model follows the usual implementation model of any type of information system, and it is made up of four stages: planning, designing, integrating, and improving (Alter, 2001). The 'integration' stage marks the occasion when the system is put to work in the organization (i.e. the organizational implementation). The last stage of 'improvement' can only be carried out after the

impacts on the organization have been evaluated, i.e. the impact on organization goals, the impact on learning process, and the impact on organizational culture.

Technology critics consistently argue for balanced review of any technology, but the threats, challenges, and losses brought by technology are typically less discussed. While focusing on barriers might be construed negatively, it is not intended to dissuade organizations or individuals from using learning technologies. Rather, the purpose is to raise the awareness of the nature of obstacles being faced by e-learners. Such examination is critical considering the promises, expectations, heavy investments, and exponential growth associated with e-learning. According to the researches and studies, the barriers to the implementation and adoption of e-learning can be related to personal issues, technical issues, or organizational issues (Bernárdez, 2003).

2.3.1 Personal Barriers

As for the personal barriers, the most commonly cited are time management problems where finding time for learning is interrupted by outside distractions, language problems since materials are not always made available in the local language, attitude towards e-learning, and learning styles or preferences where learners might prefer passive or active learning (Mungania, 2003).

2.3.2 Technical Barriers

Technical barriers include infrastructure building and upgrading, maintaining connectivity and bandwidth since lengthy downloading for course materials may lead to loss of interest in the course, and accessibility and usability where limited access to the course materials and learning websites will affect the learning process. Technical barriers also embrace the lack of technical support, where learners sometimes find it difficult to register for online courses or how to master a new set of skills (use of online tools, communicate effectively) and deal with specific procedures such as passwords and permissions (Baldwin-Evans, 2004; Mungania, 2003).

2.3.3 Organizational Barriers

Organizational barriers include lack of e-learning awareness, where the potential benefits to be achieved from creating an e-learning culture are not publicized, and lack of management support and commitment, where people in charge are not aligned

with the intention to build an e-learning culture. Commonly cited are also lack of strategic planning and direction, especially when there is no alignment with the objectives, lack of time available for learning and training, where organizations do not train their staff on how to use e-learning or how to instruct e-learning courses, and lack of appropriate content and assessments where these might be poor, unclear, or irrelevant. Last but not least, lack of incentives and credibility, where there are cultural problems concerning the credibility of e-learning, is also a potent organizational barrier (Al-Shehry et al., 2006; Mungania, 2003).

2.4 Influential Factors to e-Learning Adoption

After summarizing the literature and highlighting the main barriers, key factors and problem areas were divided into four main categories. These are cost-related category, time-related category, technology-related category, and attitude-related category.

2.4.1 Cost

Cost is frequently mentioned one of the most significant barriers to e-learning implementation and adoption. Technology is important in e-learning, and it is also unpredictable and expensive which makes the initial costs of implementation and continuous costs of maintenance excessive (Murray, 2001; Simmons, 2003). Although the cost of developing an e-learning system may not be accurate the first time, particularly if the system is new or complex, it still should be carried out to give the developing team a goal to aim for. The cost of the project can be revised when more information has been acquired. Nevertheless, this is what the development plan is all about, carrying out evaluations throughout the different stages and then using the reviews and feedbacks to adjust the project for the desired targets.

Researchers such as Eyob (2004) and Al-Fadhli (2011) argue that the importance of funding technology projects cannot be over-accentuated. Funding facilitates the infrastructure (such as building, technology, human resources) that is needed to implement e-learning and helps attain the associated targets and milestones in terms of e-learning implementation and adoption. Moreover, Gottipati (2002) argues that the way technology projects are being reviewed and funded in the Arabian gulf is that such projects appear to seen as budget-based instead of seeing those projects as project-based budgets. Also, as mentioned previously, e-learning initiatives are long

term projects, and therefore, they need long term financial support from the government and organizations. Furthermore, Eyob (2004) states that it is a major challenge, especially when the funding has to come from a governmental organization where political influence may interfere with decisions taken by high level officials.

2.4.2 Time

Time here refers primarily to the amount of time required to develop and maintain e-learning systems. It also refers to the amount of time that learners are able to make available for e-learning. In traditional learning, all the materials are put into outlined form and the instructor will fill in a lot of the gaps, such as leading or integrating the learning processes. On the other hand, with e-learning all the materials and procedures are set up and the system will perform the learning processes by itself. Hence, e-learning has usually been a lot more costly up front and it takes more time to develop. In general, it takes at least four times as long to develop e-learning materials, than it does with classroom learning (Kruse, 2002). Obviously this depends on other factors such as the tools have been used, learning methods, and the types of content have been used.

Regarding the available time for e-learning, important factors are the outside interruptions and distractions and maintaining the appropriate concentration for e-learning. Users either do not have sufficient time to dedicate to e-learning with all the inconveniences and disruptions, or there is insufficient time by the organizations to implement and maintain e-learning. Some users find it hard to focus in their residence with the familial interruptions. The setting of e-learning, either at work or at home, seems not enough to reduce the intensity of the time factor as a key barrier for most users. The time factor is a significant barrier to e-learning. In fact, it occupies an important rank among the top three barriers to implementing e-learning in organizations (Baldwin-Evans, 2004; Simmons, 2003).

2.4.3 Technology

Technology is critical in implementing and adopting e-learning. It requires adjustments from both sides; the users and the organization. For organizations to effectively implement e-learning, they need to ensure that they have the appropriate capacity to run e-learning systems and that serious consideration is given to hardware compatibilities and capabilities. Inadequate software, limited bandwidth and

connectivity, and system breakdowns are some other problems. Horton (2011) claims that many e-learning courses are dead on arrival due to an inability to install the right software, establish connectivity, or maintain security. System security and privacy can limit the adoption of e-learning if not managed properly within the organization (Al-Sebie and Irani, 2005; Gil-García and Pardo, 2005; Reddick, 2004). This can be achieved by using protection methods such as security software and hardware.

Technology standards are an essential requirement for the realization of e-learning (Weerakkody et al., 2011). Nyrhinen (2006) argues that "IT standards 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". Technical support is also a significant issue, especially in cases where the suppliers do not provide this service. In such scenario, the organizations may get reluctant to use e-learning (Baldwin-Evans, 2004; UFI/Learndirect, 2004). The organization technical department should make sure that the users have the ability and skills to use the new system by providing training and help when needed (Al-Sebie et al., 2005; Altameem et al., 2006). If the organization technical department employees are unable to carry out any of the system initiatives, then the technical department are required to solve this problem with the help of an external agent (Chen and Perry, 2003).

2.4.4 Attitude

One's attitude towards e-learning is fundamental for accepting and adopting this technology. To realize the promises of e-learning, employees need to embrace it and managers need to support it. Layne and Lee (2001) argue that, as any new system become more established in an organization, the organisational structure may consequently be changed in two ways, internally and externally. These changes may possibly face some challenges like resistance to change, the employees become distrustful and suspicious about the threat to their positions by using and adopting these new technologies (Irani and Love, 2013). Moreover, the use of new system such as e-learning may cause employee resistance, since they will lose their power and authority over traditional job tasks (Doherty and King, 2005). Accordingly, those employees, who lost their authority and power, will try to resist the e-learning system as it is seen as a threat to their position, power and skills (Doherty, 2014; Heeks, 2002).

Indeed, resistance to change towards using technology is emerging as one of the most visible barriers in e-learning success. Even if it was well aligned with the objectives of the organization or well designed with the job specifications, e-learning systems are expected to fail if the users resist them. This depends on how these new systems and solutions are implemented in the organizational culture. If employees feel that e-learning creates more problems than benefits or if they simply do not know how to use it or cannot apply it to their own tasks and projects, they will not feel comfortable using what they disapprove of and will resist it. The key therefore to resolve the resistance is to progressively create an organizational culture of e-learning (Simmons, 2003; UFI/Learndirect, 2004). Table 2.1 summarizes the most influential factors to the adoption of e-learning.

Table 2-1: Key barriers to e-learning adoption in Developed Countries

Author / Barrier	**Baldwin-Evans (2004)**	**Murray (2001)**	**Simmons (2003)**	**UFI/Learndirect (2004)**
Cost		Cost was ranked first when starting and implementing e-learning	Cost was second on the list of the barriers to e-learning	27% of participants identified cost as one of the strongest barrier
Time	50% of participants said lack of time was the greatest barrier	Lack of time came second to cost as main challenges to e-learning	144 US companies ranked lack of time as number one barrier to e-learning	Time available for training & learning was perceived as the third most important barrier
Technology	47% of participants mentioned technology anxiety			46% of participants listed technological barriers in second place
Attitude			Resistance to using technology was identified as the unforeseen barrier to e-learning	69% of participants believed that the main challenge was overcoming users' objections

2.5 e-Learning in Developing Countries

Most of the developing countries in general have been a late follower when it comes to the adoption of e-learning. This can be greatly attributed to the delay in the adoption of the Internet as a whole by most governments of the developing countries. As a result, little research with regard to the benefits, limitations, barriers, and acceptability of e-learning has been published. Generally, however, most of the

published research seems to indicate a high approval level by both faculty and students. We look in this section at a few research efforts that highlight the value of e-learning in some developing countries.

Tubaishat (2008) of Zayed University, an all-girl university in the UAE, conducted a study regarding e-learning's impact on social and cultural limitations of higher education. He pointed out the fact that in the ME region social values and expectations with regard to males and females are different. Female students at Zayed University are not allowed to be present on campus after working hours of the day nor on weekend days. Utilization of learning management systems (LMS) makes it possible for students to interact with faculty members at any period of the day or night. When confronted with a male faculty member, female students may also feel a little shy when participating in in-class discussions. His results revealed that the 74.2% of the students were more comfortable in posting their opinions on discussion boards as opposed to having to speak-up in the classroom. 71.2% felt that they had become more confident in expressing their ideas. Additionally 85.6% of the students were satisfied with the online class environment.

Abdeen et al. (2008) describes the great advantage attained through e-learning in overcoming the difficult situations created by political problems and physical wall barriers constructed by the Israeli occupying forces in the West Bank, Palestine. As a result of the inability to move about between university campuses and hospitals, students and faculty of Al Quds University were forced to resort to videoconferencing, telemedicine, and e-learning in fulfilling parts of their educational requirements. Three campuses and seven hospitals were connected to enable a blended form of education. Online technology has been utilized to deliver courses in basic medical sciences and clinical training. Even though they were able to overcome the ban on free movement between centres of education, the author still complains of low speed Internet access and difficulties to overcome technical problems for lack of qualified technical expertise.

Abbad et al. (2009) investigated the major factors affecting the students' adoption of e-learning in Arab Open University in Jordan. They investigated the IT adoption as source of e-learning adoption. In their study they developed an extended version of Technology Adoption Model to investigate the factors influencing the students to use e-learning. The results show that prior and extensive use of the internet was one of the major factors. The students who were more confident that they are able to use e-

learning on their own, are more likely to become good users of e-learning. The availability of technical support and the ease of use are the other major factors.

Alkhalaf et al. (2012) conducted a research regarding the effect of supporting a traditional course with e-learning material on the performance of English course students in Saudi Arabia in comparison with students taking the same course through solely traditional means of course delivery. Results of the research revealed that students benefiting from the e-learning course material who were encouraged to participate online without any grades being rewarded or deducted for such participation, performed much better than the other students. Failure rate of students in the e-learning section was only 10% in contrast to a failure rate of 30% in the mainly traditional course.

Additional research that presented specific country research include: research on the attitude of students and people in general regarding e-learning (Al-Khashab, 2007) and the perceived relevance of online MBA programs on citizens of the Arabian Gulf countries (Anwar, 2008).

2.6 Adoption of e-Learning in Kuwait

The ever-growing use and adoption of information and communication technologies by the Kuwaiti government departments and organizations have helped in building an IT infrastructure capable of adopting new technologies such as e-commerce, e-government, and e-learning.

The term e-learning is relatively new in Kuwait, and only a limited number of local suppliers offer e-learning systems, currently implemented in the majority of petroleum and financial companies. However, an increasing number of organizations are responding to the challenge of e-learning and are moving to adopt it, yet are finding significant barriers to adoption hampering their efforts. There is a very limited number of studies on the implementation and adoption of e-learning in Kuwait and almost no research conducted on the barriers encountered by organizations and higher educational institutions using this relatively new learning method. It is worth noting that in Kuwait, the use of the technology is gradually increasing and Internet use specifically skyrocketed. According to the UN Broadband Commission (2013), the number of Internet users in 1990 was 0%, while in 2003 the number was 23% and in 2005 increased to 28%. This percentage increased to 79.2% in 2012.

However, statistics show that the size of the worldwide e-learning market is estimated to be 52.6 billion US dollars yearly, with the ratio at 65–75% for the United States and Europe. Statistics also indicate that 30% of the education was delivered electronically. In comparison the e-learning market in Arab countries with a size around 15 million US dollars yearly is very weak (de Argaez, 2011) . The gap between Europe and the United States and the Arab countries is therefore very large. Hence, while considering the international trends towards an information-based society and highlighting e-learning as a mean to enhance the learning and training of organizations, the statistics mentioned and the barriers that will be addressed should be taken in consideration.

As stated before, e-learning as an organizational activity started in the developed countries, and as such, the implementation models developed in the developed countries are taken as a benchmark. The factors and barriers that influence the adoption of e-learning in different regions and societies may or may not be the same as those found in the developed countries (with varying degrees of intensity or importance). Hence, those available implementation models may not necessary be followed in all stages and steps when used by different countries and societies. Accordingly, the implementation barriers and the influential factors may differ from one case to another.

Based on the available literature, the main barriers inhibiting the organizations in Kuwait from building an environment supportive of e-learning were the lack of management awareness and support, language barriers, and technology barriers (Al-Fadhli, 2011; Al-Kazemi and Ali, 2002; Ali and Magalhaes, 2008).

The management awareness and support towards e-learning projects will have a positive impact on their adoption and success since it connects e-learning with the organization plans. The role of strategic alignment plan is an important evidence of management awareness and support for any new technology (Broadbent, 2005; Hanna, 2010; Kearns, 2004). The participation of senior managers in developing an e-learning plan is important. This support can be achieved when the management is aware of e-learning strategic values. This awareness assists the use of e-learning strategically (Galliers and Leidner, 2003; Ward and Peppard, 2007). The management's involvement in developing e-learning empowers the organization strategic alignment. From this alignment, the justification of e-learning investment for the organization strategies can be demonstrated from the organization objectives

(Avison et al., 2004). In that order, the need to discuss and exchange ideas, experiences and knowledge between senior managers in organizations in Kuwait is necessary to connect the organization objectives and e-learning capabilities.

Research in Kuwait has highlighted that the attitude of top management and decision makers was not in line with the intention to build an e-learning culture. There were no clear learning and training strategies to develop the knowledge and skills of the learners(Al-Kazemi and Ali, 2002). Researchers such as Al-Shayji (2005) and Al-Srayea (2005) stated that the management within any organization should raise the awareness of the prospective users about the benefits of the new e-service to be adopted. These awareness campaigns could be taken through organising conferences and exhibitions, and through press interviews, radio and TV. For example, in the context of e-government in Kuwait, Al-Freih (2005) mentioned that e-Kuwait, a periodical bulletin issued in both Arabic and English and in electronic form in addition to the traditional printed form, is one of the solutions and means to develop a relationship between the e-government project and society in all its variety. She said "let's make e -Kuwait the bulletin of inter-communication, idea enrichment, and a channel for a useful national dialogue".

In Kuwait, the general population predominantly has limited knowledge and awareness about what is e-learning and what are its benefits (Al-Omari and Al-Omari, 2006). This lack of awareness might forbid the prospective users from adopting and using e-learning. Therefore, the development and acceptance of e-learning will depend mostly on planning and awareness (Bhattacherjee, 2002; Navarra and Cornford, 2003; Reffat, 2003). Moreover, Morris and Venkatesh (Morris and Venkatesh, 2000) reported that older people mostly lack awareness and have limited trust in technology. Therefore, organizations often tend to pay more attention to the age of the targeted users due to the generation gap and lack of experience in the use of new technologies. Hence, the importance and benefits of e-learning should be underlined and exploited.

Second on the list of barriers in Kuwait was the language barrier. The literature on developing countries and information technology adoption includes both positive and negative views as well as critical opinions of forces and changes driving and influencing those barriers (Walsham and Sahay, 2006). The literature also mentioned that language barriers are one of the major obstacles that lead to the slow IT diffusion in developing countries (Al-Gahtani, 2003). Language barriers are more significant in

developing countries than in developed countries due to their relatively poor innovation and inability to produce their own systems and contents in their own languages. For example, according to Yoshi Mikami (an Internet author) the situation in Japan in this respect has improved significantly in the ten years preceding the turn of the millennium (Crystal, 2001), with about 90% of Web pages in Japan being already in Japanese. This information speaks to the fact that some locally produced Web sites have managed to accumulate enough good information in the local language for its native users. Japanese now appears to be dominant for Japanese Internet users.

English is the most popular language in e-learning platforms, but most Arabic users have difficulties in understanding and speaking English. The e-learning literature showed that only a few Arabic e-learning platforms exist. For this reason we find the creation of a platform that would aid Arabic users is highly necessary. However, there are some problems associated with the making of an Arabic platform, these relate to language as well as technology. The adoption of technology in general and e-learning in specific in the Arabic speaking world seems to depend on technological advances to solve the language barriers problem (Oxford, 2013). Technologies such as better software to allow easier use of the Arabic script on the web and communications, voice recognition software and a breakthrough in automatic translation would all contribute to the move to more Arab speaking networks. Furthermore, in the e-learning literature, "content is king" and unless there is generous and suitable content in any local language, people will use resources in other languages that have managed to offer significant information (Basturkmen, 2006; Tomlinson, 1998).

Language barriers were added in this research since students in higher educational institutions in Kuwait have normally undertaken all their previous education in Arabic, speaking English as a second language and have varying levels of English proficiency. Since most of the e-learning courses were developed in English, most of the prospective users who did not master their English language will feel uncomfortable with e-learning (Ali and Magalhaes, 2008). Meanwhile, translating or developing these courses in Arabic is very expensive and logistically complicated. Higher educational institutions that provide or intend to provide e-learning systems need to be aware of the ways a language barrier may impact their user's experience with e-learning. The language barriers are complicated by the fact that many organizations and providers have no effective strategy prepared to deal with a

language barrier when it exists. In higher educational institutions, when a language barrier exists and no effective strategy to bridge the barrier is implemented, those higher educational institutions may pay an economic price through the increased use of costly projects such as hiring professionals to translate or develop courses in Arabic and providing more professionals and tutors to provide help when needed. To this end, the Arab Human Development Report of 2009 (UNDP, 2009) urged the policy makers in the Arab states to encourage and reward professionals, scholars and entrepreneurs to develop content in Arabic.

The language barriers can also be found in other context. For example, Timmins (2002) studied the effects of language barriers on health care. He found that the language barriers experienced by non-English-speaking population, who speak a language other than English as their mother language, can result in limiting their use of hospitals, public health and other medical and social services to which they are legally entitled and can limit their ability to understand what services are available to them. Because of these language barriers, those persons are often excluded from programs or experience delays or denials of services from recipients of federal assistance. Significant evidence showed that language barriers can adversely affect quality of health care.

Technology problems were addressed as a significant barrier since some organizations did not have the appropriate infrastructure to support e-learning (Ali and Magalhaes, 2008). IT infrastructure is the backbone of any new technology project and organizations are responsible for establishing a capable IT infrastructure that can handle the rapid development in technology. However, there are some challenges concerned with IT infrastructure. Therefore, organizations in Kuwait should have an appropriate strategy in developing an IT infrastructure, conducting proper planning to establish an acceptable technical infrastructure, and developing a proper network and communication infrastructure capable of managing information traffics and systems within the organization. Internet speed and bandwidth limitations may slow downloading multimedia files and accessing simulative and interactive tools and take far too long time which will reduce the acceptance of e-learning.

Technology standards are an essential requirement for the realization of e-learning. According to Nyrhinen (2006), IT standards dictate how IT resources are to be obtained, managed, and used within the organization. They act as the bond that links the use of physical and intellectual IT asset. It is common for different departments

within an organization to have different, incompatible software and hardware that may not integrate and work together which may lead to e-learning establishment difficulties. Since e-learning is expected to provide access to the Kuwaiti students, academics, and managements from one single integrated gateway, it requires the participating organizations in Kuwait to share their data to serve and realize the users' needs. Therefore, information technology standards are required to avoid any system integration barriers that would impede the success of e-learning.

The absence of technical support would be a significant factor for ending the e-learning project since most users are not familiar with e-learning technologies and procedures. Mahmood et al. (2001) defined technical support as people assisting the users of computer hardware and software products, which can include hotlines, online support service, machine-readable support knowledge bases, faxes, automated telephone voice response systems, remote control software and other facilities. Technical support is one of the important factors in the acceptance of technology for teaching (Hofmann, 2002; Sun et al., 2008; Williams, 2002), and in user satisfaction (Mirani and King, 1994). Ngai et al. (2007) extended the Technology Acceptance Model (TAM) to include technical support as a precursor and investigated the role of the extended model in user acceptance of Web CT. The result showed that technical support has a significant direct effect on the attitude of students using Web CT. E-learning projects that were not successful in achieving their goals did not have access to technical advice and support (Alexander, 2001; Benson Soong et al., 2001). If technical support is lacking, e-learning will not succeed (Selim, 2003).

The impact of e-learning so far has failed to deliver benefits, and improvements rarely have matched expectations. The lack of awareness of the potential benefits to be accrued from creating an e-learning culture in which technology is a facilitator does create some confusion. However, there were indications and hopes that it is only a matter of time to really appreciate and adopt e-learning in Kuwait (Al-Fadhli and Khalfan, 2009).

2.7 Barriers Comparison between Kuwait and Developed Countries

A comparison of barriers between the Kuwaiti and developed countries experiences is shown in Table 2.2. The comparison was established by using a simple 3-point scale

(Important, Relevant and Irrelevant) to rank the barriers according to their degree of importance, as described in the literature.

Table 2-2: Comparison of barriers between Kuwait and Developed Countries

Barriers	Developed Countries	Kuwait
Cost	Important	Irrelevant
Time	Important	Important
Technology	Important	Important
Attitude	Important	Relevant
Management Support	Relevant	Important
Language	Irrelevant	Important
Murray (2001); Baldwin-Evans (2004); Simmons (2002); UFI/Learndirect (2004); Arab Human Development Report (2009); Al-Kazemi (2002); Ali & Magalhaes (2008).		

From the literature, the order of priorities of barriers found in developed countries is cost, time, technology, and attitude. Whereas, the order of priorities found in Kuwait also from the literature is management support, language, technology, and time. Comparing the two rankings, time and technology share the same degree of importance. However, in the remaining barriers, Kuwait varies from developed countries which support our view that the barriers in different regions and societies may differ from those found in the developed countries, with varying degrees of intensity and importance. For instance, in the developed countries, cost and attitude barriers ranked highly as important whereas in Kuwait, cost and attitude appear as irrelevant and relevant, respectively. On the other hand, management support and language barriers rated as highly as important in Kuwait whereas in developed countries, management support barriers considered relevant and language barriers considered irrelevant.

2.8 Technology Adoption Theories & Models

This section provides an introduction to the numerous models and theories that have been developed during recent times and in various disciplines, all of which have been adopted when estimating, describing and comprehending the implementation, acceptance, and adoption of new technologies or products by individuals. Since this

research investigates the adoption of e-learning in Kuwait, it is important to have a background of those adoption theories and model and discuss them.

Such models have all undergone changes during recent years, which has occurred as a result of scholars' continuous attempts to validate and develop models. For instance, the Theory of Reasoned Action, as introduced in the Psychology field by Ajzen and Fishbein (1980), was developed into the Theory of Planned Behaviour (TPB) (Ajzen, 1985), which was similarly extended into the Decomposed Theory of Planned Behaviour (DTPB) (Taylor and Todd, 1995a). Moreover, in the field of Information Systems, the Technology Acceptance Model (TAM) was introduced by Davis (1986), and represents a notable extension of the Theory of Reasoned Action. The TAM was later extended to the TAM2, as proposed by Venkatesh and Davis (2000). Moreover, an accretion of other models, including those detailed previously, as well as Rogers' Diffusion of innovations (DOI) (Rogers, 1983), Bandura's Social Cognitive Theory (SCT) (Bandura, 2001), Deci & Ryan's Motivational Model (MM) (Deci and Ryan, 1985), and Triadis's Model of PC Utilisation (MPCU) (Triandis, 1979), is that of the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003).

Thus, the attention directed towards technology acceptance models is domain-specific; in each domain, a sequential presentation arrangement is adopted for monitoring model development, as well as the interactions between them. Notably, despite each model comprising a different analytical thrust in regard to acceptance, there are nevertheless a number of shared themes and threads amongst them.

2.8.1 Theory of Reasoned Action (TRA)

The Social Psychology field was the first arena in which a model was introduced in order to describe technology acceptance. Notably, such work is known to have been on-going during the period 1918–1970, during which scientists sought to explain the behaviours and actions of individuals through attitude impact. Their efforts were discontinued following inconsistent and conflicting findings in regard to attitude and behaviour, with the former believed to have either a direct or an indirect impact on behaviour, and being viewed as either a one-dimensional or multidimensional factor. In this regard, the investigations of Ajzen and Fishbein are known to have been a result of a research programme originally initiated during the late-1950s, with their

work considering the prediction of behaviours in both applied settings and laboratory environments. Markedly, their approach acted as an amalgamation of a number of different lines of study and theories regarding attitude: for instance, balance theory, expectancy-value theories, learning theories, theories of attribution, and theory of cognitive dissonance. They sought to develop a theory with the capacity to estimate, describe and impact human behaviours (Ajzen and Fishbein, 1980), and thus the researchers introduced the Theory of Reasoned Action in 1967. However, during the years since its development, the theory has undergone much refining, development and testing.

2.8.1.1 TRA Assumptions

The TRA theory is founded on the supposition that individuals are logical beings, and will therefore make methodical and efficient use of the data made available to them, which are considered prior to taking action. Markedly, individuals take into account the consequences and effects associated with their actions prior to becoming involved in certain behaviours (Ajzen and Fishbein, 1980). Moreover, the theory considers behavioural intentions as opposed to attitude as the key forecaster in behaviour. Importantly, when considering the TRA, it is held that the most valuable factor in the behaviour of an individual is intention, i.e. an individual's intention to carry out certain behaviour is a combination of various aspects, namely attitude towards behaviour performance, and subjective norms. Moreover, the key variables associated with the TRA model may be described as follows (Figure 2.4):

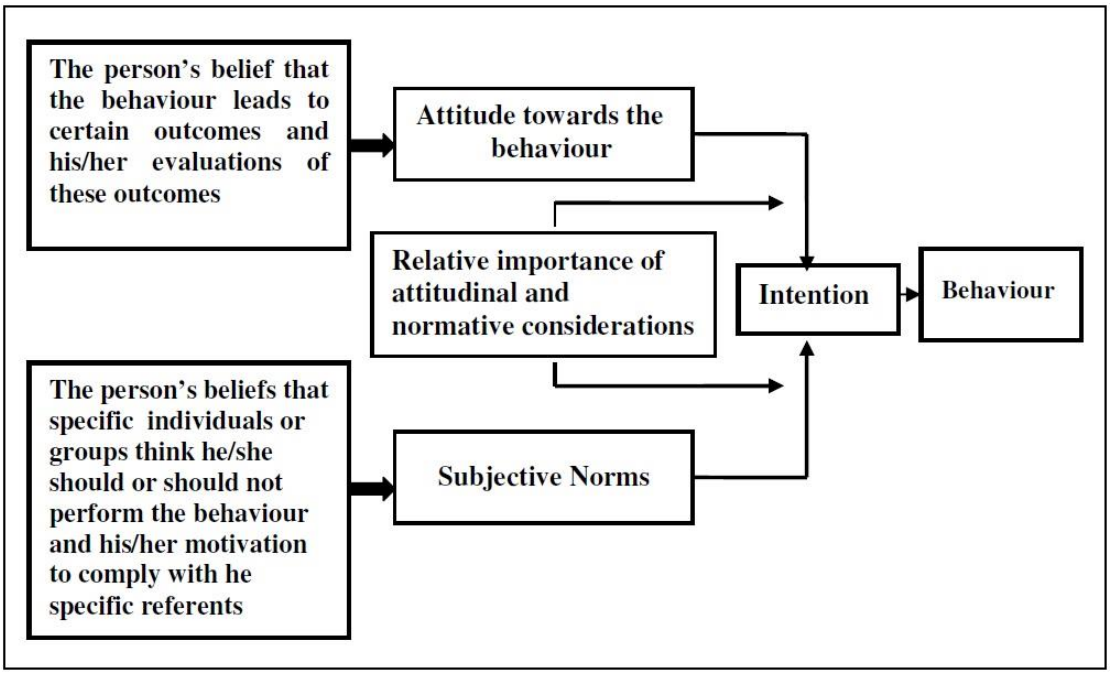


Figure 2.4: Factors determining a person's behaviour

Attitude towards the behaviour: this concerns the extent to which behaviour is valued either negatively or positively. Ajzen and Fishbein (1980) emphasise the belief that there may be the highly accurate prediction of an individual's attitude towards an element when considering the individual's knowledge regarding beliefs surrounding the attitude of the object and the evaluation of such beliefs. In particular, attitude is viewed as being the sum of the beliefs multiplied by the evaluation of such.

For instance, when considering the attitude of an individual towards e-learning, the following beliefs may be witnessed:

- e-learning is difficult;
- e-learning is expensive;
- e-learning is a waste of time.

In the opinion of scholars Ajzen and Fishbein, the attitude of an individual in regard to e-learning maybe recognised as a function of the strength with which such beliefs are held, and the evaluation of such.

Subjective Norms: this concerns the way in which behaviour is impacted as a direct result of a social environment. This may be described as the view of an individual that those surrounding him/her believe a certain behaviour or action should or should not be carried out.

Intention: this is taken as a predictor of the willingness of an individual to carry out a certain action or behaviour. Intention is widely regarded as being the immediate precursor of behaviour/action.

2.8.1.2 Limitation of TRA

It was highlighted by Ajzen (1985) that, although the theory is recognised as valuable, there is nevertheless a limitation referred to as 'correspondence'. Importantly, in order for the theory to accurately estimate behaviour, both attitude and intention must be in agreement in regard to action, context, target, timeframe, and specificity (Sheppard et al., 1988). In addition, it is recognised that there is a further restriction associated with the theory, which comes from the postulation that behaviour is under volitional control; in other words, the theory is only relevant when considering consciously decided upon behaviours. In this regard, it is therefore stated that habitual actions, irrational decisions, or behaviours that are not consciously considered are not applicable to this theory.

2.8.2 Theory of Planned Behavior (TPB)

Owing to the restrictions associated with the TRA, the Theory of Planned Behaviour (TPB) was introduced by Ajzen (1985), which acts as a further development of the Theory of Reasoned Action. Markedly, as per the original Theory of Reasoned Action, the most pivotal aspect of the TPB is the intention of the individual to carry out a particular action or behaviour. Importantly, the TPB seeks to consider the issue of behaviours that are carried out without the volitional control of the individual. More specifically, the TPB is noted as differing from the TRA in regard to its addition of the component of perceived behavioural control (PBC), which takes into account circumstances wherein an individual does not have full control over the behaviour. This may essentially vary in terms of actions and situations (Ajzen, 1991). The Theory of Planned Behaviour considers the overall concept of PBC to be within a more generalised framework of links amongst attitude, behaviours, beliefs, and intentions. PBC is considered to impact both behaviour and intention, impacting behaviour either interactively or directly.

As outlined in regard to Theory of Reasoned Action, when an individual has complete control over their behavioural performance, as afforded through behaviour or situation, behaviours may then be predicted solely on the basis of intention. With this in mind, it is noted by Ajzen (1991) that, in situations where behavioural intentions are accountable for only a small degree of behavioural variance, PBC may be independently predictive of behaviour. Markedly, both PBC and intentions are essential when seeking to predict behaviour, although one aspect may be regarded as being more important and valuable than another when considering the prevalence of certain conditions. Accordingly, in circumstances where predictions surrounding behaviours arising from intention is likely to be hampered by actual (volitional) control, there is the need for PBC to enable the adoption of behavioural intentions into action, and to directly predict behaviours, as noted by Armitage and Conner (2001). Accordingly, together with behavioural intention, PBC may be indirectly or directly utilised to predict the achievement of behaviours.

Regardless, however, when striving to ensure precise predictions, a number of different conditions must be met. Firstly, PBC and intention-related measures must be compatible with those behaviours to be predicted, whilst the stipulated context must be the same as that in which the behaviour under examination is to arise. The second condition necessary for precise prediction is behavioural observations owing to the fact that superseding events may cause a number of intentional changes or changes in behavioural control perceptions to arise. Thirdly, behavioural control accuracy, behaviour predictions as a result of perceived behaviour control, should be enhanced in terms of the degree to which behavioural control perceptions convincingly and accurately reflect actual control (Ajzen, 1991).

In an attempt to describe and estimate behaviours, the TPB model addresses attitude, perceived behavioural control, and subjective norms antecedents (Figure 2.5). With this noted, the TPB emphasises the belief that behaviour is a function of salient beliefs pertinent to a certain behaviour. Such beliefs are viewed as being the predominant or principal determinants relating to the actions and intentions of an individual. When assigning meaning to such antecedents, Ajzen (2011) provides a summary as detailed in Figure 2.5 below.

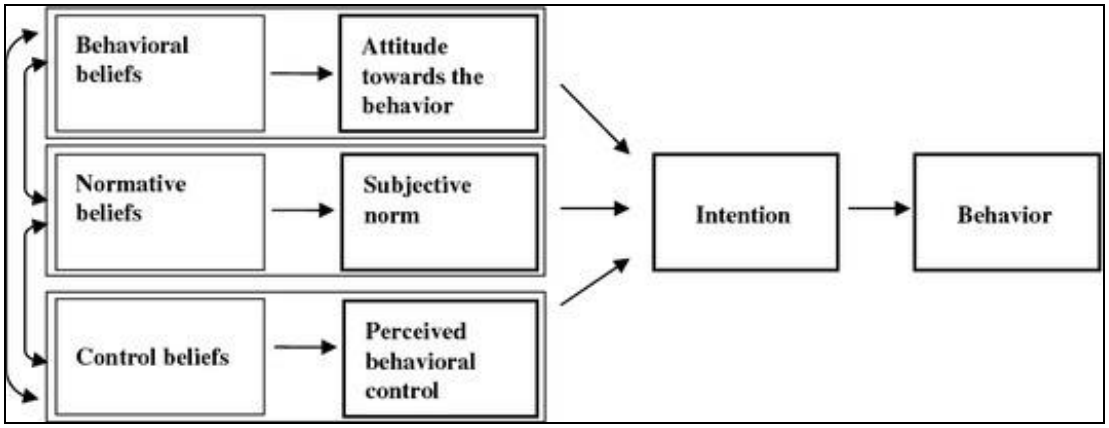


Figure 2.5: Theory of Planned Behaviour (Ajzen, 2006)

Behavioural beliefs: A behavioural belief is the subject likelihood that behaviour, when carried out, will create a given result, and is taken to impact attitude towards the behaviour. Although a number of behavioural beliefs concerning certain behaviours may be held by an individual, it remains that very few are readily accessible at any one time.

Normative beliefs: These refer to those behavioural expectations concerning important influential reference individuals or groups that are perceived by an individual. It is held that normative beliefs, when combined with the motivation or desire of an individual to adhere to different referents, help to establish the principle subjective norm. In other words, in direct proportion to the individual's subjective likelihood that the referent believes the individual should or should not carry out a certain action or behaviour, the subject norm is contributed to by the motivation to adhere to each referent.

Control beliefs: Such beliefs are concerned with the considered occurrence of elements that may enable or hamper behavioural performance, with each factor holding a certain degree of power and control. Such power is known to contribute to the perceived behavioural control in relation to the elements present in a given situation, thus calling for behavioural performance.

In addition, within the TPB, there is another construct viewed as potentially having a direct impact on PBC and behaviour:

Actual behavioural control: This makes reference to the degree to which an individual has the necessary resources, skills and other requirements to adequately carry out an action or behaviour.

Throughout the course of the literature, a great deal of attention has been afforded to PBC, with Ajzen (1991) assuming that the model is seen to be most well-matched and well-suited to the concept of self-efficacy, as introduced by Bandura (1977), which is essentially centred on the judgement concerning the ways in which one is able to implement actions necessary when dealing with upcoming circumstances. Moreover, it is further held by Ajzen that the majority of PBC-relevant information stems from the Bandura's systematic research programme, with investigations emphasising that the behaviours of people are significantly impacted by their own confidence in their capacity to carry out behaviours, thus resulting in the conclusion that beliefs of self-efficacy are able to impact activity-related choices, preparations, efforts, thought patterns, and emotional reactions. With this in mind, Ajzen further postulates that self-efficacy is equal to TPB.

On the other hand, however, the views of Ajzen have been contradicted by those of Armitage and Conner (2001), who state that there is a lack of synonymous links between self-efficacy and PBC, and accordingly provide evidence from Bandura (2001), arguing that the two concepts of self-efficacy and control are very different concepts. Thus, Bandura emphasises that, whilst PBC reflects more general, external factors, self-efficacy is more focused on the more cognitive viewpoints of control, with consideration to internal control factors. Moreover, Armitage and Conner (2001) highlight a number of other investigations that are seen to provide additional support for the two concepts being very separate, such as the work of White et al. (1994) and Manstead and Eekelen (1998). In this regard, Armitage and Conner (2001) provide evidence from their own work to suggest that, although PBC and self-efficacy can be considered to comprise similar degrees of behavioural variance, self-efficacy, on the other hand, is able to explain a larger proportion of intentional variance, thereby suggesting that this concept should be considered the most suitable and accurate measure of TPB perceived control. In addition, the scholars further emphasised in their 1999 work that control beliefs, as described by Ajzen (1991), are the antecedents of self-efficacy, but ultimately only show a weak correlation with perceived control over behaviour.

In his 2002 work, Ajzen (2002) further considers a number of other issues associated with PBC measurement, stating the unoriginality of the PBC concept compared with TPB, and further emphasising that similar ideas are found when reviewing other models, such as that of the model of Interpersonal Behaviour (Triandis, 1979), which adopts the form of a 'facilitated conditions' stance. Moreover, the scholar further recognises the difference between PBC and self-efficacy at a basic level, and acknowledges the deceptive and somewhat confusing effect garnered as a result of using the terms PBC and self-efficacy interchangeably. With this in mind, Ajzen further notes that, in an attempt to avoid any confusion, the term 'perceived control of performance of behaviour' should be utilised in place of 'perceived behavioural control', although it is further argued that Bandura's theorising shows no tendency towards belief in self-efficacy being restricted to internal factors. Moreover, the scholar further highlights that PBC in TPB generally makes reference to the expectations of individuals concerning the extent to which they have the capacity to perform a certain action and/or behaviour, alongside the degree to which such individuals have the necessary external and/or internal resources. With this noted, Bandura further recognises that TPB is essentially focused on the degree to which such factors are recognised as being both present and considered able to facilitate or hinder the behavioural performance being examined.

2.8.2.1 **Limitation of TPB**

Both TPB and TRA models are not without their own recognised problems. For instance, Eagly and Chaiken (1993) highlight evidence that a number of other elements have the capacity to predict behaviour and intention in the context of the TRA model, namely habit, perceived moral obligation, and self-identity, whilst the TPB model seems to have no such tendency. Markedly, the latter model is known to be a substitute for the volitional control limitation of TRA, which markedly proposes that behaviours are both planned and intentional, although the TPB fails to highlight the ways in which people plan, and also the relationship between planning and TPB.

Moreover, further criticism stems from the work of Taylor and Todd (1995a), who suggest that the models require individuals to be motivated to perform a certain action or behaviour, with such a postulation potentially challenging when considering

consumer adoption behaviours, as well as the assumption of an identical belief structure amongst individuals when carrying out an action. In addition, one particular variable is introduced through the TPB model (that of PBC) which is viewed as being an answer to all non-controllable aspects of an action. Notably, the beliefs held surrounding the PBC were developed so as to facilitate the creation of a measure, with such development criticised for failing to highlight certain elements that may be able to estimate behaviours and the biases created as a result. With this in mind, Taylor and Todd (1995) present decomposed TPB with the aim of delivering an improved, more in-depth comprehension of behaviour.

2.8.3 Technology Acceptance Model (TAM)

As a subsequent development of the TRA model, Davis (1986) created the technology acceptance model (TAM), which considers the acceptance of IT illustrated by an individual. The TAM model has the main aim of delivering explanations and rationales regarding computer acceptance determinants amongst users, with TAM known to have replaced the attitude beliefs of the TRA with the two technology acceptance measures of PEOU (perceived ease of use) and PU (perceived usefulness). Notably, however, the TRA's subjective norms (SNs) are not included in the TAM as a determinant of behavioural intentions (BI). Nevertheless, when considering empirical evidence, the final model was found to have disregarded the attitude construct owing to the fact that it was not able to entirely facilitate or arbitrate the effort of PEOU on intention, and also owing to the fact that the PU-BI link was viewed as being far more valuable (Davis et al., 1989). With this noted, it is emphasised that TAM suggests that PU is markedly impacted by PEOU owing to the notion that a technology is commonly held as being more useful if it is easier to use (Figure 2.6).

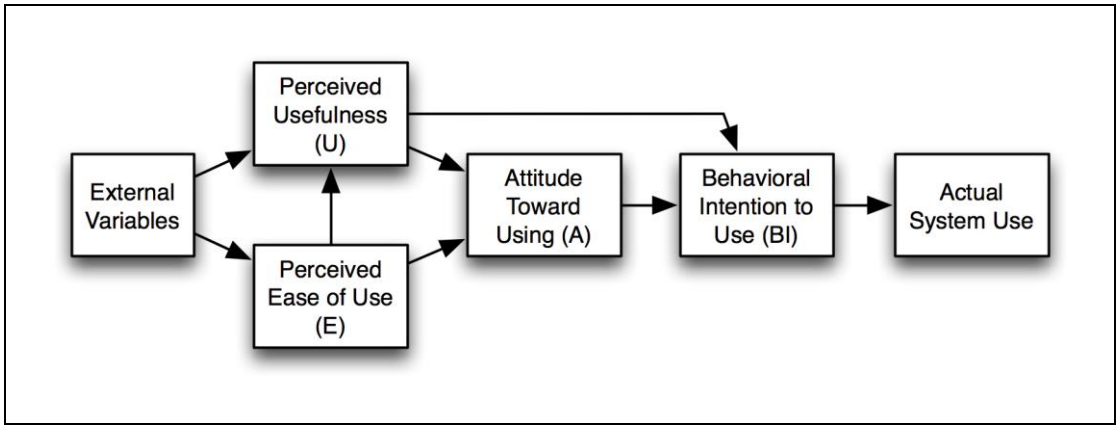


Figure 2.6: Technology Acceptance Model (TAM) Based on Davis et al. (1989)

Markedly, this particular model comprises external variables that refer to a set of variables, including computer self-efficacy, objective system design characteristics, the nature of the implementation process, training, and user involvement in design (Davis and Venkatesh, 1996). However, following the progression and development of TAM, a number of new variables were introduced as external, all of which were seen to impact BI, PEOU, and PU, as well as actual use and behaviour. With this noted, the most commonly referenced include compatibility, computer anxiety, computing support, enjoyment, experience, and system quality (Lee et al., 2003). Moreover, the link between the four major variables comprised within the TAM model (PU, PEOU, BI and behaviour (B)) is predicted as utilising PU as both a dependent variable directly impacting BI, and also as an independent variable owing to the fact that it is predicted by PEOU. Furthermore, Actual Use and Behaviour are commonly gauged through the amount of time used, the frequency of utilisation, the actual number of usages, and usage diversity.

2.8.3.1 TAM Evolvement

During the past two decades, a great many changes have been witnessed in regard to TAM, with Wixom and Todd (2005), for example, having highlighted the extension of TAM in three main ways. Firstly, factors from a number of other models, such as PBC, SN, and TPB, were included; secondly, various alternative or additional beliefs were incorporated; and thirdly, external variables believed to impact PEOU and PU, such as demographic characteristics and personality traits, were examined.

In light of the above, Lee *et al*. (2003) conducted a meta-analysis, which established that the evolvement of the TAM, during the period 1986–2003–could be assigned to four different periods of time, namely introduction, validation, extension, and elaboration. Following the introduction of the model in 1989, studies focused on TAM were generally directed down one of two paths: the first was most concerned with duplicating TAM in combination with a number of other technologies in order to clarify its prudence; the second was generally focused on drawing a comparison between TRA and TAM, considering differences between the original and more advanced models, and further taking into account whether or not the TRA could be viewed superior to its predecessor. With this in mind, the work of Taylor and Todd (1995b) established that TAM is more frugal and economical when compared with DTPB, which comprises eight additional variables. Furthermore, the work of Davis *et al*. (1989) drew a comparison between TAM and TRA with focus on the ways in which the models measured the relative facility of word processers by students during two different timescales, namely immediately following introduction to the system, and 14 days following introduction. It was subsequently found that the TAM is more useful in explaining users' intentions than the TRA.

Following the introduction of information systems (IS) within corporations, TAM was developed, with Davis *et al*. (1989) adopting a different approach to that of Ajzen (1985). Markedly, those in the field of IS state that TAM is a model developed in the IS field, whether TPB and TRA were introduced in the psychology arena. As a result, throughout the course of the past twenty years, TAM has become more widely recognised as a strong, powerful system in the arena of predicting users' acceptance of new, innovative technologies. Regardless, however, this does not mean that such systems are without fault.

2.8.3.2 Limitation of TAM

It is noted that the most widely acknowledged limitation of the TAM model is the measurement of utilisation through depending on self-reporting, and thus assuming that actual usage is accurately reflected through self-reporting tools. Furthermore, there is a second limitation, which is related to the type of respondents or the choice of sample. For instance, whilst undertaking some of the research, a convenient sample

of professional users or a university student sample may be taken, which thus incurs problems and challenges regarding generalisation (Legris et al., 2003). A further limitation is that TAM provides only limited guidance concerning the ways in which usage can be impacted through design and adoption (Taylor and Todd, 1995b; Venkatesh et al., 2003). Notably, the model provides feedback on the practicality and ease of use, but ultimately neglects to consider areas of improvement, which could ultimately improve implementation, i.e. completeness of information, flexibility, information currency, and integration. It is thus considered that such guidelines form the main foundation of the development of TAM, but have ultimately failed to be afforded adequate attention (Davis et al., 1989).

Furthermore, two major limitations of TAM research have been noted by Sun and Zhang (2006) as being the explanatory power of the model and the inconsistent link between constructs. The scholars took and analysed data from 55 different articles, which suggested the overall degree of vulnerability of explanatory power in two areas: the relatively low explained explanatory power of the model (40% average) (Sun and Zhang, 2006; Venkatesh et al., 2003), and the variation of explanatory power as a result of different approaches utilised (e.g., field versus experimental studies). Mainly, the experimental research was carried out with the use of a convenience sample of students, thus meaning that the findings cannot be generalised to a working environment. Moreover, the field research was carried out in one go. With this in mind, it is viewed that technology acceptance research should be conducted through the adoption of a longitudinal approach owing to the fact that people's views and opinions have a tendency to change between the introduction of a technology and actual utilisation.

Lastly, the work of Lee et al. (2003) highlights the TAM model as having various limitations, which were ascertained following the conduction of their meta-analysis. These were found to be: the use of only an individual information system for the study or a single subject, i.e. one department, one organisation, or one sample population, e.g. MBA students; the utilisation of a one-time cross-sectional research; the testing of only one task without adequately combining tasks and testing them in regard to the target information system.

2.8.4 Diffusion of Innovation Theory (DOI)

Diffusion relates to a procedure through which innovation is communicated via a number of different channels during a particular period of time amongst members of a social system. Importantly, an innovation is viewed as being an idea, object or practice considered by an individual or other entity to be new. In this regard, diffusion is considered a special type of communication focused on the spread of messages that are recognised as being new ideas or technologies. Through communication, participants are able to both establish and share information amongst themselves with the aim of reaching a consensus and understanding. With this in mind, new ideas are known to comprise a certain degree of vagueness and ambiguity, and may therefore be considered to comprise risk. Accordingly, data is viewed as being a difference in matter-energy, which markedly impacts uncertainty in situations where a choice is apparent amongst various alternatives. When considering the definition of 'diffusion', as highlighted above, it can be stated that there are four individual components, namely innovation, communication channels, time, and social system (Rogers, 2010).

2.8.4.1 History of DOI Theory

Prior researches carried out in regard to diffusion can be traced back to sociologists (Tarde in France; Simmel in Germany), and anthropologists (mainly groups in Britain and Germany-Austria), spanning as far back as one hundred years. Such European 'diffusionists', as they are known, were amongst the first scholars to adopt the term 'diffusion', with the 1940s recognised as being the time at which the original diffusion model was introduced through the work of Ryan and Gross (1943). Throughout the 1950s, a number of different researches centred on diffusion were conducted within the United States of America, with the 1960s involving the development and further widespread conduction of diffusion-based studies in a number of developing countries, such as Africa, Asia, and Latin America (Rogers, 2010). Markedly, a number of different disciplines led to the diffusion theory to be developed further, the first of which was that of Anthropology. Subsequently, a number of other research investigations were conducted on similar topics, which resulted in the development of the theory, including communications, education, early

sociology, general sociology, geography, marketing, public health/medical sociology, and rural sociology (Rogers, 2010).

More specifically, there were two events that significantly contributed to the development of the theory, namely the Iowa Hybrid Seed Corn study, which was carried out by Ryan & Gross (Rogers, 2010; Ryan, 1943), and the analytical observations of the French sociologist Gabriel Tarde in late 19th century (Kinnunen, 1996), which were garnered as a result of considering and reviewing legal cases and social trends. Importantly, it is recognised that the work of Tarde was significantly developed and ahead of its time in regard to diffusion-based conceptions, with the use of various concepts witnessed throughout the work, including 'imitation', which is commonly referred to as 'adoption'. Moreover, the rejection or adoption of innovations were also identified as being a fundamental outcome variable in the context of diffusion-based studies, with Tarde further acknowledging that a new idea and the speed at which it was adopted commonly adhered to an S-shaped curve throughout time. He further highlighted that the take-off point of the S-shape begins when a new idea is adopted by opinion leaders. Importantly, although the currently utilised term in this context was not used, Tarde's use of the word 'imitation' suggests that an individual is able to learn about innovation through replicating others' implementation of innovation which is nowadays referred to as a social process of interpersonal communication network.

2.8.4.2 Description of DOI Theory

Innovation theory-centred diffusion provides individuals interested in innovation-based diffusion, from any discipline, with a conceptual model for the comprehension of diffusion-oriented processes and social change (Rogers, 2003). Markedly, diffusion of innovation theory delivers a number of well-developed concepts, as well as a multitude of empirical findings relevant to the research of technology adoption and implementation, and evaluation, in addition to qualitative and quantitative tools concerned with analysing the potential rate of technology diffusion, and further identifies a number of different factors that may either inhibit or enable the adoption and implementation of technology (Fichman, 1992). Such factors comprise the

innovation-centred decision process, attributions of the innovation, and innovators' characteristics.

2.8.4.3 Innovation Decision Process

The innovation-decision process is recognised as being the process via which individuals or other decision-making entities progress through phases of knowledge regarding innovation, and subsequently end up devising an attitude towards it, before choosing to either reject or adopt, and implementing it if necessary. As discussed below, there are five individual stages (Figure 2.7).

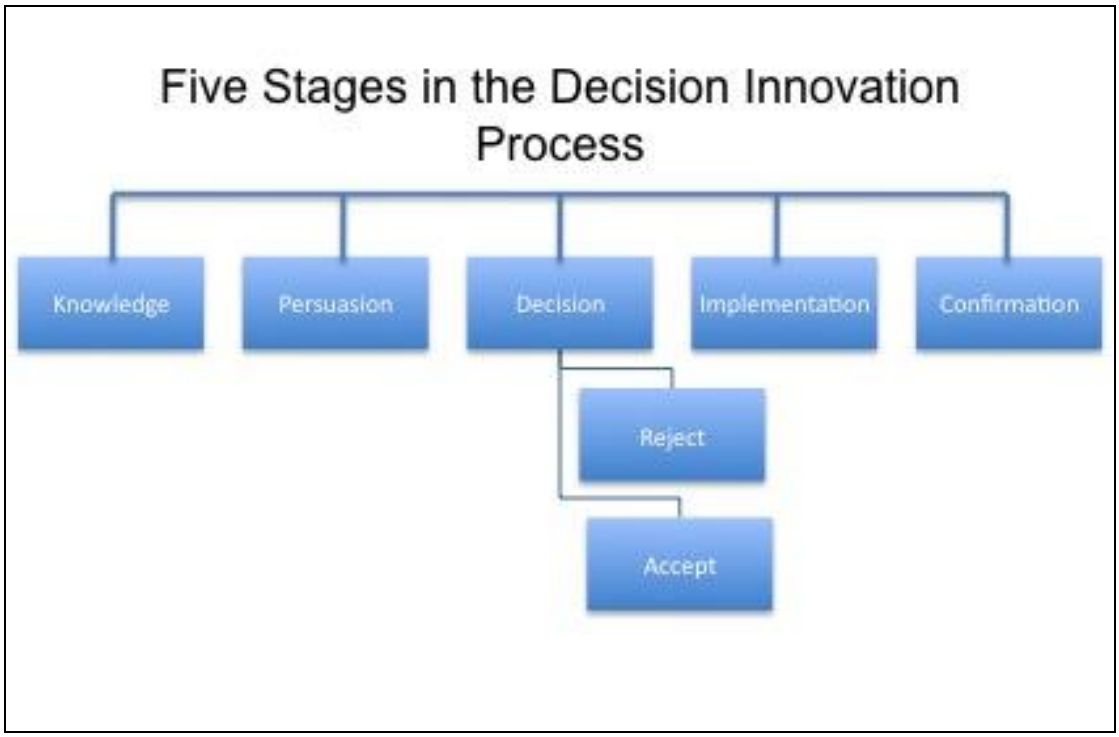


Figure 2.7: Stages of Innovation Decision Process

2.8.4.3.1 Knowledge

Knowledge refers to when the individual or decision-making entity is introduced to the innovation, and accordingly ascertains understanding of the way in which it functions. Notably, knowledge falls into one of three different categories, namely awareness-knowledge, how-to-knowledge, and principles-knowledge. With this noted, it is highlighted by Rogers that innovation may be adopted without principles-knowledge, although in such a case there is the possibility that a new idea may be

misused, subsequently causing discontinuance. Furthermore, the competence of individuals in regard to assessing and evaluating the overall efficiency of an innovation is enabled through their own comprehension and grasp of principles-knowledge. With this in mind, the scholar further suggests that awareness-knowledge may be achieved through large-scale mediums, such as mass media, whilst how-to-knowledge may be provided through numerous different agents, each of whom can play a keen role throughout the experimental and trial phase of the innovation-based decision-making process. In this way, it may be seen that Rogers considers principles-knowledge to be a more suitable task in the arena of formal education.

2.8.4.3.2 Persuasion

Persuasion relates to when an individual develops a positive attitude in relation to the innovation, which is when such people become involved from a psychological perspective, and accordingly garner data relating to the innovation, make decisions on credible sources, and thus decipher the messages they receive so as to develop a generalised viewpoint of the innovation. In this regard, information is sought and attained through peers in an attempt to reduce the overall degree of uncertainty surrounding the new concept.

With the above in mind, it has been noted by Rogers that a person may form an attitude relating to innovation that will ultimately lead them to make a change in their behaviour. However, in a number of different situations, actions and attitude may be separate. With this noted, attitude-use discrepancy is referred to as a knowledge-attitudes-practice gap (KAP gap); hence, a negative or positive attitude towards such innovation may not necessarily directly or indirectly result in the rejection or implementation of the innovation under examination.

2.8.4.3.3 Decision

Decision, in this context, refers to when individuals or entities partake in activities that ultimately lead them to reject or accept an innovation. In this situation, the majority of individuals prefer to try an innovation on a trial or minor scale prior to actually making the ultimate decision of rejection or acceptance. In this regard, those

innovations viewed as offering some degree of advantage may ultimately mean the innovation is adopted.

Rogers further argues that reject might, however, occur at any stage, and might even be seen just before the decision to adopt has been made. Discontinuance might be witnessed in two different forms, namely as active rejection, through which adoption is considered but then ultimately rejected, or otherwise through passive rejection, where the use of the new idea was never seriously contemplated.

2.8.4.3.4 Implementation

Implementation relates to when the person adopts the idea. Up until such a point, the individual or entity may have partaken in a number of thinking and decision-related exercises. Notably, when implementation arises, over behavioural change may be witnessed as the innovation is utilised, when problems may arise and individuals subsequently depend on a change agent to deliver data, knowledge, and technical assistance to facilitate innovation.

Furthermore, Rogers (2003) emphasises that, throughout the phase of implementation, there may be the reinvention or redevelopment of the original idea, with a number of reasons attributed to such a move, including complexity and difficulty in understanding, thus meaning greater simplification is required; ignorance and inadequate learning of how to use the idea; local pride of the ownership; and a number of different possibly applications. With this taken into consideration, reinventions may ultimately prove to be very valuable to those implementing the idea, as mistakes may be reduced and customisation encouraged so as ensuring a good fit. Markedly, throughout the decision-making process, there may be the option to reject or adopt, and so an individual may become actively involved throughout the diffusion process.

2.8.4.3.5 Confirmation

Confirmation relates to doubts an individual may have about adoption following the decision to implement, and may therefore be at risk of reversing the decision should there be any degree of conflict. During the confirmation phase, individuals might strive to avoid dissonance concerning the implementation of the new innovative idea.

On the other hand, if they have already made the decision not to implement the new idea, they may be exposed to more positive views, thus leading them to reverse their choice and choose adoption.

Should the decision be made to reject the change following its adoption, this is referred to as discontinuance, which can be classified as either replacement discontinuance, which makes reference to the decision to reject an idea in favour of a more preferable or better one; or disenchantment discontinuance, which refers to feelings of performance dissatisfaction following adoption (Rogers, 2003).

Moreover, when progressing through phases of innovation-decision, individuals may not acknowledge the end of one phase and the subsequent commencement of another, as noted by Rogers. To compound the issues, innovation-related decisions may vary in the time taken. In this way, differences in the length of implementation are, in some ways, linked to innovation-centred attributes and the characteristics of the individuals.

2.8.4.4 **Attributes of the Innovation**

It has been pointed out by Rogers (2003) that diffusion-based studies have been centred on 'people-related' differences in the arena of innovativeness, whilst fewer attempts have been made in regard to the analysis of differences surrounding innovation. In this regard, it has been noted by Rogers that, *'researchers in the past tended to regard all innovations as equivalent units from the viewpoint of their analyses'*, with the scholar further noting that such oversimplification is problematic and inaccurate. Regardless, however, he acknowledges the necessity to ensure a standardised classification scheme of the perceived attributes of innovation, all of which may be considered in universal terms; however, Rogers does state that measures of perceived attitudes should be developed on a study by study basis as opposed to implementing previously devised scales from previously conducted investigations.

According to Rogers, the views of individuals concerning innovation-related attributes (and not those attributes categorised objectively by change agents or experts) impact the rate of adoption. Innovation attributes may be useful in describing the rate at which innovation is adopted, with much of the variance (recognised as

being between 49% and 87%) being explained by the five attributes acknowledged as being part of innovation. Importantly, each of these elements is believed to be empirically interrelated, although each is conceptually distinct. These are:

1. **Relative Advantage:** the degree to which an innovation is considered to be an improved version of another idea.
2. **Compatibility:** the degree to which an innovation is considered to be consistent with past experiences, prevailing values, and the requirements of potential implementers.
3. **Complexity:** the degree to which an innovation is considered as being problematic in terms of utilisation and overall comprehension.
4. **Trialability:** the degree to which an innovation may be adopted on a trial basis for the sake of experiment.
5. **Observability:** the degree to which innovation-based results are available for review by others.

The rate at which implementation is witnessed is the relative speed with which the members of a social system adopt the innovation, which is commonly measured through the volume of individuals implementing a new idea during a particular timescale. In other words, such a rate is provided in a numerical format as an indicator of the adoption curve gradient. Moreover, as well as the innovation-based attributed discussed above, there are also a number of other variables, including communication channel, nature of social system, and type of innovation.

2.8.4.5 Limitation of DOI

The innovation decision process is explained, to some degree, through the DOI theory, in addition to factors establishing the rate at which adoption is witnessed, and the categories into which adopters are assigned. The theory helps to gauge the likely rate at which the innovation may be implemented. Regardless, however, it has been stated that the theory is not able to provide proof on the ways in which attitude evolves into rejection/acceptance decisions, nor does it provide explanations concerning the characteristics of innovation and how they fit into the process (Chen et al., 2002; Karahanna et al., 1999).

On the other hand, however, it is highlighted by Rogers that decisions concerned with rejection may occur at any phase of the decision process, and also that attitudes are formed along the way, although there was no attention afforded to fully explaining the role that innovation-related attributes may adopt in regard to the formation of such viewpoints. Nevertheless, it is essential that innovation is recognised as comprising a number of different categories of adopter.

Although DOI and TAM have been formed in different fields, the two theories are nevertheless recognised as similar in different ways. As highlighted in research carried out previously, innovation comprises one relative advantage attribute, which is that innovation is commonly viewed as being the PU construct in TAM, and that the complexity attribute is remarkably similar to TAM's PEOU concept. This implies that DOI and TAM complement one another and provide support for each other, as highlighted by Chen et al. (2002).

2.8.5 Unified Theory of Acceptance and Use of Technology

Venkatesh et al. (2003) noticed that IS or IT researchers were confronted with a choice among a multitude of models and were bound to choose constructs across models or choose a favoured model, thus ignoring the contribution from alternative ones. They felt the need for a synthesis in order to reach a unified view of users' technology acceptance.

Accordingly, Venkatesh et al. reviewed and compared the eight dominant models that have been used to explain technology acceptance behaviour. These models included TRA, TPB, TAM, combined TAM - TPB, DOI, SCT, MM, and MPCU (discussed in previous sections). Upon review, the authors reported five limitations of prior model tests and comparisons and addressed them in their work. These include:

- The technologies studied were simple and individual-oriented as opposed to complex and sophisticated organizational technology.
- Most participants in these studies were students (except for a few studies).
- Time of measurement was general and in most studies well after acceptance or rejection of the usage decisions so individuals' reactions were retrospective.

- The nature of measurement was in general cross-sectional.
- Most of the studies were conducted in voluntary usage contexts making it rather difficult to generalize results to mandatory settings.

The authors then empirically compared the eight models in longitudinal field studies conducted in four different organizations among individuals that were introduced to a new technology in the workplace. The measurement was carried out at three different points in time: post training, one month after implementation and three months after implementation, while actual usage behaviour was measured over the six-month post-training period. The data was divided into two samples for the eight models according to the mandatory and voluntary settings. The authors also studied the effect of some moderating variables that have been reported in previous research to effect the usage decision. These were experience, voluntariness, age, and gender. Results showed that, with exception to MM and SCT, the predictive validity of the models increased after including the moderators. The authors then examined commonalities among models and found seven constructs to be significant direct determinants of intention or usage in one or more of the individual models. They hypothesized that four of them play a significant role as direct determinants of user acceptance and usage behaviour. Based on user acceptance literature and results of models' comparison, attitude, computer self-efficacy, and anxiety were hypothesized not to have a direct effect on behavioural intention. The constructs that do have a direct effect on behavioural intentions and usage are: performance expectancy, effort expectancy, social influences, and facilitating conditions (Figure 2.8).

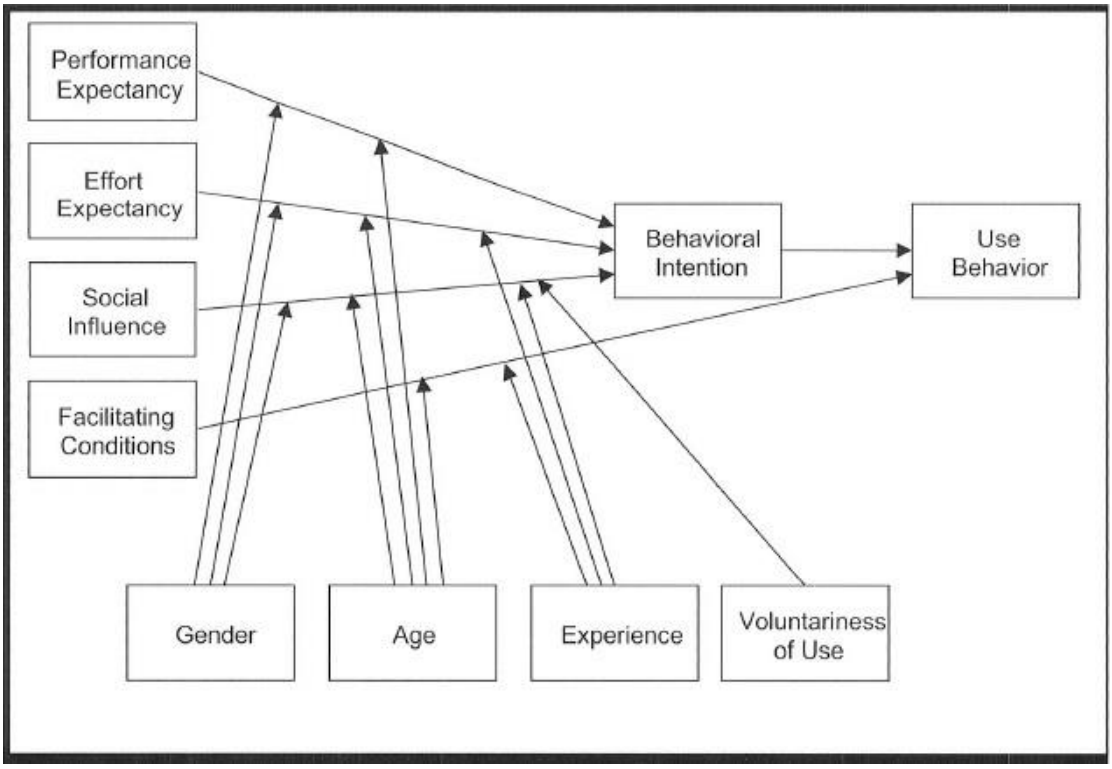


Figure 2.8: The Unified Theory of Acceptance and Use of Technology (Venkatesh, 2003)

The constructs in the model were defined and related to similar variables in the eight models as follows:

Performance Expectancy (PE) is the degree to which an individual believes that using the system will help him/her to attain gains in job performance. The constructs in the other models that pertain to performance expectancy are: perceived usefulness (TAM, and combined TAM-TPB), extrinsic motivation (MM), job-fit (MPCU), relative advantage (DOI), and outcome expectancy (SCT). This construct, within each individual model, was the strongest predictor of intention and remained significant at all points of measurement in both voluntary and mandatory settings.

Based on the literature, the influence of performance expectancy on behavioural intention is hypothesized to be moderated by gender and age; such an effect would be stronger for men, particularly younger workers.

Effort Expectancy (EE) is the degree of ease associated with the use of system. The constructs in the other models that capture the same concept are: perceived ease of use (TAM), and complexity (DOI and MPCU). The construct in each individual

model was significant in both voluntary and mandatory settings, and as expected from the literature it was significant only during the post training measurement.

Based on the literature, the influence of effort expectancy on behavioural intentions is hypothesized to be moderated by gender, age, and experience; such an effect would be stronger for young women and older workers at early stages of experience.

Social Influence (SI) is the degree to which an individual perceives that important others believe he/she should use the new system. Similar constructs are represented in existing models: subjective norms (TRA, TAM2, TPB/DTPB, and combined TAM-TPB), social factors (MPCU), and image (DOI). The comparison between models found that this construct behaved similarly; it is insignificant in voluntary contexts and becomes significant when use is mandatory. The literature explained that in mandatory contexts the effect is attributed to compliance and appears to be important only in the early stages of individual experience and when rewards/ punishment are applicable; in contrast, social influence in voluntary contexts operates by influencing perceptions about the technology (what is known as internalization and identification).

Equally, based on the literature, the influence of social influences on behavioural intentions is hypothesized to be moderated by gender, age, voluntariness and experience; such an effect would be stronger for women, particularly in mandatory settings in the early stages of experience.

Facilitating Conditions (FC) is the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system. This definition captures three different constructs in existing models: perceived behavioural control (TPB/DTPB and combined TAM-TPB), facilitating conditions (MPCU), and compatibility (DOI). The comparison between models revealed that the relationship between intention and this construct in each model is similar in both voluntary and mandatory settings in the first training period but such influence disappears in the second period (one month after implementation).

Based on the literature, when both performance expectancy and effort expectancy constructs are present, facilitating conditions become insignificant; and, consistent with TPB/DTPB, facilitating conditions are also direct antecedents of usage (an attribute found also in MPUC). This effect is expected to increase with experience with technology as users find multiple avenues for help and support. Hence, the influence of facilitating conditions on usage is hypothesized to be moderated by age and experience; such an effect would be stronger for older workers, particularly with increased experience.

The empirical test of the original data (collected from four organizations) and the cross-validation using new data (collected from two additional organizations) provided strong support for the UTAUT. The new model was able to account for 70 percent of the variance in usage intention, which is considered a measure improvement over any of the original models where the maximum was around 40 per cent. The authors acknowledged a limitation of content validity due to measurement procedures and recommended that future research should be targeted at more fully developing and validating appropriate scales for each of the constructs with emphasis on content validity and revalidating or extending UTAUT with the new measures (Venkatesh et al., 2003).

The following section provides a discussion of studies adopting the UTAUT framework in their research design.

2.8.5.1 Research Applying the UTAUT Model

A test for the invariance of the new measurement scale of the UTAUT instrument was carried out by Li and Kishore (2006). Their quest was to test whether the key constructs in the UTAUT model were invariant across different population subgroups. The area of application for their study was Web log system users. Hence, the difference in subgroups is based on the demographic characteristics: user's gender, user's general computing knowledge, user's specific Web log-related knowledge, user's experience with Web logs, and user's usage frequency of Web logs. Based on previous literature, they hypothesized that the UTAUT four key constructs would remain invariant across male and female groups, low and high computing general

knowledge users, users with or without particular Web log knowledge/ experience, and users with low and high frequency use of Web logs.

Data analysis consisted of three stages. The first comprised dividing the data based on the five demographic dimensions into two fairly balanced groups for each dimension. With a test of goodness to fit index (0.09), the second stage involved the measurement of equivalent-item-factor loadings (also called measurement of tau-equivalence) across two groups under each dimension. The third stage was testing full- equivalence under each dimension.

The findings indicated that users with different experience and knowledge in computing and Web log use have the same interpretation of the instruments of performance expectancy and effort expectancy. On the other hand, social influence is not interpreted similarly among users with high or low frequency of Web log usage; nor are the scores of facilitating conditions instrument comparable for users with different levels of web log experience and usage frequency from the perspective of statistical significance, although they are comparable for computing and Web log knowledge. However, the authors argued that this statistical significance does not mean that the difference in true score between these subgroups is high in magnitude. Gender statistical results showed that instrument of effort expectancy and facilitating conditions are comparable, while the case is not so for the performance expectancy and social influence instruments.

The authors recommended caution in interpreting the findings since the instrument pertaining to the UTAUT constructs has invariant true scores across most subgroups in the context of acceptance of online community Web log systems. They also indicated the need for more invariant studies about the UTAUT constructs that were not found to be invariant in this study (Li and Kishore, 2006).

Wang and Yang (2005) extended the UTAUT to fit with their study, online stocking in the financial market, by adding the personal trait construct to the model. They treated this extension in two ways by exploring the role personal traits play in the UTAUT model as indirect or intervening. The personal traits studied were the big five factors (or FFM) categorizing personality traits into: extraversion, conscientiousness,

agreeableness, neuroticism, and openness. In their research design, the personality traits were hypothesized to affect intention to adopt online stocking indirectly through UTAUT constructs in the first design model and in the second model to moderate the effect of UTAUT constructs on intention to adopt online stocking. For simplification purposes, the other moderators in the original UTAUT model were removed except for Internet experience.

The results showed that the variance explained in the intervention was very low compared to the moderating effect (60%), suggesting that personality traits play more important roles as moderators than external variables. For the first model design, results suggested that among the five different personality traits, the extraversion trait affected intention through the four key constructs of UTAUT. Openness trait, however, affected intention through the effort expectancy construct as well as facilitating condition construct. As for the second model design, the results found Internet experience and openness personality traits unexpectedly moderating the relationship between the performance expectancy construct and intention to adopt online stocking with negative effect. The trait of agreeableness with Internet experience moderates the social influence-intention relationship with positive effect as does the trait of conscientiousness with Internet experience, which moderates the social influence- intention relationship but in a negative manner. Finally, neuroticism with Internet experience was found to significantly moderate the facilitating conditions-intention relationship with positive effect. The authors thus recommended that future research may reconsider the moderators in the original UTAUT to supplement the model (Wang and Yang, 2005).

The UTAUT was adopted to explain mobile advanced services and device adoption on an individual level and mass use context. The objective of the research conducted by Carlsson et al. (2006) was to examine the factors affecting the intention to use and factors affecting the use of mobile devices/services. The effect of attitude toward using mobile device/ services and mobile device/services anxiety on behavioural intention and the use of mobile services were examined in addition to the original paths in the model.

The results showed that performance expectancy and effort expectancy had a strong direct effect on intention to use mobile devices and such an effect was weakened when attitude was added to the model, which indicated that attitude explains part of the intention to use the mobile device. Social influences also had a significant positive crude effect on intention; however, the effect was not sustained in all models examined. Anxiety did not have a direct effect on intention but rather the influence was mediated by other variables such as performance expectancy and social influences. Attitude did not have a direct effect on intention which confirms the original model assumption that with presence of effort expectancy and performance expectancy, attitude would not have a direct effect on intention.

Moreover, when analyzing the actual use of three different mobile services, intention to use had a significant positive direct influence on the use of the studied services but when the model was adjusted for the other variables (EE, PE, FC, anxiety, and attitude) the direct effect of intention disappeared. The authors argued that these results showed the central part played by these variables in the influence of behavioural intention on the use of mobile services. Using logistic regression models, the results showed, for all occurrences studied, that incorporating behavioural intention into the model would diminish the effect of independent variables on the use of mobile services (with one exception when FC is the independent variable for one of the services studied, ring tones). Thus, the assumption that PE, EE, SI, FC, anxiety and attitude affect usage through behavioural intentions is partly correct. Likewise, facilitating conditions did not have a direct influence on the use of mobile services nor an indirect effect through behavioural intention.

The authors acknowledge that the results obtained do not support in all cases the original UTAUT hypotheses. Thus, their earlier reservation on the use of the UTAUT for explaining both behaviours of intention/ usage of mobile devices and mobile services in an asynchronous manner was fairly justified. The authors argued the need for the need of modification or extension of the model used to account for the differences in the adoption behaviour of the mobile devices and services (Carlsson et al., 2006).

The UTAUT was formulated by leading researchers in the technology acceptance domain. The model was formulated based on conceptual similarities among eight dominant models in the field. According to its authors, the UTAUT is a definitive model that synthesized what is known and advances cumulative theory while retaining a parsimonious structure. Although published studies adopting this model are still scarce, this does not undervalue the power of this model compared to all other technology acceptance models.

2.9 Summary

In order to reach the adoption of e-learning stage successfully, we have to find, study, and solve all the barriers that influence the success of e-learning. Hence, the aim of this research is to investigate and study the factors that influence the adoption of e-learning in higher educational institutions in Kuwait, as an example of a developing country, and help to reduce the resistance of using e-learning. In this literature we have introduced and analyzed some factors that influence the acceptance and adoption of e-learning in general, and in Kuwait in specific as a case study.

There are many factors that can influence the adopting of e-learning; these factors could be personal, technical, or organizational. Adoption of e-learning does not depends only on the benefits of e-learning but also on other factors such as the barriers of e-learning which include the cost of implementation, the time needed to establish and use e-learning, the infrastructure and technology needed to implement e-learning, the willingness to use it among probable users, and many more.

E-learning adoption in developing countries is a huge project, with many criteria that may or may not be necessary the same as those found in the developed countries with varying degrees of intensity or importance.

3 Chapter 3: Research Methodology

3.1 Overview

Research methodology is concerned with how knowledge about the world, seen in different perspectives, is acquired, the research process/approach and the underlying ontological and epistemological assumptions. It defines action plans from the starting point of the research which is the research question, to the answers which is a set of conclusions (Yin, 2008). There are, therefore, different research approaches which also implies that certain types of research require particular approaches or rather, certain approaches will be suitable for certain types of research ((Hennink et al., 2010; Myers, 2013).

Based on the research aim and objectives, a suitable and appropriate research methodology will be selected and justified in this chapter. Therefore, this chapter focuses mainly on: (a) clarifying the most appropriate research assumptions that will meet the objectives of this research; (b) identifying the most suitable research methods; (c) creating a map of research strategy and design that is followed in this research; and (d) justifying the research methods, strategy, and data collection approaches adopted in this research.

3.2 General Research Approaches

The various elements of Information Systems (IS) are recognised as having a multi-disciplinary nature, and are tightly linked with behavioural sciences, engineering, natural sciences and mathematics. The choice of a suitable research methodology for examining IS-linked phenomenon is not simple (Galliers and Markus, 2007). It has been noted that IS is not linked with a single theoretical perspective (Orlikowski and Baroudi, 1991); thus, scholars have the ability to select the most appropriate approach from a number of different strategies and techniques. As noted by Orlikowski & Baroudi (1991), there are a number of different philosophical approaches in IS studies, such as interpretivism, positivism and critical (Figure 3.1). Such techniques focus more so on various strategies for study, as well as into examining the nature of knowledge. Positivism is a philosophy relying on measurable proof, which is separate from the observer. For instance, researchers utilise the positivist approach when seeking to test hypotheses; in contrast, however, when examining a phenomena from the viewpoint of those involved directly, an interpretivist approach is utilised (Irani et

al., 1999; Straub et al., 2004). As a philosophy, the critical approach utilises critique in order to garner insight and knowledge through emphasising conflicts and contradictions, and opposition, in modern-day society. Moreover, as has been established through prior IS research, the positivist approach has been recognised as the key epistemology in the context of IS studies, as noted by various academics in the field (Galliers and Huang, 2011; Straub et al., 2004; Walsham, 1995; Yin, 2011).

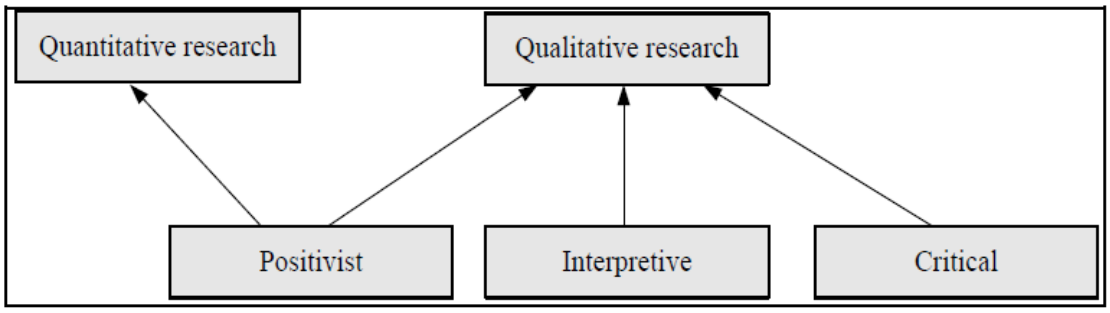


Figure 3.1 Epistemological Assumption for Qualitative and Quantitative Research

The positivist approach is an epistemology that is adopted in order to examine a theory, with the creation of hypotheses in an attempt to gain insight into and understanding of the topic in question. Such a strategy holds that the phenomenon is present beyond the human mind, as noted by Orlikowski & Baroudi (1991) and Bryman & Bell (2007). Essentially, there is much differentiation between the value and facts of research when utilising positivist epistemology (Bryman and Bell, 2007). In this regard, the beliefs of researchers are not always considered in the study result owing to the fact that the positivist epistemology strives to differentiate between reality and the researcher (Weber, 2004). In contrast, from an ontological standpoint, the beliefs, intentions and values of researchers adopting a positivist perspective are ruled out (Howe, 1988; Weber, 2004). This begins with utilising in combination the data analytical and theory constructs in an attempt to devise and generate a conceptual framework, which will, in turn, product a conceptual model that will assist in the generation of data consistencies (Bryman & Bell, 2007).

Another vein of study approach is that of interpretivism, which defines frameworks centred on gaining access to the meaning of subjects in an attempt to gain insight into the phenomena under examination (Orlikowski & Baroudi, 1991). Such an approach provides backing for the idea that the beliefs and intentions of scholars cannot be disregarded. Accordingly, interpretivism is recognised as knowledge that may be

gathered through personal life experiences (Howe, 1988; Weber, 2004). As such, more factual and objective philosophical assumptions, from a positivist perspective, are rejected when utilising an interpretivist approach (Orlikowski & Baroudi, 1991). Essentially, practically, interpretivism is inclined to garner the subjectivist meaning of a social action in regard to subsequent attainments (Orlikowski & Baroudi, 1991; Bryman & Bell, 2007).

As has been noted by Myers and Avison (1997), case studies, field experiments, formal theorem proof, laboratory experiments, simulation, and surveys geared towards statistical significance are some of the study approaches implemented within the positivist basis, whilst action research, case studies (also arguable), ethnographic researches, grounded theory and meta-analysis (a hybrid) are all implemented through an interpretivist basis.

As suggested through the work of Weber (2004), the meta-theoretical differences recognised between the interpretivist and positivist approaches are unauthentic. With this noted, Weber (2004) further highlights that the differences can be seen in regards to the selection of approaches: a researcher recognised as a positivist would utilise study approaches such as experiments, field researches and surveys; interpretivists, on the other hand, would be more likely to adopt case studies, ethnographic researches, ethnomethological researches and phenomenographic studies. With this noted, it is held by the researcher that the selection of study approaches is owing to various different elements, including the preferences for gathering particular types of insight throughout the course of the research, the social pressures linked with colleagues and advisors, and the training delivered to the researcher. With these considerations taken into account, Weber (2004) draws the conclusion that the rhetoric of positivism in contrast with interpretivism has been afforded too much consideration, and that continued speculation would provide no value but rather would only encourage prejudice in the context of study assessment. Moreover, he further suggests that the objective of the academic is to enhance knowledge in regard to particular phenomena whilst simultaneously recognising that different study approaches and data analysis approaches have associated pros and cons, depending on the phenomena-related knowledge already held.

It has been stated by Fitzgerald and Howcroft (1998) that, although at epistemological and ontological levels there may be paradigm non-commensurability, there is nevertheless the potential for some pluralism at the axiological (value) level and at

lower methodological levels. The authors further suggest that the pluralism approach enables effective models to be implemented in a study solution, and further enables the application of various approaches, as suitable. The authors highlight various researches where, from a more feasible and realistic standpoint, IS researchers have implemented the pluralist approach utilising a quantitative survey followed by a qualitative methodology in interviews, or the other way round, thus suggesting that the quantitative and qualitative approaches are not in contrast to one another but rather should be used in a complementary fashion in order to provide greater understanding and a more in-depth understanding, thus establishing stronger results and conclusions.

It has been recognised by Fidel (2008) that it is common for academics to agree that multi-approach research comprises both qualitative and quantitative elements; however, there is disagreement in regard to the way in which such elements should be linked with one another, as well as the level of integration considered necessary. Furthermore, Creswell (2013) detail that the study combines study findings, and draws conclusions through consideration to both qualitative and quantitative approaches in a single research. Moreover, academics have been implementing more than two different approaches, such as interviews, observations and surveys, when adopting a multi-approach study (Fidel, 2008). As an example, in the work of Bernardi et al. (2007), three different instruments were implemented, notably a network chart and network grid delivering data for quantitative and qualitative analyses, semi-structured interview utilising a qualitative method, and a socio-demographic questionnaire for quantitative analysis.

Furthermore, Orlikowski and Baroudi (1991) propose that IS can be considered positivist if there is evidence of hypothesis testing, quantifiable measures of variables, formal propositions, and drawing of conclusions about a phenomenon from a perspective sample. Table 3.1 explains and provides the justification behind selecting the positivist approach in this research as the classification adapted from Orlikowski and Baroudi (1991).

Table 3-1: Selecting the Positivists Approach (Orlikowski and Baroudi, 1991)

Positivists Evidence	Present Research Applicability
Formal Propositions	• Literature review maintained defined propositions of the relationship between the constructs in the proposed model.
Quantifiable Constructs	• Independent constructs (Performance Expectancy, Effort Expectancy, Social Influence, Management Awareness, Language Barriers, and Facilitating Conditions). • Dependent constructs (Behavioral Intention and Actual Use).
Hypothesis Testing	• Developed to test relationship amongst dependent and independent constructs.
Generalization	• Probability sample randomly selected from Higher Educational Institutions in Kuwait.

3.2.1 Qualitative Vs Quantitative

A number of models that are founded on the positivism-interpretivism connections are quantitative versus qualitative methods. The quantitative method is built on positivism with an ontological position, supporting the presence of only one truth, i.e. an objective reality, which is separated from human insights. From a more epistemological standpoint, the researcher and the study topic under examination are independent when considering that the researcher has the ability to analyse the phenomena without there being an effect. Quantitative studies implement empirical research with regard to the belief that there can be the reduction of all phenomena to empirical indicators, which are able to provide facts. The approaches utilised by quantitative studies include administered surveys, either written or conducted orally, with a restricted number of predetermined responses, highly structured protocols, and randomisation. It is common for the sample size utilised for a quantitative study approach to be much larger than that utilised for a qualitative study.

In contrast, the qualitative method essentially is centred on interpretivism, adopting an ontological standpoint that supports the existence of a number of different truths based on the construction of reality held by an individual. While adopting an epistemological perspective, the mind of people adopts a key role in terms of shaping

reality where outside referents recognised as creating a number of guides upon which truth can be compared. In contrast to the quantitative method, the object under examination and the researcher are interactively correlated in the sense that results are mutually established based, on the contextual situation affecting the enquiry; reality is not clear before the examination activities, or otherwise ceases to exist when not the focus of examination. Qualitative studies highlight meanings and processes, and utilise approaches that encompass focus groups, in-depth interviews and subject observation.

The various disparities recognised between the two methods reach beyond only the methodological and philosophical discussions, covering differences in the use of science language. For instance, the consideration of validity for a qualitative study is a name adopted in relation to a description or an interpretation with which one agrees; on the other hand, in regard to a quantitative study, the term would suggest that findings run parallel with the way in which things work realistically. In the same vein, phrases such as 'the findings suggest…' and 'the study has shown' make reference to a sound depiction of reality from the perspective of a quantitative paradigm, whilst they suggest an interpretation that subsequently becomes reality through the perspective of a qualitative paradigm (Sale et al., 2002).

The need to utilise a multi-approach study at a methodological level is one of the results of the incommensurability of paradigms. As has been recognised by Sale et al. (2002), the suggestion is made that, owing to the two methods not examining the same topic, there cannot be the combined use of quantitative and qualitative approaches for the purpose of cross-validation or triangulation; nevertheless, both may be combined in a complementary fashion. Supporters of such a view suggest that different approaches deliver different advantages; therefore, a combination would mean greater benefits could be garnered than what would be achieved if an approach was to be used alone.

It has been stated by Morgan (1998) that an amalgamation can be conducted on the technical term, which may be accomplished without the need to disrupt basic model assumptions. It has been highlighted further by the author that a matrix approach centred on drawing a link between quantitative and qualitative studies at a data collection level would be preferable, which should be based on two different types of decision, namely sequence and priority. The first of these is centred on which sequence is selected in the appropriate context, whilst the latter centres on

establishing which approach would be the primary and which would be the secondary. As a result of this Priority–Sequence approach, there are four choices available, as shown in Table 3.2.

Table 3-2: The Priority- Sequence Model (Morgan, 1998)

		Priority Decision	
		Principle Method: Quantitative	**Principle Method: Qualitative**
Sequence Decision	**Complementary Method: Preliminary**	**1. Qualitative Preliminary** **Purpose**: Smaller qualitative study helps guide the data collection in a principally quantitative study • Can generate hypotheses; develop content for questionnaires and interventions, etc. **Example**: use of focus groups to help develop culturally sensitive versions of technology acceptance questionnaire.	**2. Quantitative Preliminary** **Purpose**: Smaller quantitative study helps guide the data collection in a principally qualitative study • Can guide purposive sampling; establish preliminary results to pursue in depth, etc. **Example**: A survey of different managerial level of an IT intensive site for more extensive stratified data collection
	Complementary Method: Follow-up	**3. Qualitative Follow-up** **Purpose**: Smaller qualitative study helps evaluate & interpret results from a principally quantitative study • Can provide interpretation for poorly understood results**;** help explain outliers. **Example**: In-depth interviews help to explain why one organization generates higher level of employee technology satisfaction / adoption	**4. Quantitative Follow-up** **Purpose**: Smaller quantitative study helps evaluate & interpret results from a principally qualitative study • Can generalize results to different samples; test elements of emergent theories, etc. **Example**: An industry survey of different level of information technology department pursues earlier results from a case study.

The first choice of the matrix displays study designs where a smaller preliminary qualitative research delivers balancing and corresponding assistance with the aim of creating a larger qualitative research. In such researches, the key approach is quantitative; however, the application of a qualitative approach during the initial period is a way of enhancing the overall efficiency of the quantitative study that follows. One key example of such a valuable approach is the initiation of a survey study project in combination with a focus group (recognised as a qualitative approach) in an attempt to develop and validate the questionnaire contents. This sequence utilises the advantages of qualitative approaches for exploratory work,

which in turn helps to guarantee that the survey adequately covers the more valuable and important of considerations.

In the second choice, a small-scale preliminary quantitative approach is utilised through the designs in order to assistance the decisions made by a researcher in the larger qualitative study project. The more conventional example is a primary survey or field census aimed to guide the selection of data and sites, to deliver contextual insight, and to assist in focusing the analysis of large volumes of qualitative data: for example, through a preliminary survey, tabulation reveals valuable patterns of association; an in-depth qualitative analysis can also deliver a valuable understanding of the reasons behind the presence of such patterns.

Through the third choice, the study design adopts qualitative approaches that complement a mainly quantitative study; nevertheless, in this regard, the sequence differs from the first choice. Notably, the qualitative approaches act as a follow-up to the quantitative research, and commonly deliver interpretative resources for understanding the findings gathered through a quantitative study: for example, it delivers understanding into the reasoning behind the rejection of seemingly strong hypotheses in the context of survey studies.

In regard to the last choice, the study designs utilise corresponding quantitative researches in order to follow-up study projects that are mainly qualitative in nature. The quantitative approaches deliver a way of further developing what has already been learnt through the qualitative research. The most common utilisation for this particular design is the exploration of the transferability or generalisability of the conclusions drawn through qualitative studies (Morgan, 1998).

A contrasting viewpoint is held by Sieber (1973, cited in Johnson et al., 2007) in terms of the way in which the two methodologies can complement one another throughout various phases of the study process (Johnson et al., 2007). During the period of study design, quantitative data may assist in qualitative aspects, identifying members of a representative sample and accordingly highlighting outlaying observations. In this same regard, qualitative data may also assist quantitative aspects through instrumental and conceptual development. Throughout the period of data collection, quantitative data may deliver starting-point data and help to ensure bias is circumvented, whilst qualitative data may assist in enabling the assessment of quantitative data generalizability and provide fresh insight on the results. Lastly, during the phase of data analysis, qualitative data may prove very valuable in the

clarification, description, interpretation and validation of quantitative findings, as well as supporting and amending the theoretical perspective.

Mixed method approach was adopted in this research since the author used a quantitative study supported by a qualitative study. Quantitative study was utilized mainly because the obtained data are often more objective and focused on the phenomenon of interest (Bryman and Bell, 2007). The research used a strategy that emphasized and highlighted quantifiable data collection and applied a deductive approach, which embodied positivism to reflect a view of social reality as an external objective reality.

Table 3.3 shows the main elements of the research methodology. The first section starts with technology acceptance theories and models, and in particular the use of the UTAUT model that categorizes the influential factors into seven constructs (Performance Expectancy, Effort Expectancy, Social Influences, Management Awareness, Language Barriers, Facilitating Conditions and Behavioural Intention). From those constructs, the main hypotheses will be formulated as will be explained in the next chapter.

Table 3-3: The main phases of this research

Main Phase	Intervening process
Theory to Hypothesis	Deductive
Hypothesis to Data Collection	Operationalization
Data Collection to Data Analysis	Data Processing
Data Analysis to Outcomes	Interpretations
Outcomes to Back to Theory	Inductive

The process of transforming concepts (e.g. management awareness) into operational definitions is called operationalization. In this process, great attention must be placed on validity and reliability.

There are two main benefits from applying multiple methods in this research. First, different methods can be used for different research purposes, such as conducting several interviews before the pilot study in order to generate feedback on the

questionnaire items. This gives the researcher confidence that the research focuses only on the most important issues (Saunders et al., 2011). The second benefit of using multiple methods is that it enables triangulation to take place. In social science, triangulation often refers to the claim that comparing findings from two or more different research methods enables the researcher to conclude whether an aspect of a phenomenon has been accurately measured (Moran-Ellis et al., 2006). For example, in this research, the author conducted semi-structured interviews after conducting a questionnaire-based survey.

3.2.2 Inductive Vs Deductive

The two inductive and deductive techniques are wide-ranging reasoning approaches: the former is a group of approaches centred on implementing rigorously testable theories in the real world in an attempt to examine their validity, whereas deductive reasoning is more limited in nature and centred on confirming or testing hypotheses (Lancaster, 2007). Importantly, deduction is regarded as a process where researchers draw a reasoned conclusion through the use of a known fact's logical generalisation. Such an approach involves various stages, and is regarded as the foundation of a scientific approach; thus, it is referred to as the hypothetic deductive approach (Sekaran, 2006). The initial stage in this process is the creation of hypotheses and theories, with the production of ideas potentially founded on theories and hypotheses derived through other studies or from personal experiences. In addition, these may also come from the inclination to establish a solution to a problem. The second phase following theories and hypotheses generation is the operationalization of the concepts in the hypotheses or theories where such concepts may be measured through empirical observations. The following stage in the process includes establishing and making a decision between alternative approaches or techniques so as to measure the operationalized concepts; this also includes the design and selection for the study approach to be applied. The last stage in the deductive process is the stage of fabrication and discarding, which involves the investigator establishing the degree to which the hypotheses and theories selected are falsified, as well as the degree to which parts of such hypotheses and theories, if any, have not yet been falsified (Lancaster, 2005). Accordingly, deduction is centred on establishing inferences

through logical examination that claim to be conclusive. Saunders *et al.*, (2011) found the following features in deductive research:

- Scientific principles.
- Shift from theory to data.
- Explanation of causal relationships among variables.
- Collection of quantitative data.
- Application of controls in order to ensure data validity.
- Concept operationalization to ensure clarification.
- Highly-structured approach.
- Researcher remains independent of research.
- Selection of enough samples to generalize conclusions.

In contrast, inductive reasoning is a reasoning approach where the bases of an argument are recognised as supporting the conclusion but do not ensure it; otherwise stated, through inductive reasoning, investigators observe particular phenomena and, in mind of such, establish sound conclusions, subsequently achieving the logical identification of a general proposition based on the phenomena observed (Sekaran, 2003). Essentially, when comparing inductive reasoning with deductive reasoning, the former is more open-ended. Notably, the inductive approach involves various stages that may be considered in contrast with the deductive approach, moving from particular observations to more wide-ranging theories and generalisations. In the case of inductive reasoning, researchers begin with more particular measures and observations, and seek to identify patterns and consistencies, generate various hypotheses to be investigated, and lastly draw conclusions or develop theories (Trochim and Donnelly, 2005). According to Saunders *et al.*, (2011), inductive research has the following features:

- Seeks an understanding of the meanings which humans attach to events.
- A close understanding of the research context.
- The collection of qualitative data.
- A more flexible structure to permit changes as the research progresses.
- A realization that the researcher is part of the research process.
- Less concern with the need to generalize.

In the view of Teddlie and Tashakkori (2003), there is consensus amongst researchers that there should be the incorporation of both deductive confirmatory questions and inductive exploratory questions in the same research; deductive hypothesis-testing questions are those that are quantitative in nature, whereas inductive hypothesis-testing questions are qualitative. Accordingly, when utilising a mixed-methods study, quantitative or qualitative both have aspects that are deductive and inductive.

The majority of debates consider both induction and deduction, where deduction provides the way in which the argument will progress whilst induction centres on establishing consensus regarding one or more aspects of the argument. The two different types of reasoning are linked in the phase of observation: researchers may witness data patterns that cause them to generate different hypotheses or theories (induction). Accordingly, deductive and inductive reasoning are interlinked: inductive is commonly utilised to validate that a causal relationship is apparent and to further establish facts upon which deduction is founded. Casual relationships are commonly recognised through induction, or otherwise are present at the foundation of deduction (Huber and Snider, 2006).

Thus deductive approach initiates from theories and moves towards empirical data, as this research does. The inductive approach, on the contrary, initiates with empirical data and moves towards theoretical literature to build up a theory. Once the theory has been formed, the researcher may again follow a deductive approach to validate the theory, or not. Based on the above discussions, this research opted for the deductive approach to form the hypotheses based on the literature review. The hypotheses are then tested by suitable statistical tests in order to be validated. A mixed method approach was used in this research. Quantitative and qualitative methods were thus employed to empirically validate the conceptual model of this research.

3.2.3 Exploratory Vs Confirmatory

The exploratory research model and confirmatory research model are two different kinds of research. Researchers utilising confirmatory research when aiming to confirm a pre-outlined relationship, whilst exploratory research is implemented when researchers are focused on explaining and outlining potential relationships in the most general way, and accordingly enabling multivariate approaches to predict any subsequent relationships. Otherwise stated, when implementing exploratory studies,

the research is not seeking to validate any relationships outlined before the analysis; rather, the data and approach are utilised in order to define the nature of the relationships between the variables of the models (Hair et al., 2006).

In the same way, a confirmatory approach of study may be explained as one that predicts empirical findings as a way of confirming or disconfirming previously specified hypothesis, whilst throughout an exploratory study approach, evidence and theory are directly linked. Accordingly, the approaches implemented through confirmatory research design and exploratory research design stand in stark contrast with one another. Confirmatory research approaches are commonly preferred by investigators with theoretical and experimental interests; on the other hand, those adopting more of a behavioural or interpretivism standpoint commonly prefer an exploratory research approach (Gerring, 2001; Hair et al., 2006).

As recognised by Gerring (2001), the majority of studies carried out in the social science arena fall between confirmatory and exploratory ideals. However, both types of research approach have some degree of limitation. In regard to exploratory studies, these may be considered to have an inductive nature (Meyers et al., 2006), with benefits to be achieved including flexibility in the creation of hypotheses with only data needed in order to provide support for such. However, the exploratory approach means that the falsification of theory is problematic; thus, findings are commonly over-fitted with a high likelihood of bias. In contrast, confirmatory studies depend on the deductive approach and statistical suppositions (Meyers et al., 2006), with hypotheses outlined first and subsequently tested in order to provide an answer to particular questions. This suggests the benefits associated with the confirmatory analysis of delivering exact data whilst implementing well-established methods and theory. Regardless, however, the drawbacks of the confirmatory study approach can be seen in the analysis motivated by fixed and predetermined ideas, and the problems associated with establishing unexpected findings.

Furthermore, when describing the phases of the study process and approaches implemented in both types of research, Johnson and Onwuegbuzie (2004) describe the first stage of the process (research problem and questions) in the quantitative approach to be confirmatory outcome-based; the same stage in the qualitative approach, on the other hand, is exploratory process-based and descriptive of phenomena of interest. The gathering of data and the method phase for the quantitative confirmatory approach involves documents, instruments, observation,

pre-determined hypotheses and score-oriented close-ended process; the list for qualitative exploratory approaches, on the other hand, encompass audio-visual subject-established process, documents, interviews, observation, open-ended process, and text/image-centred approaches. The data analysis phase in the quantitative confirmatory approach involves approaches such as inferential statistics and descriptive statistics, whilst the qualitative exploratory approach list of approaches involves the identification of descriptive categories and themes, and seeks to determine a relationship between themes and categories, both horizontally and vertically. The final phase in the study process centres on the prediction-based interpretation and generalisation of theory for the quantitative confirmatory strategy; for the qualitative exploratory approach, focus is placed on a contextualising, personal interpretation, the posing of questions, and sense-making.

However, the application of a mixed-method study enables an exploratory inductive process to be initiated, which begins with empirical evidence of certain phenomena, and subsequently progresses to consider levels of abstraction, generalisation and theorisation, as well as the confirmatory deductive approach of the testing of theory hypotheses (Rocco et al., 2003).

As noted in the prior section, the various dichotomies or paradigms were explained, with the arguments, advantages and disadvantages, and present views in regard to various issues all discussed. The following section will present the approach implemented through the present research in consideration to the issues discussed in this section.

3.3 The Research Approach Adopted by Current Study

As highlighted above in section 3.1, data can be gathered from different sources, both primary and secondary. In primary data, collection methods have multiple protocols, such as documentation, interviews (structured, semi-structured or unstructured), observation and questionnaires (Saunders et al., 2011; Bryman and Bell, 2007). The purpose of using multi-collection methods is the further enhancement of research results (Jick, 1979; Johnson et al., 2007; Yin, 2008) and to capture an accurate portrayal of the context. The tools used for collection of data in this thesis are (a) documentation, (b) questionnaires, and (c) interviews. However, questionnaire surveying in this research is the main tool for the collection of data and drawing

conclusions and an accurate portrayal of the context of e-learning adoption in higher educational institutions in Kuwait. These will be discussed in detail in the next sections. Table 3.4 presents the research methods that are used in this study, with their respective strengths and weaknesses (Yin, 2008).

Table 3-4: Strengths and Weaknesses of the Quantitative and Qualitative Methods

Method	Strength	Weakness
Quantitative Method	• Quantitative analysis allows for the classifying of features, counting them, and constructing more complex statistical models in an attempt to explain what is observed. • Findings can be generalised to a larger population. • Allows researchers to analyse more easily because quantitative data is in numerical form. • Provides high level of accuracy. • Compare measures of dispersion. • Allows to present analysis graphically.	• Picture of the data which emerges from quantitative analysis lacks richness of detail compared with data from qualitative analysis reduced to numerical form. • Quantitative implementation slow, and needs time compared with qualitative. • Can be expensive. • Low response rates. • Not simple to implement. • Quantitative often requires computer analysis.
Qualitative Method	• The qualitative analysis allows a complete, rich and detailed description. • Can be faster when compared to quantitative methods. • Does not reduce complex human experiences to numerical form and allows a good insight into a person‘s experiences and behaviour. • Qualitative methods can be cheaper than quantitative research. • Ambiguities, which are inherent in human language, can be recognised in the analysis.	• Qualitative data is difficult to analyse and needs a high level of interpretative skills. • Good chance of bias. • Hard to draw brief conclusions from qualitative data. • Qualitative data faces difficulties in terms of comparison. • Low level of accuracy in terms of statistics.

3.3.1 Documentation

Documents could be letters, newspapers, agendas, administrative documents, emails, website information, or any written document that is related to the study. Documents are not always accurate; however, documents are very important when collecting data "because of their overall values" (Yin, 2008). Document analysis intends to review

and evaluate documents in order to develop more understanding and knowledge (Bowen, 2009). Documents are very important data collection sources, thus searches for relevant documents are important in any data collection strategy (Yin, 2008). In this research, document analysis will be used in combination with the other research methods (interviews) to support and boost evidence from the main resources (questionnaires).

3.3.2 Quantitative Approach – Questionnaire-Based Survey

In this section, the researcher discusses the quantitative approach by using a questionnaire-based survey approach. A questionnaire is an instrument for collecting data without the pre-requisite condition of having interviewer contribution to the respondent while he/she is filling the questionnaire (Blair et al., 2013). The questionnaire can be considered as the basic and most popular research instrument in quantitative studies. The structure of the questionnaires is a set of questions, which is circulated among the sample population. Selected respondents are asked to answer the questions as per their interpretations and their subjective opinions related to the questions. The approach is very flexible and thus the questionnaires are both popular and common instrument for the collection of primary data. It can be divided into unstructured and structured questions, where the structured question can have multiple choices, a scale or dichotomous questions, whereas unstructured questions are open-ended implying that the respondents answer will be in their own words (Malhotra, 2008). Questions can be both open and close-ended and are created by considering demographics of the consumers and their preferences (Moustakas, 1994). Moreover, questionnaires are easy to administer amongst a varied sample. Some other advantages of questionnaires are as listed below (Moustakas, 1994):

- Questionnaires are considered as better score over the other survey methods.
- Questionnaires are cheaper to administer. They are not dependent on the presence of the researcher.
- Approaches to collate information or collected data from questionnaire have been discovered as easier since the answers collected from questionnaires follow a similar structure.

However, in spite of these advantages, the structure of questionnaires is considered to have certain drawbacks. Firstly, the common format of answers tends to irk some participants. Secondly, in case the participants are unable to comprehend the questions, their responses may turn vague and this could make the entire data collection process futile. However, participants in the present research were given essential information to explain research goals, and objectives. Accordingly, the next sub-sections will describe the questionnaire development, questionnaire translation, questionnaire testing, and the survey protocol used in the study.

3.3.2.1 Questionnaire Development

In order to determine a suitable data would be collected for the acceptance of generalisation, a survey was used in this study to learn users' perceptions. The questionnaire was developed based on the research literature with a particular focus on the information technology adoption literature outlined in Chapter 2. 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.

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. It also made clear that participation in the study was voluntary and that one would withdraw at any stage without penalty. A five–point Likert scale was chosen to be the main instrument in the questionnaire. The questionnaire was structured in two parts with a total of 37 closed-format questions. The first part consists of multiple choice questions with single answers concerning demographic variables such as gender, age and computer experiences. The other part consists of close-ended questions, using Likert scale (1-5) that ranged from strongly disagree to strongly agree, addressing the adoption of e-learning (Appendix B).

The original questionnaire was developed in English language but a translation into Arabic (Appendix C) was conducted because some respondents did not speak English and Arabic was their first language. Therefore, the researcher provided the questionnaire in both languages, English and Arabic, to maximize the effectiveness of the data collection. Saunders et al., (2011) argue that:

> *"Translating questions and associated into another language requires care if your translated or target questionnaire is to be decoded and answered by respondents in the way you intended."*

The researcher took into consideration the accuracy, fluency and facility of use in terms of translation as ineffective, as inaccurate translation could lead to misconstrued meaning and misunderstanding (Saunders et al., 2011). This would greatly hamper valid data collection. In order to maximize validity, the researcher followed two distinct phase processes. In the first phase, the researcher translated the English version of the questionnaire into Arabic. Then, in the second stage, the Arabic version was translated back into English by an interpreter. The initial English version compared well with the translated one. Furthermore, both English and Arabic versions were checked by three persons who are professional translators in English and Arabic, one of them holding a PhD degree and the other two Masters degrees. This ensured accuracy during the translation process (Saunders et al., 2011)

After the questionnaire was designed, a pilot study was conducted using six researchers and four practitioners. This had two main aims: to improve the questions and to test respondents' comprehension and clarity before the actual survey was administered (Miles and Huberman, 1994; Saunders et al., 2011). The author received comments and suggestions that helped in improving the questionnaire and led to the modification of some questions. These comments and suggestions concerned the wording or format of some statements.

The protocol followed for the data collection was as follows: firstly, the researcher approached senior managers and directors in higher educational institutions in Kuwait. Distribution of the questionnaire made use of the researchers' wide network of professional contacts to seek permission and assistance in administering the questionnaire to the selected participants. The survey protocol utilized a convenient sampling method by selecting to distribute the questionnaire in the above mentioned organizations, yet randomly distributed the survey to those selected participants in their organizations.

The study was limited to higher educational institutions' academics and managers in Kuwait. The sample was chosen not only for practical reasons and convenience, but also because universities' academics and managers are amongst those whose opinions and perceptions will influence the adoption of e-learning in their organizations (Aldhafeeri et al., 2006). Further, when the e-learning technology is fully

implemented in the Kuwaiti higher educational institutions, this group will be its main users. Therefore, knowing their attitudes and perceptions will help to improve the adoption and the services provided by this technology.

In Kuwait, there are five universities and six colleges. Of these, there is only one public university (Kuwait University, KU) and one public college (Public Authority of Applied Education and Training, PAAET). The questionnaire was distributed manually to all the universities and PAAET since it has the largest student population. Colleges were excluded since they are relatively new and have low student population compared with other organizations. At least three different departments from each organization were contacted. A total of 350 questionnaires were distributed, and a total of 214 complete questionnaires were obtained, yielding a response rate of 61.1%.

3.3.3 Qualitative Approach – Interviews

Qualitative data will be collected for this research through field study. Data is usually collected in the form of interviews, documentation, and observation. Triangulation in data collection was to use different methods to study the same phenomenon which will provide a stronger validation of the model

3.3.3.1 Interviews

Interviews are commonly used in qualitative research to collect in-depth data. According to Benbasat et al. (1987), most of the qualitative studies relied mainly on interviews to collect data while other studies collected data by multiple means. Interviews are one of the most important sources of information in qualitative studies. There are three main forms of interview; structured, semi-structured, or unstructured (Bryman and Bell, 2007; Miles and Huberman, 1994). According to Denzin and Lincoln (2011), the three major forms of interviews are:

- Structured interview: Questions should be well prepared before starting the interview and the researcher should ask specific questions that follow the interview agenda.

- Semi-structured interview: This one is with predetermined questions asked of all respondents in the same manner and a sequence not fully specified in advance, with an open-ended format.
- Unstructured interview: Questions have not been prepared previously, which leads to informal conversation initiated and guided by the researcher.

The aim of interviews is to collect in- depth and accurate data about the phenomenon of interest from those interviewed. Interviews for this thesis will be semi-structured to gain as much information as possible from the participants being interviewed. Interviews were conducted solely with mid and high level management, and with e-learning experts who have been directly involved in e-learning practices. Informal, in-depth semi-structured open-ended interviews were the main data collection tool used for the qualitative study in this research. According to Lee and Fielding (1991), the interview is one of the most important sources in qualitative data collection. Interview is a method of collecting data in which selected participants are asked questions to find out what they do, think or feel (Collins and Hussey, 2009). According to Denzin and Lincoln (2011), interviews are considered as the primary tool of qualitative research for data collection process.

Interviews were facilitated by an interview guide that was developed during the data collection process. The conceptual model and the literature provided the frame of reference to draw relevant research questions in preparing the initial semi-structured interview guide. The interview guide was reviewed and evaluated by conducting three pilot interviews. The pilot interviews were conducted with three e-learning researchers and practitioners from different educational institutions. Based on the pilot session, the questions and interview guide were revised and modified. Questions covered in the interview guide were about general e-learning information, e-learning background, status of e-learning in higher educational institutions in Kuwait, and the problems and challenges encountered during the implementation and adoption of e-learning (Appendix D).

Interviews were conducted with relevant staff from the research site identified as having an effect on the e-learning adoption: senior managers, IS/IT managers, development teams and academics that had or would have a direct involvement in the development of e-learning. The researcher determined the number of staff to be interviewed. According to Sarantis et al. (2010), "Project managers, decision-makers

and public administration employees are all too familiar with implementation and management…" and "….as the complexity and importance of technology increase." Therefore, the targeted sample of population has to be accurate and with the ones who can give the best answers to the questions being asked. According to Creswell (2012), the samples for grounded theory methodology should be 20-30 interviews and for phenomenology 5-25; Morse (1994) suggested 30-50 interviews for grounded theory methodology and at least six for phenomenology. Moreover, fifteen is the smallest acceptable sample for all qualitative research suggested by Bertaux (1981).

As a result, the researcher began to identify the people to be interviewed within the higher educational institutions in Kuwait, where there are five universities and six colleges as explained in the previous section. Of these, there is only one public university (Kuwait University, KU) and one public college (Public Authority of Applied Education and Training, PAAET). Six higher educational institutions were chosen, representative of the biggest numbers of students and staff in Kuwait. The study was limited to higher educational institutions' academics and managers in Kuwait, where eighteen members of the chosen organizations were contacted and interviewed. The sample was chosen for convenience and practical reasons since knowing their opinions and perceptions will help to improve the services provided by this technology. Further, they were chosen because universities' academics and managers are amongst those whose attitudes and support will influence the adoption of e-learning in their organizations (Aldhafeeri et al., 2006).

Creating a qualitative study report is considered one of the most important and challenging parts within qualitative studies (Lubbe, 2004; Yin, 2008). It is very important to identify the audience and compose the study report before collecting and analysing data (Yin, 2008). With this in mind, the researcher designed Chapter 6 to present the empirical data analysis and report the output of the interviews empirical inquiry. Usually, interviews produce large amounts of data and documentation during each visit. Therefore, in order to improve the quality of presenting the research output format, the researcher aligned each question within the interview agenda. The presentation of the study's findings in Chapter 6 contributed to the quality of the research output, as it focused on the development of an effective interview agenda to investigate the research issues.

3.3.4 Data Analysis Methods Adopted in this Thesis

As the research adopts a hybrid data gathering approach, data analysis is, accordingly, driven from both quantitative and qualitative strands. The main analysis of quantitative data is done through the Structural Equation Modelling (SEM) technique, while the qualitative analysis technique applied in the research is thematic analysis. This section discusses the use of these techniques within the two phases of the research.

3.3.4.1 Structural Equation Modeling Analysis

The structural equation modelling (SEM) is a technique that seeks to represent the observed data in terms of a number of structural parameters defined by a hypothesized underlying model. SEM is a theory-based approach that has the ability to bring data and theory together (Tabachnick and Fidell, 2001). SEM is characterized by its capability for simultaneous analysis, where the relationships among multiple independent and dependent constructs are modelled simultaneously. This capability differs greatly from most first generation statistical tools such as correlation, regression and factor analysis, which can analyse only one layer of linkages between independent and dependent variables at a time (Chin and Todd, 1995). SEM has allowed social scientists to perform path analytic modelling with latent variables, which in turn has led some to describe this approach as an example of a second generation of multivariate analysis (Hair et al., 2006).

SEM not only assesses the causation among a set of dependent and independent constructs (the structural model analysis), but in the same analysis, also evaluates the loadings of measurements on their expected constructs (measurement model analysis). Thus, in SEM, factor analysis and hypotheses are tested within the same step. According to Gefen et al. (2000), the combined analysis of the measurement and the structural model enables measurement errors of the observed variables to be analysed as an integral part of the model, as well as factor analysis to be combined in one operation with the hypothesis testing. The result is a more rigorous analysis of the proposed research model and, very often, a better methodological assessment (Bollen, 1998).

Unsurprisingly, SEM tools are increasingly being used in behavioural science research for the causal modelling of complex, multivariate, data sets in which the researcher gathers multiple measures of proposed constructs (Hair et al, 2006). According to Gefen et al (2000), a casual glance at the IS literature suggests that SEM has become increasingly considered in validating instruments and testing linkages between constructs. Gefen et al (2000) reported a heavy increase in the use of SEM in well-known IS journals. On the other hand, the use of SEM analysis in the IS field has substantially increased due to several software packages that are now available to perform SEM such as LISREL, AMOS and PLS-Graph (Chin and Todd, 1995). Structural Equation Modelling is selected as the main analysis technique in the model testing phase of this research, for the following reasons:

- SEM is practically useful when one dependent variable becomes an independent variable in subsequent dependence relationship (Tabachnick and Fidell, 2001). The current research mainly looks at the antecedents and outcomes of behavioural intention within an e-learning context. Therefore, it is expected that the behavioural intention construct will act as a dependent variable affected by other constructs. On the other hand, behavioural intention will also act as an independent variable affecting actual use construct. Using a first generation statistical tool, such as regression analysis, a large number of multiple analyses would be required. This could complicate the statistical analysis of the current research.

- First generation statistical tools, such as regression analysis, cannot accommodate complex modelling which is particularly valuable when investigating users behaviours; SEM, on the other hand, is more suited for the mathematical modelling of complex processes to serve both theory and practice (Gefen et al, 2000).

- SEM has the ability to incorporate latent variables into the analysis (Tabachnick and Fidell, 2000). As the current research looks at different issues in user behaviours, it is expected that the majority of variables will be unobserved concepts that can only be approximated by measured variables.

- SEM employs confirmatory modelling strategy (Tabachnick and Fidell, 2000), while the objective of the current research is to confirm the hypothesized relationships between the model constructs.

SEM analysis is usually carried out via one of two distinct statistical techniques: Covariance analysis (employed in LISREL, EQS and AMOS), and Partial least squares (employed in PLS and PLS-Graph). These two distinct types of SEM differ in the objectives of their analyses, the statistical assumptions they are based on, and the nature of the fit statistics they produce (Gefen et al, 2000). The objective of covariance based SEM is to show the goodness to fit of the assumed research model with all its paths. On the other hand, the statistical objective of Partial least squares is to show high R2 and significant T-values, thus rejecting the null hypothesis of no-effect (Thompson et al., 1994). It is suggested that covariance based SEM is more suited for confirmatory research and theory testing, in contrast to Partial least squares which is more suitable for exploratory research and theory building (Chin, 1995). In this thesis, the LISREL software is used as the SEM analysis tool.

3.3.4.2 Thematic Analysis

There are different types of qualitative data analysis which have been used across various areas of research. The two most popular types of qualitative data analysis are content and thematic analysis (Braun and Clarke, 2006). They are both used to develop a framework for describing and organising qualitative data (Patton, 2005). In this research, the thematic analysis was used to analyse the qualitative data. Thematic analysis includes organising principles within data into themes according to their similarities (Braun and Clarke, 2006). There are a variety of steps and phases used to perform thematic analysis (Attride-Stirling, 2001; Braun and Clarke, 2006). The main steps of conducting thematic analysis applied in this research based on those of Braun and Clarke (2006):

- Getting familiar with data.
- Organizing data and generating initial themes.
- Developing and naming themes.
- Producing the report.

Getting familiar with data phase provides some background about the interviewees including: gender, age, computer experience, and English language proficiency. Although it may take many forms, the process of qualitative data analysis is non-mathematical in nature. In order to find and discover what is important, qualitative data should be divided into manageable units for synthesizing and searching for patterns (Bogdan and Biklen, 1998). The data analysis involved examining the meaning of people's words and actions because the interviews are meant to provide in-depth information about e-learning adoption and to compliment the questionnaire findings. Interviews were tape-recorded, transcribed in Arabic, and then translated into English prior to analysis.

Organizing data and generating initial themes can be carried out by using one of two methods, manual or computer-assisted method. In this thesis, the manual method was used as it allows more flexibility and also makes it easier to get the big picture from the data. To generate the themes, multiple readings of the transcripts were undertaken to allow the development of principles and constructs regarding potential themes. In line with the "Hybrid Model" of Fereday and Muir-Cochrane (2008), this research combined both the deductive and inductive approach to extract and generate themes.

- Initially, deductive approach was adopted where the themes emerge from the literature and then these themes were used to develop the questionnaire.
- Later, inductive approach was used to allow themes to emerge from the interview data.

The next phase presents the results of searching for themes, through interview quotes, to gather interview-based themes. The combined themes from both the questionnaire and the interviews are aggregated into groups. The themes were organized in corresponding with the constructs investigated in this research. As this research used thematic analysis instead of content analysis, the number of times that a construct appears in the text is not important (Buetow, 2010).

Developing analytical themes phase discusses some of the research findings derived from the analysis of the interview data. These findings emerged from the process of reading and reviewing of text segments, correlating the collected data with the constructs covered in this research. The collected data were grouped into themes

according to the relationships between the factors, which have been already identified.

3.3.5 Research Credibility

The credibility of any research is usually based on the validity and reliability of the research findings, as well as the findings' capability of providing basis for scientific generalisation. This section discusses the extent to which the validity of measures, reliability and generalizability of findings were achieved in this research. Table 3.5 demonstrates the three concepts based on Krathwohl (1993).

Table 3-5: Questions of Validity, Reliability, and Generalization (Krathwohl, 1993)

Credibility Concept	Related Questions
Validity	Does an instrument measure what is supposed to measure? This was achieved for all the studies conducted in this research (Section 4.2 for the exploratory study, Section 3.3.2.1 for the quantitative study, and Section 3.3.3.1 for the qualitative study).
Reliability	Will the measure yield the same results on different occasions (assuming no real change in what is to be measured)? This was achieved for all the studies conducted in this research (Section 4.2 for the exploratory study, Section 3.3.2.1 for the quantitative study, and Section 3.3.3.1 for the qualitative study).
Generalisability	What is the probability that patterns observed in a sample will also be present in the wider population from which the sample is drawn? This was achieved for all the studies conducted in this research (Section 4.2 for the exploratory study, Section 3.3.2.1 for the quantitative study, and Section 3.3.3.1 for the qualitative study).

One of the major advantages of the positivist approach, adopted in this research, is its capability to support research validity and reliability through the methodological pluralism concept that emphasizes the use of multiple methods of measures (Boland and Hirschheim, 1992); such an approach is also known by researchers as triangulation. Data triangulation is used in this research to overcome the risk of bias that is generally linked with any research. Triangulation's importance arises from the ethical need to confirm the validity of the procedures and overcome the possible bias by using different sources of data (Yin, 2008). Triangulation is a method used by researchers to examine and improve the reliability and validity concerns of the results

(Shulman and Kepner, 1999). According to Janesick (1999) and Denzin and Lincoln (2009), there are five types of triangulation:

- Data triangulation: involves the use of different sources of data.
- Investigator triangulation: involves multiple investigators in an investigation.
- Theory triangulation: involves using more than one theoretical perspective in the interpretation of the phenomenon.
- Methodological triangulation: involves using more than one method to gather data, such as interviews, observations, questionnaires, and documents.
- Interdisciplinary triangulation: involves the use of different locations, settings, and other key factors related to the research.

From these descriptions, Table 3.6 illustrates the implementation of triangulation used in this research to confirm the validity of the findings.

Table 3-6: Types of Triangulation Used in this Research

Organization	Type of Triangulation	Sources
Higher Educational Institutions	Data	• Documents • Questionnaires • Interviews
	Methodological	• Documentation analysis • Quantitative • Qualitative
	Interviewee Level	• Undersecretary Assistant • Departments Managers • Academics • IT Managers
	Interdisciplinary	• Management • Academic Departments • IT Department

The greatest advantages of using triangulation include creating innovative ways of understanding a phenomenon, increasing confidence in research data, revealing

unique findings, all of which give the researcher a clearer understanding of the problem under study (Thurmond, 2001; Yin, 2008).

Positivism is also renowned for its capability to provide a basis for scientific generalization. Winfield (1990) argues that what can be discovered in the positivist approach can, to a great extent, be generalized to a larger population. Generalization of research findings can as well be achieved through the sampling technique used in the research, as discussed in previous sections.

3.4 Ethical Considerations

Ethics in empirical research is very important. Researchers should protect the rights of participants and inform them about the research procedure and risks before gathering data. The participants should know that the gathered data is going to be used for the benefit of the research and will remain confidential. They should be informed that their identity will remain anonymous throughout the research. The participants should accept to participate in the research and no data should be used without their agreement.

There are standards in ethics that must be met to keep the participants privacy protected. The rights of the participants should not be harmed in any way during the research. Also, the participants should be informed that they can end the interview at any time or not answer any question. In this research, approval to collect data in the participated organizations was received from top management before collecting the data and interviewing the participants. Since questionnaires and interviews were used to collect data in this research, all the participants already knew and accepted the steps below.

- The participant accepted to participate in the research understanding that the data will be used in the research.
- The participant was informed that his/her identity will always remain anonymous.
- The participant understood his/her right to end the interview at any time or not to answer any question.

3.5 Summary

This chapter has set out to identify a suitable methodology for this thesis. It has argued that mixed methods were found to be an appropriate research approach that answers the questions highlighted by this thesis. The research methodology was designed to determine the important factors that influence the adoption of e-learning in higher educational institutions in Kuwait. Firstly, this chapter justified why the positivism approach was appropriate for this study. Then, it highlighted the design that was followed by this research in order to meet the research aim and objectives. As mentioned above, this research collected data through different techniques such as questionnaires, interviews and observations. However, the main conclusions of this thesis will have been drawn from the questionnaire. The next chapter presents the empirical findings.

4 Chapter 4: Conceptual Model of e-Learning Adoption

4.1 Overview

The aim of this chapter is to propose and develop a conceptual model for e -learning adoption. The proposed conceptual model considers variables from two sources: a) an exploratory study carried out in Kuwait to investigate the important factors that influence the adoption of e-learning in higher educational institutions; and b) the UTAUT model. The proposed conceptual model will be used as a road map for empirical data collection and analysis, and to establish a comprehensive overview of the adoption of e-learning in the context of higher educational institutions in Kuwait. The main concern is to allow the model to consider the important factors and barriers that might influence e-learning adoption.

This chapter is divided into two sections. The first section presents the exploratory study carried out to investigate the state of e-learning in Kuwait, and to discuss the important factors that influence e-learning adoption. The second section then analyses the technology adoption and acceptance factors that might explain the users' behaviour towards e-learning adoption using the UTAUT model. Finally, the conceptual model discussed in this chapter will form the basis for the empirical research discussed later in Chapters 5 and 6.

4.2 Introduction to the Exploratory Study

This chapter starts with reporting the results of the exploratory study that were conducted in Kuwait, and conclude with a conceptual model that proposed from the exploratory findings and the theoretical UTAUT model. A qualitative approach was used for this exploratory study in order to explore and investigate emerging phenomena within their context. This exploratory study aimed to explore the state of e-learning in higher educational institutions in Kuwait, and also to investigate the important factors that influence the adoption of e-learning in Kuwait. Based on Denzin and Lincoln's (2000) recommendations, the data collection was carried out through direct contact with the main higher educational institutions in Kuwait, where there are five universities and six colleges as mentioned in the previous chapter. Six higher educational institutions were chosen, representative of the biggest numbers of students and staff in Kuwait. Of these, there is only one public university (Kuwait

University, KU) and one public college (Public Authority of Applied Education and Training, PAAET).

The study was carried out with experts in the field of e-learning from higher educational institutions' academics and managers in Kuwait, where fifteen members of the chosen organizations were contacted. The sample was chosen for convenience and practical reasons as explained in the previous chapter (Chapter 3). Table 4.1 summarizes the characteristics of the interviewees participated in this study.

Table 4-1: Interviewees' Characteristics

Participated Organizations	Average Age	Gender	Computer Experience	English proficiency	Interviewee ID
KU	Forties	Male: 1 Female: 2	Intermediate: 1 Expert: 2	Expert: 3	Interviewee 1 Interviewee 2 Interviewee 3
AOU-KW	Forties	Male: 2	Intermediate: 1 Expert: 1	Beginner: 1 Expert: 1	Interviewee 4 Interviewee 5
GUST	Thirties	Male: 2 Female: 1	Intermediate: 1 Expert: 2	Intermediate: 1 Expert: 2	Interviewee 6 Interviewee 7 Interviewee 8
AUK	Thirties	Male: 1 Female: 1	Expert: 2	Expert: 2	Interviewee 9 Interviewee 10
AUM	Thirties	Male: 1 Female: 1	Intermediate: 2	Intermediate: 1 Expert: 1	Interviewee 11 Interviewee 12
PAAUT	Forties	Male: 2 Female: 1	Intermediate: 2 Expert: 1	Beginner: 1 Intermediate: 1 Expert: 1	Interviewee 13 Interviewee 14 Interviewee 15

The data collection was based on semi-structured interviews (Lacity and Janson, 1994; Myers, 1997; Walsham, 1995). Questions covered in the interview guide were laid out in three sections. The first section targeted general and historical background information and the state of e-learning in the organization. The second section sought to identify the barriers and challenges faced in implementing and adopting e-learning in the organization, focusing on identifying the most significant barriers by both management and users. The third section was about evaluating the experience of e-learning in the organization.

The interview guide was reviewed and evaluated by three e-learning practitioners and researchers. Based on their pilot evaluations and recommendations, one question was removed and couple of questions were revised and modified. The interviews were conducted over a period of 6 weeks. Most of the interviews lasted between 60 and 90 minutes. Each interview was tape recorded and transcribed. These were given back to each participant to check any differences that may have arisen and to eliminate any bias (Irani et al., 2005).

In this study, the data were analysed using thematic analysis, which was discussed earlier in the research methodology chapter (chapter 3). The qualitative information were encoded in order to identify specific themes; that is, whether some sort of patterns are identified within the information that may have some relevance to the area of research (Boyatzis, 1998). Thematic analysis steps suggested by Braun and Clarke (2006) were followed. These steps start by reading and familiarizing with the data, generating initial codes by organizing the data, searching for themes by re-reading and reviewing the data, and defining and naming these themes.

4.3 Exploratory Study Findings

The study findings offer insights into the main and influential factors that influence the adoption of e-learning in higher educational institutions in Kuwait. After summarizing the data collected and highlighting the main points, common themes were regrouped and key points and problem areas were divided into three main categories. These categories are management awareness and support, technology, and language barriers.

4.3.1 Management Awareness and Support

The main part of the study sought to identify the key factors influencing the organizations surveyed from building an environment supportive of e-learning. The vast majority of those questioned on the limitations of e-learning (12 out of 15 respondents) stated lack of management awareness and support as the main barrier. In most cases, the strategy of the management in the organization was not in line with the intention to build an e-learning culture. E-learning was seen by the management as

a waste of time process and an ineffective option for learning. One of the IT specialists said:

"Of course, a supportive management is a key factor for the acceptance of any new project including e-learning. However, the management will not support e-learning unless they are aware of the benefits it offers, and unfortunately our management is unaware of the benefits and strategic advantages of e-learning" (Interviewee 2)

This was more obvious in the replies of interviewees working in public higher educational institutions in Kuwait. In such cases, the top management are more concerned with their own image and profit, rather than the organization's image. However, in the private educational institutions, the management are more concerned with a return on investment and therefore adopting e-learning has a higher priority than in public organizations.

Since the management was the source of resistance, the lower level employees did not sincerely buy into the e-learning projects, as one of the respondents mentioned in describing the organization environment;

"There was a lack of understanding about e-learning" (Interviewee 9)

As a result, even when e-learning did deliver benefits, they were hampered by the inter-group conflict in the organizations. Other interviewees stated that the management lacked the awareness of the strategic benefits of e-learning. Such a lack of awareness was felt through the absence of clear training and learning policies aimed at developing the knowledge and skills of their staff. Some interviewees mentioned that some managers and academics were computer illiterate; thus, they were afraid of the new technology and more comfortable with the traditional methods. One of those interviews said:

"How would you convince those old people to use e-learning while they don't know how to use computers?" (Interviewee 6)

Interestingly, an academic stated that the content development in the e-learning modules was very poor and there was a limited involvement in the contents development process. As a consequence, many academics did not feel motivated to use the e-learning system and showed high levels of resistance and reluctance.

Nevertheless, the key lesson which has been derived from this factor is that the problem is not one of structure but of processes. The difficulty consists in knowing the management processes that lead to a successful adoption of e-learning. The management in the surveyed educational organizations have failed to understand the strategic advantages of using e-learning as a means to improve the learning process.

4.3.2 Technology Barriers

Technology problems came high in the list of barriers in Kuwait where they were mentioned by 10 out of 15 participants. Bandwidth and internet speed limitations were seen as significant barriers to starting and adopting e-learning in the educational organizations. Some interactive tools and multimedia simulations take far too long for the user to access and use. This was apparent in organizations that did not have an appropriate infrastructure to support the e-learning system. Furthermore, technology standards were seen by IT specialists in the organizations as an important requirement for e-learning success. One said that:

"We need to standardize the procedures, formats and systems within the organization" (Interviewee 15)

Those standards act as the base to use physical and intellectual IT assets. In addition, technical support is considered a fundamental factor to the success of any e-learning project. Some academics said that the absence of technical support would be a triggering factor for ending the e-learning project since most of the users are not familiar with e-learning technologies and procedures.

The findings also revealed that more than half of participants (8 out of 15) were worried about security and confidentiality issues. Security and confidentiality concerns are seen, mostly by academics, as one of the most important issues due to the sensitivity of information being transferred online such as assessments and grades. A system administrator said:

"Security aspects and data confidentiality are very important to accept and use e-learning by academics. However, they have less effect on the students' perceptions" (Interviewee 1)

Security issues include computer and network security, privacy and confidentiality of data. Underrating the importance of this factor could cause unauthorised access to sensitive information and loss of users' trust, which might hinder the adoption of e-learning. Surprisingly, one member of the top management was concerned with system integration where local systems are linked together and contain all different functions which would provide a full and real one stop shop. It is common for different departments to have different software and hardware that may not work together which may lead to e-learning implementation and adoption difficulties.

The technological problems mentioned by the interviewees were critical for the adoption of e-learning in Kuwait. Regardless of the fact that the necessary resources and equipment (personal computers in particular) for using e-learning were made available in most of the educational organizations surveyed, all interviewees mentioned that there was plenty of room for improvement and the intensity of barriers was strong enough to wear away the positive effects obtained from e-learning. This is mostly due to the lack of appropriate implementation of the e-learning development model mentioned earlier (Figure 2.3). The implementation model of e-learning in Kuwait was not made up of the four usual stages but only one: integration, while there was not much concern about planning, designing or evaluating the e-learning investments.

4.3.3 Language Barriers

Language barriers were found to be significant barriers, having been mentioned by 9 out of the 15 interviewees. Most of the e-learning contents used in the organizations were developed in English, and many of those organizations had a large number of employees and users who did not master the English language. Those who did not master the English language either conducted their education in non-English countries or their fields are not English specialty, hence they were reluctant to use e-learning. Language barriers were also mentioned by academics who believe that students in higher educational institutions in Kuwait will feel uncomfortable when using e-learning courses that were developed in English. Those students have normally undertaken all their previous education in Arabic, speaking English as a second language and have varying levels of English proficiency. One interviewee mentioned

that some departments in the organization were not English literate; and thus, they were afraid of the new system that does not support their language. He said:

"Departments such as Law and Arabic Literature provide their teaching and course contents in Arabic, hence the academics and students there will be reluctant to use the e-learning system if not customized and translated to Arabic" (Interviewee 4)

In the meantime, the process of developing Arabic contents and courses was very expensive and logistically complicated for many of these organizations. The Arab Human Development Report (UNDP, 2009) urged the governments and policy makers in the Arab states to encourage and reward professionals and entrepreneurs to develop content in Arabic that incorporated different aspects of the culture and tradition and publish it on the Internet. It seemed that progress was still slow in content development and the organization environment still relied on contents and courses developed in English for e-learning. The fact that language is recognized as a significant barrier in Kuwait is a reflection of the ready-to-wear approach that the participated organizations have followed with little consideration to content appropriateness or culture.

4.4 Research Model and Hypotheses

The study of adoption, and its usage, is considered to be a mature area of research within the IS discipline (Benbasat and Zmud, 1999; Hu et al., 1999; Venkatesh et al., 2003). Over the last three decades, a number of researchers have adopted, modified and validated many theoretical models in order to understand and predict technology acceptance and usage (Benbasat and Zmud, 1999; Hu et al., 1999; Venkatesh et al., 2003). The models that have been taken and used from another discipline and developed by IS researchers argue that researchers are able to choose a suitable and favoured model and ignore the contributions from alternative models. This led Venkatesh et al., (2003) to review, discuss and integrate elements across eight prominent user acceptance models (Theory of reasoned Action TRA, Theory of Planned Behaviour TPB, Diffusion of Innovation Theory DOI, Technology Acceptance Model TAM, a model combining TAM and TPB, Social Cognitive Theory SCT, Motivational Model MM, and Model of PC Utilization MPCU) that resulted in proposing the Unified Theory of Acceptance and Use of Technology

(UTAUT) (Venkatesh et al., 2003). Some of these theoretical models are considered and believed to be the most robust and significant in describing IT/IS adoption behaviour.

UTAUT is considered the most predictive model in the technology acceptance literature and is used as a benchmark (Al-Shafi and Weerakkody, 2010; AlAwadhi and Morris, 2008). The comprehensiveness, validity and reliability of the UTAUT model have encouraged the author of this study to adopt and validate it in the context of e-learning adoption in Kuwait as an example of a developing country. A number of studies have applied UTAUT to explore users‘ acceptance of technology in developed and developing countries, with many factors seen to be influential (Al-Shafi and Weerakkody, 2010; AlAwadhi and Morris, 2008; Carter and Bélanger, 2005; Carter et al., 2008). It is very important in this study to consider these factors when investigating users' intention to use e-learning in Kuwait. In addition, it is necessary for this study to consider and integrate additional factors into the UTAUT model that are specifically related to the Kuwaiti context to adopt e-learning. Based on the exploratory study discussed earlier, two factors, namely management awareness and language barriers, were added to the UTAUT model. As such, the model developed to study e-learning adoption in Kuwait needs to be tested for its robustness and to offer a further explanation of the adoption of e-learning in the Kuwaiti context.

The UTAUT model encompasses five direct behavioural intention and use behaviour determinants: performance expectancy, which may be described as 'the degree to which an individual believes that using the system will help him or her to attain gains in job performance'; effort expectancy, which may be defined as 'the degree of ease associated with the use of the system'; social influence, explained as 'the degree to which an individual perceives that important others believe he or she should use the new system'; facilitating conditions, referred to as 'the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system'; and behavioural intention, recognised as 'the person's subjective probability that he or she will perform the behaviour in question'. The UTAUT model further takes into account any moderators with the capacity to impact four additional direct determinants, namely age, experience, gender and voluntariness of use.

In this research, the model underwent changes in order to ensure fit with the research context. As can be seen through the literature and the exploratory study findings considered previously, there was the incorporation of two additional constructs within

the model, namely management awareness and language barriers (Figure 4.1). The former construct, management awareness, is concerned with managers' and decision-makers' awareness towards e-learning, and towards the benefits and strategic advantages from using e-learning in their organisations (Mungania, 2003). Management awareness was measured by the perceptions of knowing those advantages, and supporting the use of e-learning. On the other hand, the later construct, language barriers, was added since students in higher educational institutions in Kuwait have normally undertaken all their previous education in Arabic, speaking English as a second language and have varying levels of English proficiency. Since most of the e-learning courses were developed in English, most of the prospective users who did not master their English language will feel uncomfortable with e-learning (Ali and Magalhaes, 2008). Meanwhile, translating or developing these courses in Arabic was very expensive and logistically complicated.

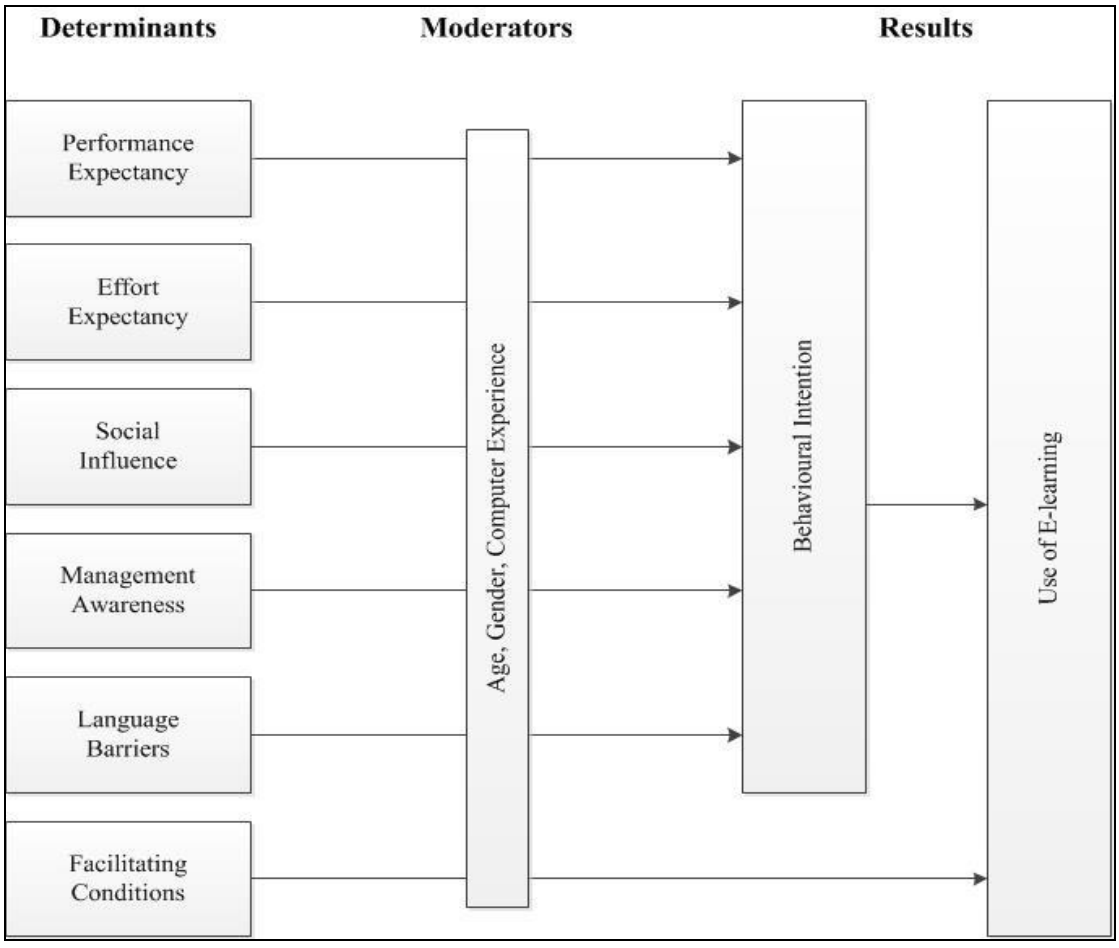


Figure 4.1 Research Conceptual Model of E-Learning Adoption

Performance expectancy was measured by the perceptions of using e-learning in terms of benefits, such as saving time, money and effort, facilitating communication with other participants, and improving the quality of learning and higher retention. Effort expectancy was measured by the perceptions of ease of use of e-learning as well as ease of learning how to use these applications. Social influence is "the degree to which people and lifestyle influence the use of a system"; whether positive or negative, it is a very important factor in many aspects of the lives of citizens and is likely to be influential (Venkatesh et al., 2003). Since this study examines the adoption of e-learning in higher educational institutions in Kuwait, this construct was measured by the perception of how people and peers influence the use of e-learning. Facilitating conditions was measured by the perception of being able to access required resources, as well as to obtain knowledge and the necessary support needed to use e-learning. It is also influenced by the perception of the technology fitting into the lifestyle of the user. The measurement of behavioural intention included the intention, prediction and planned use of e-learning.

The amended model also considered the influence of the moderators that were thought would influence the direct determinants: gender, computer experience and age. Research on gender differences indicates that men tend to be more highly task-oriented than women (Venkatesh et al., 2003; Venkatesh et al., 2012). Performance expectancy which focuses on task accomplishment is likely to be more significant to men, whereas effort expectancy is more significant to women. Akman et al. (2005) and Venkatesh et al. (2003) mentioned that women tend to be more sensitive to others' opinions and, therefore, found that peer influence was more significant to women in the intention to use technology. Experience, in the UTAUT model, was changed to computer experience. Several studies have shown that computer experience influences perceived usefulness and perceived ease of use which, in consequence, affects people's actual use or intention to use specific systems. Therefore, e-learning is more likely to be used by experienced computer users. Thus, computer experience needed to be considered in order to explain users' effort and performance expectancy. Further, use of the system could be expected to increase as users of technology find help and support in using the system effective. Computer experience was measured by the time spent on using the computer. Age was used to indicate the years in the profession, and to help in addressing the attitude of the

participants. Voluntariness of use was deleted because e-learning is highly voluntary in Kuwait.

This study proposes the model which posits that performance expectancy, effort expectancy, social influence, management awareness, and language barriers all have a significant impact on behavioural intention to use e-learning. Furthermore, behavioural intention and facilitating conditions both have a significant influence on adoption behaviour of e-learning. The following subsections provide descriptions of each construct, along with the theoretical justification for including them in the conceptual model and the associated hypotheses. Furthermore, Figure 4.1 proposes the conceptual model for e-learning adoption in a Kuwaiti context. It also shows the relationship between the independent constructs and the dependent constructs.

4.4.1 Performance Expectancy

Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance (Venkatesh et al., 2003). The performance expectancy constructs are drawn from different information systems models as follows: perceived usefulness (TAM and combined TAM-TPB), extrinsic motivation (MM), job-fit (MPCU), relative advantage (DOI), and outcome expectancy (SCT). In addition, it is important to point out that performance expectancy is the strongest predictor of behavioural intention towards technology, and remains significant to all points of measurement in both voluntary and mandatory settings (Venkatesh et al., 2003). In this research context, performance expectancy refers to the degree to which an individual believes that using e-learning systems will help him or her to attain gains in personal performance. This construct is measured by different variables or constructs: perceived usefulness, relative advantage, outcome expectations, benefits, and availability. The motivation for the researcher to use performance expectancy in this study is influenced by the fact that the performance expectancy found is a strong predictor of behavioural intention toward technologies (AlAwadhi and Morris, 2008; Davis et al., 1989; Venkatesh et al., 2003). Further, a number of adoption factors have been identified in the technology acceptance context (Al-Shafi and Weerakkody, 2010; AlAwadhi and Morris, 2008; Carter and Bélanger, 2005) precisely in the initial stage of e-learning development.

In this study, performance expectancy is measured by the perceptions of using e-learning systems in terms of benefits, such as saving time, money and effort, facilitating communication with others, improving the quality of learning and by providing users with an equal basis on which to carry out their tasks (Al-Shafi et al., 2009; AlAwadhi and Morris, 2008). Performance expectancy was found to be a strong predictor of intention to use IT according to previous acceptance studies (Chang et al., 2007; Davis et al., 1989; Taylor and Todd, 1995b; Venkatesh and Davis, 2000; Venkatesh et al., 2003).

To explain performance expectancy toward intention to use e-learning, the author proposes the following hypothesis:

H1. *There would be a positive relationship between performance expectancy and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.*

4.4.2 Effort Expectancy

Effort expectancy is defined as the degree of ease associated with the use of a system (Venkatesh et al., 2003). Effort expectancy constructs have been drawn from different information systems models including perceived ease of use (TAM/TAM2), complexity (MPCU) and ease of use (IDT) (Kijsanayotin et al., 2009). According to Venkatesh et al. (2003), there are similarities between these constructs in accordance with their definitions and measurement scales.

In addition, effort expectancy construct is a strong predictor of behavioural intention towards technologies in early stages and can become non-significant after periods of extended and sustained usage (Venkatesh et al., 2003). In this research context, effort expectancy refers to the degree of ease associated with use of e-learning systems. Many scholars (Agarwal and Prasad, 2007; Al-Gahtani et al., 2007; Chang et al., 2007; Davis et al., 1989; Gupta et al., 2008; Moore and Benbasat, 1991; Schaper and Pervan, 2007; Thompson et al., 1991) found that effort expectancy has a significant influence on intention to use behaviour. In contrast, Chau and Hu (2002), argue that effort expectancy does not have significant influence to intention to use behaviour.

Previous studies have reported that effort expectancy is always associated with age (Morris and Venkatesh, 2000; Venkatesh et al., 2003). In other words, age difference

has been found to be the strongest predictor of acceptance and usage. Younger age groups have more positive attitudes towards using technology compared to other older age groups, and it can be claimed that the adoption of e-learning is dependent on age. As a result, effort expectancy will be more significant towards behaviour intention of e-learning if it is moderated by demographic variables (such as age, computer experience and gender). Consequently, the following hypothesis is proposed.

H2: *There would be a positive relationship between effort expectancy and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.*

4.4.3 Social Influence

Social influence is defined as the degree to which an individual is influenced by the beliefs of others that he or she should use the new system (Venkatesh et al., 2003). Irrespective of whether this influence is positive or negative, it is a very important factor in many aspects of the lives of users and is likely to be influential (Venkatesh et al., 2003). People like family members, friends and colleagues may influence the user's decision to use e-learning (Irani et al., 2009; Tan and Teo, 2000). Venkatesh et al., (2003) integrated subjective norms in TRA, TAM2, and TPB, social factors in MPCU, and image in IDT into the social influence factor.

The relationship between social influence and adoption has been widely investigated in the information systems field (Fulk and Boyd, 1991; Fulk et al., 1987; Venkatesh and Brown, 2001). Venkatesh and Brown (2001) also found that social influence of friends and families is a strong factor affecting the adoption of new technologies. According to Venkatesh and Brown (2001), social influence is exerted through messages and signals that help to form perceptions of a product or activity. Many scholars in information systems have researched the impact that social influence, represented by friends, family, colleagues and peers, has on behaviour adoption at the individual level (Irani et al., 2009; Tan and Teo, 2000). Indeed, the findings of many scholars like Rogers (1995), Taylor and Todd (1995a), Lu et al. (2005) and Pavlou and Fygenson (2006) suggest that social influences are an important determinant of behaviour. This research assumes that if e-learning adopters are influenced with

positive messages by their social networks, they are more likely to have a strong behavioural intention to adopt the e-learning systems. Thus, the researcher proposes the following hypothesis:

H3. *There would be a positive relationship between social influence and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.*

4.4.4 Facilitating Conditions

Facilitating conditions are the degree to which an individual believes that an organisational and technical infrastructure exists to support the system (Venkatesh et al., 2003). Facilitating conditions in the UTAUT comprises of perceived behavioural control, facilitating conditions, and compatibility from the TPB, TAM, MPCU, and IDT models (Ajzen, 1985; 1991; Taylor and Todd, 1995; Triandis, 1979; Venkatesh et al., 2003).

Researchers in the field of technology studies (e.g. Venkatesh et al., 2003; Moore and Benbasat, 1991; Thompson et al., 1991; Chang et al., 2007; Taylor and Todd, 1995; Chau and Hu, 2002; Venkatesh and Speier, 1999) found that the facilitating conditions construct has a positive effect on innovation use. They also found that it is a significant predictor of the technology use. In contrast, they found that it did not predict intention to use IT when both constructs, performance expectancy and effort expectancy, are used in the same model (ibid).

Furthermore, the literature indicates that technology usage is always hindered by demographic variables issues (Belanger and Carter, 2006; Loges and Jung, 2001; Selwyn, 2004). For example, in the categorisation of age, older people are often classified as non-adopters of technology; thus, any e-learning strategy will need to consider how technology facilitates the needs of older people so that they are not excluded from receiving the benefits offered by e-learning. Older people were observed to require a greater deal of assistance and support in technology usage (Selwyn, 2004; Venkatesh et al., 2003; Morris and Venkatesh, 2000; Thompson et al., 1991). In addition, technology usage can also be affected by a user‘s education level, and computer experiences (AlAwadhi and Morris, 2008; Selwyn, 2004; Venkatesh

and Speier, 1999). However, in the scope of e-learning, computer experience of the users will be more valuable than users' education level

Within this study, facilitating conditions was measured by the perception of being able to access required resources, as well as to obtain knowledge and the necessary support needed to use e-learning systems. It is also influenced by the age, computer experience, and the perception of the technology fitting into the lifestyle of the user. To explain facilitating conditions toward behaviour of e-learning use, the researcher proposes the following hypothesis:

H4. *There would be a positive relationship between facilitating conditions and e-learning use behaviour, and this relationship would be moderated by gender, age and computer experience.*

4.4.5 Management Awareness

Interest in e-learning has grown rapidly in recent years. Many organizations have begun taking steps along the e-learning journey. The question many of them face is whether their learners are on the journey with them. Organizations cannot rely on the technology itself to drive interest, acceptance, or satisfaction with e-learning. If the manager does not appropriately support the learner and the e-learning opportunity, the learner tends not to see the value of the course, which could lead to lower start rates. Likewise, it is increasingly important for managers to encourage and show appreciation of peer support. Without peer support, e-learning technologies may pose more difficulties than benefits, which further leads to lower acceptance levels (Mungania, 2003).

It is important for all managers and decision-makers in the organizations and educational institutions to know the benefits, facilities and services of e-learning and their importance in relation to their specific tasks. However, according to Tusubira and Mulira (2004), there tends to be some vague knowledge about new technologies such as e-learning, some interpreting them as simply advanced technologies that require a lot of money and very advanced skills. They are not appreciated as a means of creating efficiency and cost-effectiveness. Lack of awareness, however, goes along with attitude. A positive attitude towards those technologies is widely recognized as a necessary condition for their effective implementation and adoption (Albirini, 2006;

Woodrow, 1992). Involvement of the organization's management in the implementation process is a key to addressing awareness and attitude problem. Formally organized awareness programmes, visits to similar organizations and institutions where success has occurred, and short trainings can contribute to raise the awareness and change the attitude of managers and decision-makers towards e-learning adoption.

Furthermore, to facilitate the acceptance and adoption of e-learning, organizations and decision makers should either adapt the existing e-learning standards and guidelines or develop their own standards and guidelines that are appropriate for their rules and context. Also, organizations and decision makers should set policies for establishing e-learning together with an enforcement procedure e.g. make the usage of e-learning systems a compulsory requirement. Incentives or rewards should be given to those who use those systems (Abanumy and Mayhew, 2007). Therefore, the following hypothesis was proposed:

H5. *There would be a positive relationship between management awareness and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.*

4.4.6 Language Barriers

Language barriers are more significant in developing countries than in developed countries due to their relatively poor innovation and inability to produce their own systems and contents in their own languages. For example, according to Yoshi Mikami (an Internet author) the situation in Japan in this respect has improved significantly in the ten years preceding the turn of the millennium (Crystal, 2001), with about 90% of Web pages in Japan being already in Japanese. This information speaks to the fact that some locally produced Web sites have managed to accumulate enough good information in the local language for its native users. Hence, Japanese now appears to be dominant for Japanese Internet users.

Although English is the most popular language in e-learning platforms, most Arabic users have difficulties in understanding and speaking English. The e-learning literature showed that only a few Arabic e-learning platforms exist. For this reason we find the creation of a platform that would aid Arabic users is highly necessary.

However, there are some problems associated with the making of an Arabic platform; these relate to language as well as technology. Furthermore, in the e-learning literature, "content is king" and unless there is generous and suitable content in any local language, people will use resources in other languages that have managed to offer significant information.

Language barriers were added in this research since students in higher educational institutions in Kuwait have normally undertaken all their previous education in Arabic, speaking English as a second language and have varying levels of English proficiency. Since most of the e-learning courses were developed in English, most of the prospective users who did not master their English language will feel uncomfortable with e-learning (Ali & Magalhaes, 2008). Meanwhile, translating or developing these courses in Arabic would be very expensive and logistically complicated.

Higher educational institutions that provide or intend to provide e-learning systems need to be aware of the ways a language barrier may impact their user's experience with e-learning. The language barriers are complicated by the fact that many organizations and providers have no effective strategy prepared to deal with a language barrier when it exists. In higher educational institutions, when a language barrier exists and no effective strategy to bridge the barrier is implemented, those higher educational institutions may pay an economic price through the increased use of costly projects such as hiring professional to translate or develop courses in Arabic and providing more professionals and tutors to provide help when needed.

To explain the effect of language barriers toward intention to use e-learning, the author proposes the following hypothesis:

H6. *There would be a negative relationship between language barriers and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.*

4.4.7 Behavioural Intentions

Behavioural intention is defined as a customer's intention to adopt and make use of a certain tool in the future (Ajzen, 1988; 1991; Taylor and Todd, 1995; Venkatesh and Brown, 2001; Venkatesh et al., 2003). According to Irani et al., (2009), the majority

of technology adoption research has utilized behaviour intention to predict technology adoption. Also, Ajzen (1991) suggests that behavioural intention is counted to have a direct influence on adoption. The measurement of behavioural intention includes the intention and predicted use of e-learning. To explain behavioural intention toward behaviour of e -learning use, the researcher proposes the following hypothesis:

H7. *There would be a positive relationship between behavioural intention and e-learning use behaviour.*

4.4.8 Gender

Jackson and Scott (2002) defined gender as a hierarchical separation between women and men embedded in both social institutions and social practices. Burgess (1986) argues that gender can be employed as a descriptive variable as well as an explanatory variable. A number of researchers (Anderson and Young, 1999; Choudrie and Lee, 2004; Gefen and Straub, 1997; Morris and Venkatesh, 2000; Venkatesh et al., 2000) have investigated the role of gender in the adoption and usage of technology. Previous studies have revealed that gender has an important effect and role when considering technology adoption and usage in organisational context. Venkatesh et al., (2000) for instance showed that male users use a computer more than females, thus highlighting gender as one of the most important variables when adopting technology.

According to Morris and Venkatesh (2000) gender differences have been shown to exist in technology-adoption contexts. Furthermore, gender significantly moderates the influence of the determinants on behaviour intention. For example, Venkatesh et al. (2003) found that the effect of perceived usefulness on behaviour intention was moderated by gender. In this research the author followed the proposition of Dwivedi & Weerakkody (2007) and Yuen & Ma (2002) that gender (from a social point of view) can be considered as a moderator that affects the relationships between the independent and dependant variables to explain the differences between adopters and non-adopters of e-learning.

4.4.9 Age

In the adoption of new systems, age groups and demographic variables become vital conflict factors that hinder the effort of e-learning systems. Prior studies of technology adoption have found age differences significantly contribute either directly or indirectly to users' behaviour toward technology (Venkatesh et al., 2003; Morris and Venkatesh, 2000). For example, research on age differences indicates that the younger age groups tend to be more willing to adopt computer usage than the older age groups (Venkatesh et al., 2000). Furthermore, this influence is shown to be more significant for younger workers compared to older workers in accordance with attitudes toward using the technology (Morris and Venkatesh, 2000).

The study conducted by Gilbert et al. (2004) uses age to evaluate technology acceptance and indicated that older people are less willing to adopt those new technologies than the younger age group. Moreover, in a Saudi Arabian study, conducted by Al-Ghaith et al. (2010), it is suggested the younger age group (15-25 years old) showed more willingness to adopt new technologies than the older one. Again, in this research the author followed Dwivedi and Lal (2007) proposition that age as a social variable can be considered as an influential moderator to explain the differences between adopters and non-adopters of technology, in this case e-learning.

4.4.10 Computer Experience

During the stages of information system development, computer experience has been thought of as a key factor in further adoption and acceptance of any new technology including e-learning (Jaruwachirathanakul and Fink, 2005; Karjaluoto et al., 2002; Schumacher and Morahan-Martin, 2001; Trocchia and Janda, 2000). It widely assumed that participation by users of the information revolution has been fragmented by their attitudes towards computer usage (Karjaluoto et al,. 2002; Trocchia and Janda 2000). For example, researchers generally consider people with good computer experiences to have more favourable attitudes towards e-learning adoption than people with lower levels of computer experiences. Computer experiences have always aided the nature of e-learning. For example, in respect of adoption, those users with less computer experience have been found to be less participative in e-learning and have negative attitudes towards usage. Although limited, research on computer

experience and e- learning adoption has encouraged this study to add the computer experience in order to measure the impact of computer experience on e-learning adoption. On the other hand, the computer experience variable is important because of the nature of e-learning systems in helping to provide services in distant locations. Thus, the skills associated with computers become critical for further adoption.

The following Table 4.2 summarizes the proposed research hypotheses that have been discussed in the abovementioned sections about the main factors that influence the adoption of e-learning in higher educational organizations in Kuwait:

4-2: Summary of Research Hypotheses

H No.	Proposed Hypothesis
H1	There would be a positive relationship between performance expectancy and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.
H2	There would be a positive relationship between effort expectancy and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.
H3	There would be a positive relationship between social influence and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.
H4	There would be a positive relationship between management awareness and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.
H5	There would be a negative relationship between language barriers and behavioural intentions to use e-learning, and this relationship would be moderated by gender, age and computer experience.
H6	There would be a positive relationship between facilitating conditions and e-learning use behaviour, and this relationship would be moderated by gender, age and computer experience.
H7	There would be a positive relationship between behavioural intention and e-learning use behaviour.

4.5 Summary

This chapter aimed to clarify the factors and challenges surrounding e-learning adoption using literature, theoretical, and empirical contexts. Accordingly, this chapter launched the research model and hypotheses of e-learning adoption in Kuwait, and explained the importance of each construct in e-learning adoption. Five constructs are defined to influence the intention to use e-learning (performance expectance, effort expectance, social influence, management awareness and language barriers) and two constructs facilitating conditions and behavioural intention were proposed to influence usage behaviour. Also, this research considers demographic variables which further impact on the adoption of e-learning. These are gender, age, and computer experience.

Hypotheses were therefore generated to explore the important factors that affect the adoption of e-learning in higher educational institutions in Kuwait. This chapter has developed a conceptual model based on literature and empirical findings to understand the different factors that influence adoption of e-learning. It also has considered the output of the exploratory study and investigated the influence of management awareness and language barriers on the adoption and usage of e-learning. The conceptual model discussed in this chapter will form the basis for the empirical research discussed later in Chapters 5 and 6.

To the researcher's knowledge, no previous studies exist that have attempted to adopt the UTAUT model in the context of e-learning in Kuwait or any Arabic country. The proposed model could be used as a frame of reference by higher educational institutions that seek to implement and adopt e-learning systems. Furthermore, it could serve as a decision-making tool to support educational institutions and other organizations in their efforts to implement and diffuse e-learning in the context of teaching and training.

5 Chapter 5: Quantitative Data Analysis

5.1 Overview

The previous chapter offered a detailed description of the development of the research model. Chapter 3 provided a discussion of the philosophical assumptions of the data collection and analysis methods that were followed in this research. This chapter presents and discusses the results that were obtained from the questionnaire-based survey that was conducted to investigate the factors that influence the adoption of e-learning in higher educational institutions in Kuwait. The data collected were interpreted and analysed to understand the adoption of e-learning in the context of Kuwait. As stated in Chapter 3, different assessments were used to test the research model reliability and validity.

In order to accomplish the purpose of this chapter, it was constructed as follows. The next section provides a descriptive statistics of the data collected from the questionnaires that were distributed to the participants in higher educational institutions in Kuwait. Then, structural equation modelling was used to assess the adequacy of the model through measurement model analysis and structural model analysis. Followed by the analysis of the impact of the demographics and the proposed hypotheses were tested. Finally, the chapter concludes by discussing the implications of the survey's findings, and summarising the main results and findings of this analysis.

5.2 Introduction to the Survey Empirical Study

From the discussion in Chapter 3 (Research Methodology) which established that this research is using a mixed method to fulfil the aim of the research, it was considered that a quantitative approach, through the utilisation of a questionnaire-based survey, would be the main data collection method. Statements and constructs applicable to the research were incorporated in line with Venkatesh *et al*. (2003), which were accordingly amended in order to fit the research context. In line with other studies, similar items were grouped together in order to achieve a greater degree of model validity and reliability. Furthermore, additional statements related to the constructs were incorporated in order to achieve a higher level of understanding and clarity for the participants.

A format of closed questions was adopted in order to restrict individual answers to multiple-choice answers, such as through the use of a 5-point Likert scale spanning 1 to 5, anchored with 'strongly disagree' through to 'strongly agree', respectively, as well as by permitting only 'yes' or 'no' answers (Field, 2009; Yin, 2008). Such an approach facilitated the grouping and statistical analysis of data (Leung, 2001) with the application of SPSS V18 and LISREL 8.54. Owing to the fact that answers may be impacted by the order in which the questions are posed, there was careful planning in addressing these questions along with an introduction that describes the purpose of the study, who the researchers represent, and the value of their answers. Moreover, the design of the questions was done in such a way to ensure a lack of ambiguity, ease of completion, and shortness (Liinamaa *et al*., 2004).

Following the design of the questionnaire, a pilot study, comprising eight researchers and twelve practitioners from the IT field, was carried out with the aim of testing the questionnaire. It was held that this was an important stage as it would ensure the questions could be improved where necessary and would also test the overall clarity and comprehension of respondents (Yin, 2008). The pilot testing resulted in one question being removed from the questionnaire and another two being amended. Owing to the fact that, while English was used for the questionnaire, it was to be administered in Kuwait, the questionnaire needed to be translated into Arabic, which is the primary language spoken in the country.

The study was limited to higher educational institutions' academics and managers in Kuwait. The sample was selected mindful of both convenience and practicality, as well as the fact that the managers and academics of universities are considered to hold views and opinions most relevant to the application of e-learning in their organisations (Aldhafeeri *et al*., 2006). Moreover, upon the full implementation of the e-learning technology in Kuwaiti higher educational institutions, such individuals will form its main users. Thus, establishing their views and attitudes will help to enhance the adoption of e-learning and to improve the services delivered through such a technology.

As explained in the methodology chapter, in Kuwait there are five universities and six colleges. The questionnaire was distributed manually across all the universities and the PAAET since it has the largest student population. At least three different departments from each organisation were contacted. A total of 350 questionnaires

were distributed, and a total of 214 complete questionnaires were obtained, yielding a response rate of 61.1%.

5.3 Descriptive Statistics

The first stage of the data analysis consisted of checking the responses and tagging them with a unique number, and generating descriptive statistics (percentage and tables). Descriptive data analysis provides the reader with an appreciation of the actual numbers and values, and hence the scale that researchers are dealing with (Dwivedi and Weerakkody, 2007).

5.3.1 Response Rate and Respondents Profile

The questionnaire-based survey was distributed as described previously in chapter 4 between the periods of January 2012 and May 2012. A total of 350 questionnaires were distributed, and a total of 214 complete questionnaires were obtained, yielding a response rate of 61.1% which is acceptable in the IS field (Baruch and Holtom, 2008). The demographic background of the respondents will be addressed in detail as follows. In terms of respondents' gender, about two thirds (61.2%) of respondents were male and one third (38.8%) female (Table 5.1 and Figure 5.1).

Table 5-1: Gender of Respondents

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	131	61.2	61.2	61.2
	female	83	38.8	38.8	100.0
	Total	214	100.0	100.0	

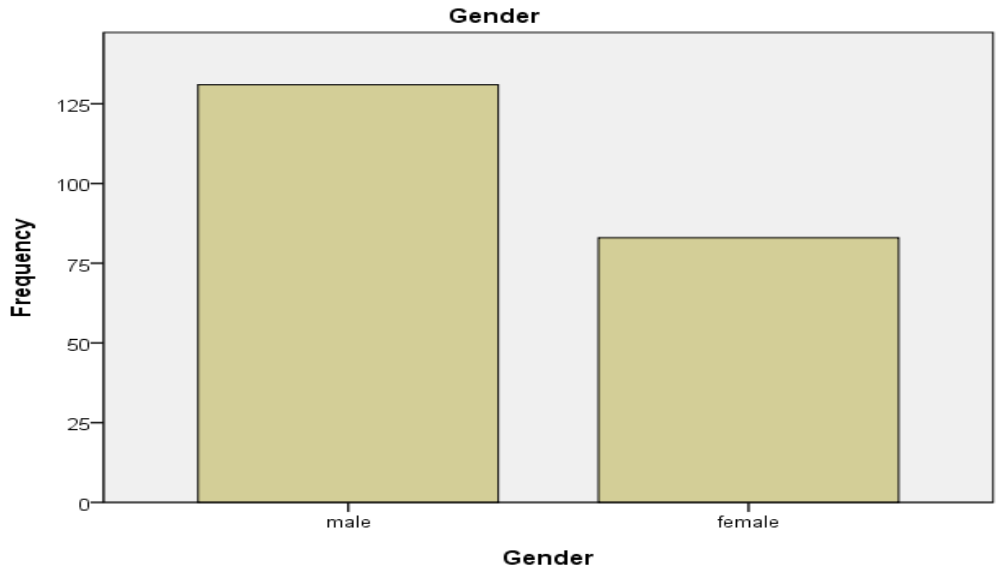


Figure 5.1: Gender of Respondents

When examining the computer experience of the respondents, the majority of respondents (84.6%) have computer experience of more than 10 years, whilst 10.7% have computer experience between 5 and 10 years, and around 2.8% have computer experience between 2 and 5 years. Finally, those with little computer experience (between 1 and 2 years) constituted around 1.9% of the total respondents (Table 5.2 and Figure 5.2).

Table 5-2:Computer Experience of Respondents

Computer Experience		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	between 1 - 2 years	4	1.9	1.9	1.9
	between 2 - 5 years	6	2.8	2.8	4.7
	between 5 - 10 years	23	10.7	10.7	15.4
	more than 10 years	181	84.6	84.6	100.0
	Total	214	100.0	100.0	

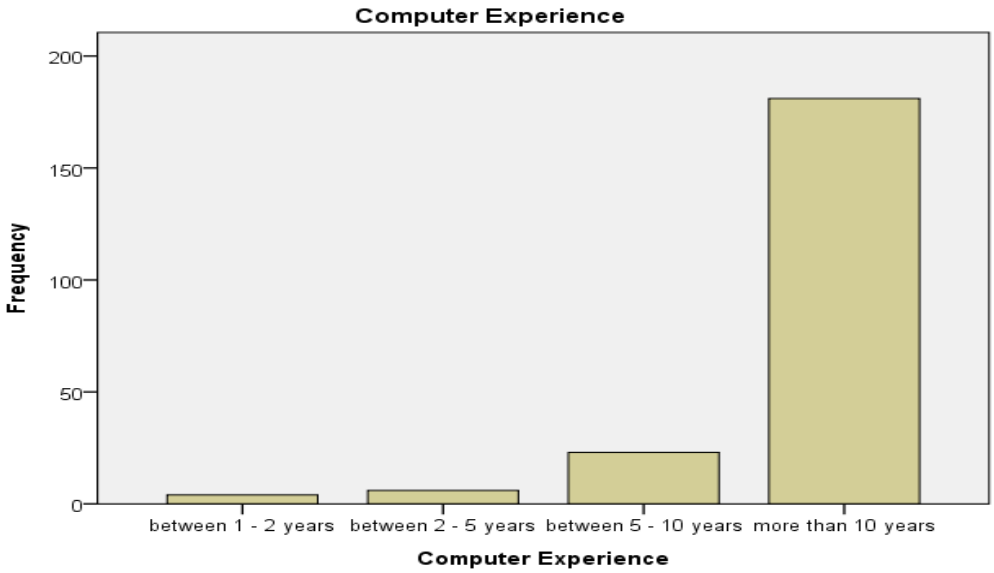


Figure 5.2: Computer Experience of Respondents

As far as age is concerned, the results revealed that the majority of respondents (43.5%) were found in the age group of 35-45 years, followed by the age group of more than 55 years constituting around 23.4%. This was followed by the age group of 45-55 (15.4%), and then the age group of 25-35 with 14% of the total respondents. Finally, young academics and managers who are younger than 25 years old represented only 3.7% of total respondents (Table 5.3 and Figure 5.3).

Table 5-3: Age of Respondents

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 25years	8	3.7	3.7	3.7
	between 25 -35 years	30	14.0	14.0	17.8
	between 35 -45 years	93	43.5	43.5	61.2
	between 45 - 55 years	33	15.4	15.4	76.6
	more than 55 years	50	23.4	23.4	100.0
	Total	214	100.0	100.0	

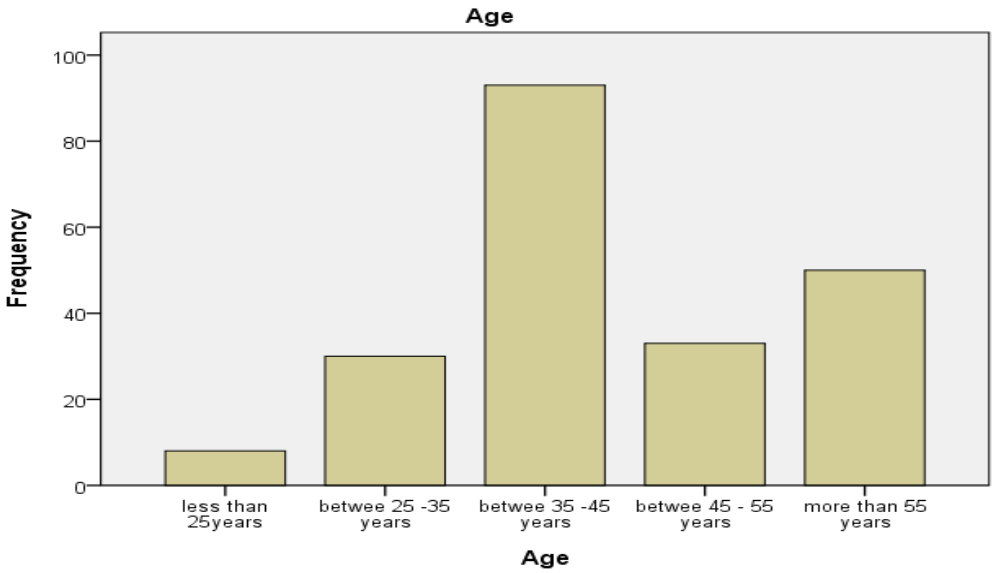


Figure 5.3: Age of Respondents

5.4 Assessment of the adequacy of the model

Although Venkatesh et al. (2003) have already validated their acceptance instrument; due to the new application context of the UTAUT we considered it appropriate to recheck the reliability and validity of the instrument. Reliability tests were conducted to measure the internal consistency on behavioural intention to adopt e-learning in the Kuwaiti context. Constructs that were examined in relation to behavioural intention are: performance expectancy, effort expectancy, social influence, management awareness and language barriers. This study followed the two-step procedure suggested by Anderson and Gerbing (1988). Firstly, we examined the measurement model to measure convergent and discriminant validity. We then examined the structural model to investigate the strength and direction of the relationships among the theoretical constructs.

5.4.1 Analysis of the measurement model

Convergent validity of the instrument (Fornell and Larcker, 1981) was assessed by factor loadings (>0.50), reliability (acceptable if Cronbach's $\alpha > 0.70$), composite reliability (>0.70) and variance extracted (>0.50).

Following the recommendation made by Anderson (2006), a factor loading value greater than 0.50 was considered to be very significant. All the factor loading values

in confirmatory factor analysis of the measurement model were greater than 0.76 (Table 5.4).

Table 5-4: Rotated Factor Matrix

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
PE1	.774					
PE2	.863					
PE3	.885					
PE4	.769					
EE1		.812				
EE2		.900				
EE3		.770				
EE4		.874				
SI1			.784			
SI2			.806			
SI3			.795			
SI4			.774			
MA8				.946		
MA9				.953		
MA10				.886		
MA14				.876		
LB11					.977	
LB12					.979	
BI1						.827
BI2						.857
BI3						.867
BI4						.786

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Cronbach's alpha coefficient values were chosen to examine the internal consistency of the collected data (Hinton et al., 2004). Hinton et al. (2004) suggest four different points of reliability: excellent (0.90 and above), high (0.70-0.90), high moderate (0.50-0.70), and low (0.50 and below). The outlined Cronbach's Alpha values in Table 5.5 indicate that the model constructs are internally consistent. According to the below results (Table 5.5), three constructs present excellent reliability in predicting

behavioural intention to use e-learning, while the other three constructs present very high reliability in predicting the behavioural intention. The Cronbach's values indicated that each construct exhibited strong internal reliability.

Table 5-5: Construct validity and reliability components

Construct	Cronbach's Alpha	Composite Reliability	Extracted Variance
Performance Expectancy	**88.8%**	**89.20%**	**73.50%**
Effort Expectancy	**88.9%**	**90.20%**	**75.43%**
Social Influence	**86.6%**	**87.90%**	**69.88%**
Management Awareness	**93.4%**	**93.90%**	**81.54%**
Language Barriers	**96.9%**	**87.25%**	**76.73%**
Behaviour Intention	**90.7%**	**90.92%**	**77.16%**

Following the recommendation made by Anderson (2006), a factor loading greater than 0.50 was considered to be very significant. All the factor loading values in confirmatory factor analysis of the measurement model were greater than 0.76. In addition, the composite reliabilities of constructs ranged from 0.87 to 0.94. The interpretation of the composite reliability is similar to that of Cronbach's alpha, except that it also takes into account the actual factor loadings rather than assuming that each item is equally weighted in the composite load determination. The average extracted variances, ranging from 0.69 to 0.82, were all above the recommended 0.50 level (Anderson et al., 2006), which means that more than one-half of the variance observed in the items was accounted for by their hypothesised factors.

Discriminant validity assesses the extent to which a concept and its indicators differ from another concept and its indicators (Bagozzi et al., 1991). According to Grover (1998) the inter-construct correlations should be lower than the square root of the average variance extracted of each construct. This analysis showed that the inter-construct correlations were lower than the square root of the average variance extracted of the individual factors, thus confirming discriminant validity (Table 5.6).

In summary, the measurement model demonstrated adequate reliability, convergent validity and discriminant validity.

Table 5-6: Correlation matrices and discriminant validity

Construct	Performance	Effort	Social	Management	Language	Intention
Performance	**0.86**					
Effort	0.38	**0.87**				
Social	0.57	0.46	**0.84**			
Management	-0.07	0.27	0.03	**0.91**		
Language	-0.16	-0.19	-0.17	0.08	**0.89**	
Intention	0.53	0.55	0.51	0.22	-0.13	**0.88**
Diagonal elements (in bold) are square roots of average variance extracted						

5.4.2 Analysis of the structural model

Absolute fit indices are direct measures of how well the proposed model reproduces the observed data or fits the sample data. Examples of such indices include root mean square residual (RMSR) which measures the average of the residuals between individual observed and estimated covariance and variance terms. Lower values of root mean square residual (RMSR) and standardized root mean square residual (SRMSR) represent better fit and higher values represent worse fit (Hair et al., 2006). A value less than 0.05 is widely considered good fit and below .08 adequate fit. In the literature one will find rules of thumb setting the cut off at < 0.10, 0.09, 0.08, and even 0.05, depending on the authority cited (Hatcher and O'Rourke, 2014). Another fit index that is commonly cited is root mean square error of approximation (RMSEA), which takes into account the error of approximation in the population (how well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available?). It explicitly tries to correct for both model complexity and sample size by including each in its computation. Values

less than 0.05 indicate good fit and values as high as .08 represent reasonable errors of approximation in the population (Byrne, 2001).

Incremental or comparative fit indices differ from absolute fit indices in that they assess how well a specified model fits relative to some alternative baseline model (most commonly referred to as null model), which assumes all observed variables are uncorrelated. This class of fit indices represents the improvement in the in fit by the specification of related multi-item constructs. An example of the incremental fit indices is comparative fit index (CFI) which ranges between 0-1 with higher values indicating better fit. Values less than .90 are not usually associated with a model that fits well (Byrne, 2001; Hair et al., 2006).

Parsimony fit indices are designed specifically to provide information about which model among a set of competing models is best, taking into consideration the model fit relative to its complexity. Thus, a parsimony fit measure can be improved either by a better fit or a simpler model (fewer estimated parameters paths). The most widely applied parsimony fit index is non-normed fit index (NNFI) which is derived from the incremental normed fit index (NFI). NFI and NNFI with relatively high values represent relatively better fit (Hair et al., 2006).

The structural equation modelling technique was utilized to test the proposed model using LISREL 8.54. LISREL software prints more than 20 different goodness-of-fit measures and the choice of which to report is a matter of dispute among methodologists. Hair at al. (2006) recommends reporting absolute index such as RMSEA and an incremental index such as CFI. When comparing model of varying complexity, they recommend adding NFI measure. Others report GFI or more recently, SRMR, instead. Following these guides, Common model-fit measures were used to assess the model's overall goodness of fit, including Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Incremental Fit Index (IFI), Relative Fit Index (RFI), Critical N (CN), Root Mean Square Residual (RMSR), Standardized RMR (SRMSR), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), and Comparative Fit Index (CFI). the model fit indices for the total sample in the CFA run produced the indices indicated in table 5.7.

Table 5-7: Model-fit indices for the structural model

Goodness-of-fit Indices	Recommended Value	Structural Model
GFI	≥ 0.80	0.86
AGFI	≥ 0.80	0.80
NFI	≥ 0.90	0.93
CFI	≥ 0.90	0.95
RMR	≤ 0.10	0.071
SRMR	≤ 0.10	0.065
NNFI	≥ 0.90	0.93
IFI	≥ 0.90	0.95
RFI	≥ 0.90	0.90

As shown in Table 5.7, all the model-fit indices exceeded their respective common acceptance levels suggested by previous research (Anderson et al., 2006; Sharma, 1995; Wang et al., 2008), thus demonstrating that the proposed model obtained a fairly adequate model fit.

5.4.3 Confirmation of the Proposed Hypotheses

In order to test the relationships between the constructs, the general structural model was used and hypothesis testing was conducted within the context of the structural model. This simplified the interpretation of the results because a relationship between two constructs could be examined while holding constant of all other constructs in the model. Hypothesis tests were conducted by confirming the presence of a statistically significant relationship in the predicted direction. Moreover, Table 5.8 and Figure 5.4 provide statistical summary of the hypothesis test results.

5-8: Verification of Proposed Hypotheses

Path	Path Coefficient	Standard Error	t-value	P-value	Significance
Performance → Intention	32%	0.08	4.12	0.000	S
Effort → Intention	31%	0.07	4.08	0.000	S
Social → Intention	19%	0.08	2.42	0.008	S
Management → Intention	16%	0.05	2.55	0.005	S
Language → Intention	0.00	0.05	0.06	0.476	NS

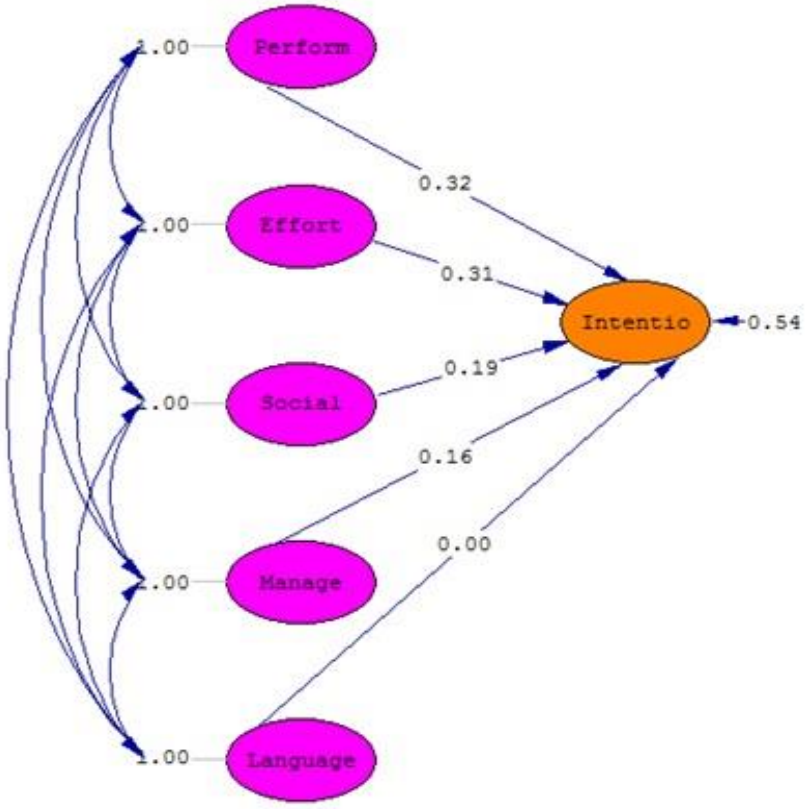


Figure 5.4: Model Testing Results

5.5 Logistic Regression for E-learning Usage Behaviour

Logistic regression was used to examine the relationship between the facilitating conditions and behavioural intention constructs, and e-learning usage behaviour. The dependent construct that measures the e -learning usage is categorical in nature and represented by (Yes) and (No). Number (1) represents yes, when the particular respondent has used e –learning before and (0) to represent no, if they have not used

e-learning. The logistic regression model was chosen because it was found to be most appropriate for estimating the factors which influence e- learning use behaviour. Also, the logistic regression analysis had been chosen as a result of the limitation of the Linear probability model which might predict fitted values beyond the [0,1] range (Greene, 2003).

A logistic regression analysis was conducted with e -learning usage behaviour as the dependent variable and facilitating conditions and behavioural intention as the predictor variables. The full model was considered to be significantly reliable (X2 = 23.820, p < .001) (Table 5.9). This model accounted for between 10.5% and 15.2% of the variance in e-learning usage (Table 5.10), with 77.1% of the e-learning users deemed to have used e-learning (Table 5.11).

Table 5-9: Logistic Regression: Omnibus Tests of Model Coefficients

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	23.820	7	.001
	Block	23.820	7	.001
	Model	23.820	7	.001

Table 5-10: Logistic Regression: Model Summary

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	228.207[a]	.105	.152

Table 5-11: Logistic Regression: Classification Table

Classification Table

Observed			Predicted		
			E-learning Usage		Percentage Correct
			.00	1.00	
Step 1	Have you used e-learning before	.00	17	42	28.8
		1.00	7	148	95.5
	Overall Percentage				77.1

Table 5.12 describes the coefficient, Wald statistics, associated degrees of freedom and probability values for all of the predictor variables. This Table 5.12 shows that Facilitating Conditions did not reliably predict e-learning usage. The coefficients values expose that an increase in the Facilitating Conditions score is associated with an increase in the odds of e –learning usage by a factor of (0.979) (see Table 5.12). Also, Table 5.12 shows that Behavioural Intention to use e-learning reliably predicted e-learning usage. The coefficients values expose an increase in Behavioural Intention score is associated with an increase in the odds of e-learning usage by a factor of 2.06.

Table 5-12: Logistic Regression: Variables in the Equation

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Intention	.723	.201	12.885	1	.000	2.060
	Facilitating	-.022	.213	.010	1	.919	.979
	Constant	-2.807	.887	10.021	1	.002	.060

5.6 Survey Findings Discussion

The revised UTAUT empirical test showed the ability to identify constructs influencing the intention to utilise e-learning in addition to the relation between the predictors and the results.

Performance expectancy influence in regard to the behavioural intentions of participants was seen to be significant, which suggests that participants have come to acknowledge the advantages to be garnered through the use of technology and Internet, with individuals linking such advantages to e-learning system utilisation. The strong and clearly significant influence of performance expectancy on the intentions of individuals implies that university management and academics are inclined to focus on e-learning systems' usefulness; in particular, on what can be garnered through the utilisation of such technology. Accordingly, in the context of accepting and adopting e-learning systems, it is critical that the benefits and advantages are highlighted and demonstrated to the target users.

The concept of effort expectancy has been described by Venkatesh et al. (2003) as the extent of system ease of use, with the results from this research highlighting further support for the belief that the factor of effort expectancy has a significant positive effect on the behavioural intention of individuals to utilise e-learning. This implies that behavioural intention, in this context, may be hindered when there is the presence of restrictions (Venkatesh et al., 2003). The significant influence of effort expectancy further implies that individuals are willing to utilise e-learning systems when there is a great degree of ease of use, which facilitates them in investing greater amounts of time into other tasks and activities. Although the importance of effort expectancy decreases over the period of usage (Agarwal and Prasad, 2007; Davis et al., 1989; Thompson et al., 1994; Thompson and Hlgglns, 1991), the findings emphasise that there is a key need to ensure ease of use across e-learning systems, which is a particularly relevant concern when considering that target users will vary in terms of their educational backgrounds and experience with the Internet.

The intention of users to accept or reject technology is believed to be influenced by social influence (Dwivedi et al., 2009; Rogers, 1995; Venkatesh and Brown, 2001; Venkatesh et al., 2003). The findings from this research have illustrated social influence as being a statistically significant and a key factor in the perceived behavioural intention of individuals to utilise e-learning systems. Moreover, research and studies conducted previously further note that peer and social influences are more important and valuable when individuals have limited technological experience; thus, it is critical that organizations and their management direct efforts towards ensuring users have a pleasing experience during the use of e-learning owing to the fact that the influence of such an experience could span to peers, family and other individuals. Furthermore, awareness initiatives and advertising campaigns also have the power to influence individuals into adopting and accepting e-learning.

The relationship between management awareness and respondents' behavioural intentions was significant in this study. Organisations cannot count on the technology itself to drive attention, adoption or satisfaction with e-learning (Mungania, 2003). If the management does not properly support the users and the e-learning opportunity, users tend not to see the value and benefits of e-learning, which could lower the start rates. Similarly, it is increasingly important for managers to encourage and show appreciation of peer support. Without management support, e-learning systems may pose more difficulties than benefits, which further leads to lower acceptance levels

(Sife et al., 2007). This influence of management awareness and support suggests that managers and decision-makers support would play a major part in the adoption of e-learning.

The analysis also showed that, as expected, the language barriers factor has a negative influence on behavioural intentions. However, the language barriers factor was not significant since most of the participants in this study were academics and senior managers whose English proficiency was excellent. Hence, they would not face any problem when using e-learning systems that do not support their language (Arabic). On the other hand, the literature also showed that language barriers can affect negatively the adoption of e-learning when taking into consideration other users, such as students and employees (Al-Gahtani, 2003; Ali and Magalhaes, 2008; Timmins, 2002); therefore, organisations and managements are recommended to plan an effective strategy to overcome language barriers when developing and implementing e-learning systems (UNDP, 2009).

5.7 Hypotheses Testing and Conceptual Model Revision

The following table 5.13 summarizes the hypotheses that were suggested and offered in Chapter 4. Additionally, it shows whether these research hypotheses are supported or not. Table 5.13 demonstrates a total of seven research hypotheses that were tested to examine whether the independent variables significantly explained the dependent variables. Five of the seven research hypotheses were supported by the data and it means that most of the independent variables significantly clarified and explained the intention to adopt e-learning.

Table 5-13: Summary of research hypotheses

HN	Research Hypotheses	Results
H1	There would be a positive relationship between performance expectancy and behavioral intentions to use e-learning.	Supported
H2	There would be a positive relationship between effort expectancy and behavioral intentions to use e-learning.	Supported

H3	There would be a positive relationship between social influence and behavioral intentions to use e-learning.	Supported
H4	There would be a positive relationship between management awareness and behavioral intentions to use e-learning.	Supported
H5	There would be a negative relationship between language barriers and behavioral intentions to use e-learning.	Not supported
H6	There would be a positive relationship between facilitating conditions and e-learning use behavior.	Not supported
H7	There would be a positive relationship between behavioral intention and e-learning use behavior.	Supported

Further, Figure 5.5 shows the research conceptual model resulted from the validation of factors that affected the e-learning adoption in Kuwait.

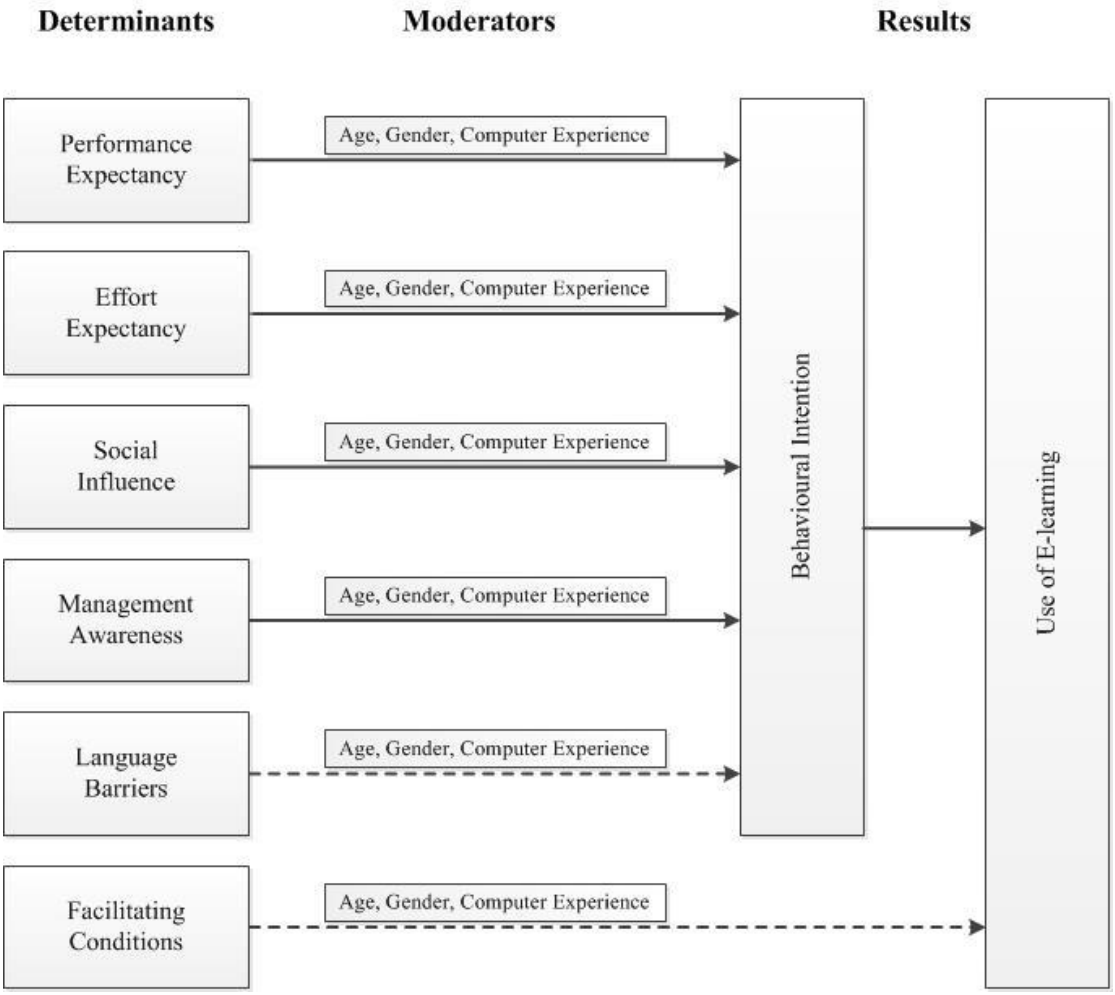
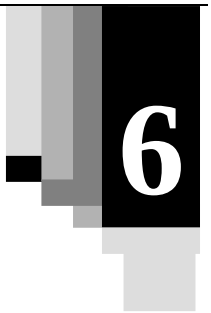


Figure 5.5: Revised conceptual model of e-learning adoption

5.8 Summary

The study reported in this paper has identified a number of factors influencing the adoption and application of e-learning in the specific context of Kuwait, as a key example of a developing country, with the use of a modified version of the UTAUT model. The results showed that management awareness, social influence, effort expectancy, and performance expectancy were all important and significant in the adoption of e-learning within the country. Moreover, the language barriers were found to have a negative but insignificant influence. To some degree, the results are in line with those garnered through other research and studies carried out in the past in developed countries (Carter and Belanger, 2004; Carter and Bélanger, 2005; Hung et al., 2006). Nevertheless, the results further emphasised that management awareness and social influence factors were key in the adoption of e-learning in the context of Kuwait, with such factors regarded as irrelevant and relevant respectively in the case of developed countries.



6 Chapter 6: Qualitative Data Analysis

6.1 Overview

The questionnaire-based survey analysis (quantitative analysis) in the previous chapter (Chapter 5) illuminates the relationships between the conceptual model constructs: Performance Expectancy, Effort Expectancy, Social Influence, Management Awareness, Language Barriers, Facilitating Conditions, Behavioural Intention, and Actual Use. The main findings from the survey analysis supported most of the hypothesized relationships between these constructs. However, the survey analysis, which is a quantitative in nature, does not offer in-depth explanations and answers for the 'Why' questions. As a result, this chapter aims to further explore and study the relationships between the conceptual model's constructs by conducting interviews and the use of qualitative analysis. The qualitative analysis was used to confirm the previous findings of this research, and also to give explanations to the unexpected findings. This chapter presents the qualitative analysis and findings using thematic analysis methods explained in Chapter 3 (Research Methodology).

The chapter starts with identifying and explaining the themes developed. Then, the interviews will be analyzed based on the themes developed. Subsequently, the findings from the interviews will be discussed, and identifying the important and influential factors of the adoption of e-learning. Thereafter, this chapter will conclude by presenting a final revised conceptual model based on all the findings of this research.

6.2 Themes Arisen from the Qualitative Study

A field study was conducted in higher educational institutions in Kuwait between Sep 2012 and Nov 2012, where semi-structured interviews were carried out with academics and members of the respective managements. The interview questions (Appendix D) were developed and facilitated by an interview guide that was drawn from the conceptual model and the literature. A pilot study was conducted to review and evaluate the interview questions. Three researchers and practitioners in the field of e-learning were contacted and interviewed. Based on their feedback, the interview questions were revised and modified.

Six higher educational institutions were chosen, representative of the biggest numbers of students and staff in Kuwait. These are Kuwait University (KU), Arab Open

University, Kuwait Branch (AOU-KW), Gulf University for Science and Technology (GUST), American University of Kuwait (AUK), American University of Middle East (AUM), and Public Authority of Applied Education and Training (PAAET). Of these, there are only two public organizations; Kuwait University (KU) and the Public Authority of Applied Education and Training (PAAET).

The study was limited to academics and managers from these organizations. The sample was chosen for convenience and practical reasons since knowing their opinions and perceptions will help to improve the services provided by this technology. Further, they were chosen because universities' academics and managers are amongst those whose attitudes and support will influence the adoption of e-learning in their organizations (Aldhafeeri et al., 2006). Eighteen members of the chosen organizations were contacted and interviewed. Demographic characteristics of the interviewees are presented in Table 6.1.

Table 6-1: Demographic Characteristics of the Interviewees

Participated Organizations	Average Age	Gender	Computer Experience	English proficiency	Interviewee ID
KU	Forties	Male: 2 Female: 2	Intermediate: 1 Expert: 3	Expert: 4	Interviewee 1 Interviewee 2 Interviewee 3 Interviewee 4
AOU-KW	Forties	Male: 2 Female: 1	Intermediate: 2 Expert: 1	Beginner: 1 Intermediate: 1 Expert: 1	Interviewee 5 Interviewee 6 Interviewee 7
GUST	Forties	Male: 2 Female: 1	Expert: 3	Expert: 3	Interviewee 8 Interviewee 9 Interviewee 10
AUK	Thirties	Male: 1 Female: 1	Expert: 2	Expert: 2	Interviewee 11 Interviewee 12
AUM	Thirties	Male: 1 Female: 1	Intermediate: 1 Expert: 1	Intermediate: 1 Expert: 1	Interviewee 13 Interviewee 14
PAAUT	Forties	Male: 2 Female: 2	Intermediate: 2 Expert: 2	Beginner: 1 Intermediate: 1 Expert: 2	Interviewee 15 Interviewee 16 Interviewee 17 Interviewee 18

Thematic analysis was used in this research to analyse the qualitative data. Thematic analysis is a qualitative analytic method to identify, analyse and report patterns or

themes within data according to their similarities (Braun and Clarke, 2006). As outlined in Chapter 3, the main steps of conducting thematic analysis applied in this research are based on those of Braun and Clarke (2006):

- Getting familiar with data.
- Organizing data and generating initial themes.
- Developing and naming themes.
- Producing the report.

There were six themes developed in this qualitative study (Table 6.2):

Performance Expectancy theme: This theme highlights the perceptions and thoughts of the interviewees on the benefits will be achieved from the use of -learning. The benefits include improving performance, increasing efficiency, and saving time and costs.

Effort Expectancy theme: This theme highlights the perceptions and thoughts of the interviewees on the effort they would put to use e-learning, and how easy it would be to use the e-learning system. Moreover, it will also describe their perceptions about how they would interact with the e-learning system.

Social Influence theme: This theme highlights the perceptions and thoughts of the interviewees on the influence of other people on their intentions to use e-learning, and the support they would receive from their organizations to use such systems.

Management Awareness theme: This theme highlights the perceptions and thoughts of the interviewees on the awareness of the managers and decision makers in their organizations of the benefits and strategic advantages from using e-learning, and whether they support the use of e-learning in the organization.

Language Barriers theme: This theme highlights the perceptions and thoughts of the interviewees on the problems they would encounter if the e-learning system does not support Arabic, and their intentions to use an e-learning system that was developed in English.

Facilitating Conditions theme: This theme highlights the perceptions and thoughts of the interviewees on the readiness of their organizations to build an e-learning system, and if their organizations have the infrastructure and resources for such a system.

Table 6-2: Qualitative Study Themes

Themes	Characteristics
Performance Expectancy	Usefulness, improving performance, better retention, relative advantage.
Effort Expectancy	Easiness of use, saving effort and time for other tasks, complexity.
Social Influence	Subjective norm, Family and colleagues influence, organization influence
Management Awareness	Management awareness, support, and commitment.
Language Barriers	System use problems, communication difficulties, content development and translation.
Facilitating Conditions	Compatibility and availability, infrastructure, technical support, training.

6.2.1 Performance Expectancy

Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance (Venkatesh et al., 2003). In the context of this research, performance expectancy refers to the degree to which an individual believes that using e-learning systems will be useful and help him or her to attain gains in personal performance. Also, performance expectancy is measured by the perceptions of using e-learning systems in terms of benefits, such as saving time and money, facilitating communication with others, improving the quality of learning and by providing users with an equal basis on which to carry out their tasks (AlAwadhi and Morris, 2009; Al-Shafi et al., 2009). According to previous research and studies, performance expectancy was found to be a strong predictor of intention to use IT (AlAwadhi and Morris, 2009; Venkatesh et al., 2003; Chang et al., 2007; Taylor and Todd, 1995; Venkatesh and Davis, 2000). In addition, the findings from the survey in the previous chapter also indicated that most of the participants think using e-learning would improve their job performance and accomplish their tasks faster.

In the interviews, the interviewees were asked about the benefits and potential advantages from using e-learning in their organizations. In cases where e-learning already exists, most of the interviewees said that e-learning systems were useful in many respects. Further, in cases where e-learning systems do not exist, the interviewees expected that e-learning systems would be useful and would benefit the educational process. Many of the interviewees complimented the use of technology in education and encouraged the utilization of the revolutionized communication technologies. For example, an IT manager said:

> *"The current communication technology can improve the education process in our organization, but unfortunately we do not have an e-learning system implemented in our organization. We have the resources and technologies required to implement an effective e-learning system, but the problem is in the management and decision makers' side."* (Interviewee 18)

In addition, when comparing the traditional learning systems and e-learning systems, most of the interviewees agreed that e-learning systems would save their time and effort. This is because e-learning systems would enable them to post any teaching documents or information online rather than wait until the lecture time and distribute the documents or make announcements. One academic in the field of engineering who is currently using e-learning said:

> *"Before e-learning was implemented in our organization, I had to distribute my notes during the lectures or office hours for those who were absent. Now, I put all the documents and announcements related to my units online and know that all my students will get all the information even those who were absent. Also, now I can communicate with my students and post any missing documents or answer their enquiries from anywhere and at anytime rather than waiting for the lecture time."* (Interviewee 10)

Another academic who did not utilise e-learning because his organization had not implemented e-learning yet said:

> *"I think e-learning would be very useful in the registration and grading processes. The registration department always get busy during the*

> *registration period, and even busier when submitting the final grades."* (Interviewee 13)

A supportive comment to the above view came from a manager in the registration department who said:

> *"E-learning undoubtedly will reduce the load on our department. It will allow academics to submit their grades online without the need to come to our department physically. This will reduce the load on my employees and consequently will minimise the human errors in my department."* (Interviewee 1)

According to some interviewees, the usefulness of e-learning should be applied in the learning and training purposes throughout the country. They believe the full implementation of e-learning would cope with the rapid development of technology, and thus improve the education sector and the development of the country. One of the academics said:

> *"I believe that when the e-learning system is fully implemented, it will lead to a qualitative education in the higher educational institutions in Kuwait."* (Interviewee 12)

Most of the interviewees agreed that e-learning systems would provide many benefits to the students, academics, managements, and education institutions in Kuwait. However, e-learning needs to be fully implemented and adopted to gain the benefits promised.

On the other hand, concerns about the usability and functionality of e-learning systems were raised by some of the interviewees, especially those who did not have a good computer experience. They would consider an e-learning system as a waste of time and money if it was ultimately unusable or non-functional since it would not meet the users' expectations and needs. Other concerns about the procedures needed to use these systems were also raised. One manager said:

> *"If the users believe that the e-learning system would not improve their performance or would require many and complicated procedures to use it, then they will not use it."* (Interviewee 4)

6.2.2 Effort Expectancy

Effort expectancy is defined as the degree of ease associated with the use of a system (Venkatesh et al., 2003). In this research context, effort expectancy refers to the degree of ease related with the use and learning how to use e-learning systems. In addition, effort expectancy is measured by the perceptions of using e-learning systems in terms of benefits, such as saving effort and time, easiness to use and learning how to use, and by providing users with a better basis on which to carry out their tasks (AlAwadhi and Morris, 2009; Alfadhli, 2011; Al-Shafi et al., 2009). Previous research and studies indicated that effort expectancy was a good predictor of intention to use e-learning (AlAwadhi and Morris, 2008; Umrani-Khan and Iyer, 2009). Also, the findings from the survey discussed previously in Chapter 5 show that most of the participants would use e-learning systems if they were easy to use and saved their effort and time.

The interviewees were asked about their perceptions on using e-learning systems and the effort they would put to use such systems. Interestingly, there were two diametrically different views: the first was that it will be difficult to use e-learning systems, with the second being that it will be easy to use e-learning systems. The first view came from interviewees who are technology illiterate or who have little computer experience. They think it would be difficult to use e-learning and they have to put a lot of effort to learn how to use it. One academic from the School of Law said:

> *"I never used an e-learning system before and I don't think it will be easy to use one. I don't need it in my field and I prefer to teach my modules in the traditional way since it allows me to interact with my students and answer any enquiries instantly."* (Interviewee 15)

The head of Social Studies Department said:

> *"I know it is important to use e-learning when it is implemented in our organization, but I think it would require a lot of effort to learn how to use such systems. However, in my department I don't think e-learning would be as necessary as in other departments such as engineering and computer science."* (Interviewee 3)

The second view came from interviewees who have a good computer experience and are familiar with such systems. They think e-learning systems would be easy to learn and use. Some of those interviewees had already used e-learning in their studying careers or were using it in their working careers. An academic in the field of education said:

> *"E-learning is becoming a necessity in the education process and we all have to use it. I don't think it will be difficult to use such systems but we need to implement them first."* (Interviewee 6)

Furthermore, an IT manager in an organization that had already implemented an e-learning system said:

> *"We are proud to say that we already implemented e-learning in our organization, and it is running smoothly. We had some difficulties in the beginning but everything is great now and the users are happy with our system."* (Interviewee 8)

In addition, the interviewees were asked about their perceptions on how to use and interact with e-learning systems and if they understand the purpose of such systems. Most of the interviewees said that they know what e-learning is and they would use it properly when it becomes available. The head of College of Technology Studies said:

> *"We know what is e-learning and we know how to use such systems, but unfortunately we don't have these systems implemented in our organization. Surely e-learning will improve the education process in our organization and will help us to improve our skills and save our time."* (Interviewee 17)

However, an academic was unoptimistic about e-learning said:

> *"I heard about e-learning and I think I know what is it for, but I am not sure I will use it when it is available since I don't know how to use it and I don't have the time to learn how to use it."* (Interviewee 5)

6.2.3 Social Influence

Social influence is defined as the degree to which an individual is influenced by the beliefs of others that he or she should use the new system (Venkatesh et al., 2003). In the context of this research, social influence refers to the degree to which an individual believes that people like family members, friends and colleagues may influence their decision to use e-learning irrespective of whether this influence is positive or negative. Also, this research assumes that if e-learning adopters are influenced with positive messages by their social networks, they are more likely to have a strong behavioural intention to adopt the e-learning systems (AlAwadhi and Morris, 2009; Al-Shafi et al., 2009; Alfadhli, 2011). According to previous research and studies like Rogers (1995), Taylor and Todd (1995), Lu et al., (2005) and Pavlou and Fygenson (2006), they all suggest that social influences are an important determinant of behaviour. Moreover, they further note that social influences are more important and valuable when individuals have limited technological experience. In addition, the findings from the survey in the previous chapter also illustrated social influence as being a statistically significant and a key factor in the perceived behavioural intention of individuals to utilise e-learning systems.

The interviewees were asked about the influence of other people on their decision to use e-learning or their intention to use e-learning when it would be available. Those with little computer experience said that they may be influenced if other's experiences with e-learning were good. One academic said:

> *"I might use e-learning if my colleagues used it and they say it is a good system."* (Interviewee 15)

Another academic said:

> *"I will not spend a lot of effort to learn how to use e-learning until someone I trust used it or many different people have tried it and recommended it for me."* (Interviewee 5)

However, people with good computer experience had more self confidence and were less influenced by other recommendations or experiences with e-learning. An academic from the Computer Science Department said:

> *"Although I would use or even try any e-learning system that my organization would implement, but I would have my preferences on which e-learning system to use based on the recommendation of someone I trust."* (Interviewee 11)

On the other hand, when the interviewees were asked about the influence of their organizations and work environments on their intentions to use e-learning systems, most of them were disappointed. They believe the work environment does not encourage or support the use of e-learning. This is because either there is no e-learning system implemented or their experience with e-learning was not positive. A manager of an IT department said:

> *"Unfortunately we don't have an e-learning system implemented in our organization and I don't think we will have one in the near future. Therefore, I don't think my organization will have any influence on my intentions."* (Interviewee 18)

Another interviewee, an academic, said:

> *"I think my organization would support me and influence my intentions to use the e-learning system if it was made available, but I am not sure if my colleagues would have the same intentions."* (Interviewee 16)

A different effect and influence came from the private organizations where there is a return in investment from using e-learning. The organization and work environment influences were more positive and stronger, and the users were more focused on using e-learning systems since there are rewards and incentives. An academic said:

> *"I am happy to be a member of this organization where e-learning is available and using it is rewarded. The work environment is supportive for using e-learning and we are happy and enthusiastic about using it."* (Interviewee 10)

A senior manager from the same organization said:

> *"We are proud to be the only university in Kuwait to implement and adopt e-learning properly, other organizations may have their own e-learning*

system implemented but not adopted and used efficiently as we do." (Interviewee 9)

6.2.4 Management Awareness

Management awareness refers to the degree to which managers and decision makers are aware of the benefits and strategic advantages of e-learning, and their commitment to build an environment supportive of e-learning. Management awareness is measured by the degree to which managers and decision makers are aware of the strategic benefits of using e-learning and support the use of such systems. According to the literature, management awareness was found to be very important when accepting and adopting new technologies including e-learning (AlAwadhi and Morris, 2009; Al-Shafi et al., 2009; Alfadhli, 2011). In addition, the findings from the survey in the previous chapter (Chapter 5) showed that most of the participants think the management should know and understand the benefits of e-learning, and support the use of e-learning systems in order to successfully adopt and use such systems.

Since e-learning does not exist in most of the interviewed organizations or not properly adopted in organizations where e-learning is implemented, the interviewees were asked if they think this has something to do with the awareness of the management. Most of the interviewees agreed in respect of the importance of the awareness and support of management to adopt e-learning. There was a distinctive difference between the thoughts of interviewees from private and public sectors. For example, a manager of an IT department in a public organization where e-learning does not exist said:

"I do not know about the managements of other organizations, but our management awareness of the strategic advantages of e-learning and the support to implement and adopt e-learning in our organization is very weak." (Interviewee 18)

On the other hand, an IT manager from a private organization where an e-learning system is implemented said:

"Of course our management is aware of the benefits of e-learning and the strategic advantages from using such technology. Our managers and even

> *the stakeholders always urge us to improve our e-learning services and provide the necessary resources and support to overcome any problems."* (Interviewee 8)

The interviewees were also asked about the role of the management in implementing and adopting e-learning, and if the management is aware of the processes required to establish e-learning in their organizations. Apart from the IT people, almost all of the interviewees including managers were confused and did not recognize the stages or processes needed to develop an e-learning system. Most of them mentioned the implementation process and ignored the planning, designing, and updating or maintaining stages. The manager of the Human Resources Department in one of the public organization said:

> *"I believe the IT people in our organization are responsible for implementing an effective e-learning system. I think there are plans already developed to implement e-learning, the management should buy the necessary software and hardware to implement e-learning."* (Interviewee 4)

An academic also said:

> *"The management should act quickly and provide the hardware as soon as possible so we can use e-learning. I am sure we have the budget to buy what is necessary to implement an effective e-learning system in our organization."* (Interviewee 16)

However, most of the IT people were more aware of the processes necessary in order to establish an e-learning system in the organization. They explained the necessary stages required to establish an effective e-learning system, and they urged the organizations to follow the right order when applying these stages. This was supported by the manager of an IT department in one of the public organizations who said:

> *"To establish an effective e-learning system, we should properly develop a project that has all the necessary requirements to implement and adopt e-learning."* (Interviewee 18)

Many e-learning projects failed because of not following the right software development lifecycle. For example, the Ministry of Education in Kuwait tried to implement e-learning in public schools. The project consisted of 11 stages, and was planned and designed carefully and was almost perfect. The project started with stages 1 and 2 where the status of the public school was studied and the specialists in the field of e-learning were consulted. However, because of the political conflict between the parliament and the government, there was always a change in the government members including the minister of education. Six different ministers of education were appointed in the last ten years, each with different priorities and their own agenda. Some of those ministers were not interested in the project, whilst those who were interested were unaware of the development process of the project. One of the interested ministers ignored the first seven stages and activated the eighth stage which was buying the personal digital assistants (PDAs) for the students. The infrastructure was not available to use these PDAs, and hence the PDAs were useless and waste of money.

6.2.5 Language Barriers

Language barriers refer to the degree to which users would face difficulties when using an e-learning system that does not support their own language. In the context of this research, language barriers are measured by the perceptions of facing difficulties when using an e-learning system that was developed in a language other than Arabic. According to the literature, language barriers were found to be very important when accepting and adopting new technologies including e-learning (AlAwadhi and Morris, 2009; Al-Shafi et al., 2009; Alfadhli, 2011). In contrast to the literature, the findings from the survey in the previous chapter (Chapter 5) indicated that most of the participants considered that the language barriers would not be a significant predictor to adopt and use e-learning.

Since Arabic is the main and formal language in Kuwait, any new system that does not support Arabic will face some difficulties when being adopted. Most of the new technologies and systems are developed in English. Hence, those individuals who do not master the English language will find it difficult to use these systems and will be reluctant to adopt them. The interviewees were thus asked if they would find it

difficult to use an e-learning system that does not support Arabic. Interestingly, most of the answers were in contrast with the literature (AlAwadhi and Morris, 2009; Al-Shafi et al., 2009; Alfadhli, 2011). They said it would not make any difference for them since their English proficiency is very good. However, most of them were PhD graduates and conducted their degrees in English. For example, one academic said:

> *"I studied my bachelor in the United Kingdom, then I did my master degree in the United States, and after that I conducted my PhD in the United Kingdom again. Therefore, I do not have any problem when communicating in English. Frankly, I prefer to use English websites and systems with English interfaces since they are more consistent. However, it will be difficult to develop or translate the course contents from English to Arabic."* (Interviewee 14)

Moreover, the Head of School of Engineering said:

> *"We are educated people, we should not have any problem with the language neither with the system. Even if we are not familiar with English, we should know how to overcome such a problem and learn how to use the e-learning system."* (Interviewee 2)

Another view came from a manager of an IT department who said:

> *"If we want to implement an e-learning system, we should consider all the prospective users including students, academics, employees, and the management. I do not think the academics will have problems when using an English e-learning system, but I am more concerned with the students and the employees since most of them did not master the English language."* (Interviewee 18)

This view is supported by a project that was conducted by the Civil Service Commission in Kuwait. The project was about providing in-house training through e-learning courses for public sector employees. The employees from different ministries were asked to complete at least 2 e-learning courses to apply for a promotion. These ready-made training courses were developed by an established international company and were in English. However, few of the employees who started the e-learning courses continued their training, and very few successfully completed the training. An

investigation was carried out to find the reasons for such failure, and most of the employees who did not continued the training said it was because of the English language problem. They were either not familiar with English or they felt uncomfortable using systems that do not support Arabic. They also complained from the contents of the courses since they were in English and could not be translated to Arabic. One of them said:

> *"I barely can write my name in English, how do you expect me to use an English system that does not support Arabic?"* (Stated by Interviewee 8)

Another employee said:

> *"Why do we have to train in English? We are an Arabic country and we should be trained in Arabic!"* (Stated by Interviewee 8)

6.2.6 Facilitating Conditions

Facilitating conditions are the degree to which an individual believes that an organisational and technical infrastructure exists to support the system (Venkatesh et al., 2003). In the context of this study, facilitating conditions were measured by the perception of being able to access required resources, as well as to obtain knowledge and the necessary support needed to use e-learning systems. Researchers in the field of technology studies (e.g. Venkatesh et al., 2003; Moore and Benbasat, 1991; Thompson et al., 1991; Chang et al., 2007; Taylor and Todd, 1995; Chau and Hu, 2002; Venkatesh and Speier, 1999) found that the facilitating conditions construct has a positive effect on innovation use. They also found that it is a significant predictor of the actual use of technology but not the intention to use the technology. However, in contrast to the literature, findings from the survey in the previous chapter (Chapter 5) indicated that most of the participants considered that the facilitating conditions would not be a significant predictor to the actual use of e-learning.

In the interviews, the researcher tried to find out why there was an apparent contradiction between the literature and the survey findings of this research. Accordingly, the interviewees were asked if they have the necessary resources and knowledge to use e-learning in their organizations. Since most of the organizations do not have e-learning systems, the interviewees could not give definite answers. Many

interviewees said their organizations have the infrastructure and technology required to use e-learning but they do not have the e-learning system itself. The interviewees share the perception that infrastructure is very important for the implementation and adoption of e-learning in their organizations. For example, the manager of the IT department in one of the organization said:

> *"Infrastructure is without doubt necessary to the success of e-learning. In our organization, we have very good infrastructure that is capable to implement any e-learning system but unfortunately we still do not have any e-learning system implemented. We do not lack budget or facilities, but we lack vision and actions."* (Interviewee 18)

Although e-learning is not available in most of their organizations, most of the interviewees think they have the knowledge necessary to use e-learning systems. They believe that their computer experience would help them to use and learn how to use such systems. On the other hand, those with limited computer experience were uncertain if they have the knowledge necessary to use or to learn how to use e-learning systems. A secretary in one of the academic departments said:

> *"I am a secretary here, my job it to manage and organize the department managerial tasks. I have enough knowledge and computer experience to manage these tasks using simple software such as MS Word. I do not need to use e-learning systems to manage such tasks and I am not interested in learning how to use such systems."* (Interviewee 7)

An academic from the Department of Computer Engineering said:

> *"I do not think it will be difficult to use e-learning systems. We are educated and qualified individuals, and we have the knowledge and desire to use or even learn how to use such systems. However, training programs should be available for those who need them."* (Interviewee 10)

Another academic from the Department of social studies said:

> *"We have an e-learning system implemented in our organization but unfortunately we do not use it. Personally, I do not have enough knowledge or experience to use it. The organization does not provide*

enough training programs for such systems, and the support people are not always available." (Interviewee 3)

Since e-learning is not available in most of the organizations who participated in the interviews, the interviewees were not sure if they and their organizations have the knowledge and facilitating conditions necessary to use and adopt e-learning. They also did not have the opportunity to assess the availability of training programs or employee support mechanism.

Nonetheless, these findings show that the contradiction referred to at the beginning of this section might possibly be due to the absence of e-learning in some of the participated organizations, or to the new infrastructure they possess. This will be further elaborated upon in the next section.

6.3 Discussion of Interviews Outcomes

The aim of the research was to study and explore the adoption of e-learning in Kuwait and the important factors that influence the adoption of this technology. This section discusses the findings presented in the previous sections in this chapter with particular focus on acquiring in-depth understanding and explanation to the relationships found in this research. This section also looks to verify and validate the statistical results found in this research, and compares them with the findings from the literature.

Previous studies showed that the performance expectancy construct was very influential to the adoption of e-learning (AL-Harby et al., 2010; AlAwadhi and Morris, 2008; Cao et al., 2013; Marchewka et al., 2007; Marques et al., 2011). Furthermore, the statistical findings from the quantitative study (the survey) in the previous chapter showed that there was a significant relationship between performance expectance and behavioural intention to use e-learning. The qualitative (interviews) analysis revealed the conformity of the influence of performance expectancy construct on the adoption of e-learning. The interviewees also agreed that benefits such as saving time and money, improving performance, and an increase in the quality and quantity of learning would influence their intentions to adopt and use e-learning.

Regarding the effort expectancy construct, previous studies showed that the construct was influential (AL-Harby et al., 2010; AlAwadhi and Morris, 2008; Giannakos and Vlamos, 2013; Marques et al., 2011). Also, the findings from the quantitative study was in line with the literature and illustrated the influence of the effort expectancy construct was significant. The qualitative analysis also confirmed the influence of this construct on the intentions of the interviewees to adopt and use e-learning. Also, it showed that the interviewees would like to use an easy to use system that requires less effort from them, so they would have more time to do other activities.

The social influence construct was important in the adoption of e-learning according to previous studies (Al-Fadhli, 2009; AL-Harby et al., 2010; AlAwadhi and Morris, 2008; Marques et al., 2011). Further, the quantitative study findings showed that the social influence was significant in the adoption of e-learning in higher educational institutions in Kuwait, which is in agreement with the literature. The qualitative analysis also supported this argument and most of the interviewees stated that the social influences represented through important people and colleagues would be important in their intentions to adopt and use e-learning. Also, the interviewees mentioned that the positive experiences of other people with e-learning would put further positive pressure on them to adopt and use such technology.

The management awareness was addressed in the literature as an important factor in the adoption and acceptance of any new technology in general and specifically e-learning (Agboola, 2006; Al-Kazemi and Ali, 2002; Al-Shafi and Weerakkody, 2010; Ali and Magalhaes, 2008; Zhang et al., 2010). In addition, the exploratory study (Chapter 4) conducted at the beginning of this research to investigate the state of e-learning in higher educational institutions in Kuwait revealed that the lack of management awareness was one of the main reasons why e-learning is not adopted in Kuwait. Moreover, the quantitative study findings confirmed the significance of this factor when adopting e-learning in Kuwait. Furthermore, the qualitative analysis showed that the management awareness was critical in the adoption of e-learning in Kuwait. However, according to most of the interviewees there is a lack of awareness of the importance of e-learning from the top management and the decision makers in the higher educational institutions in Kuwait. Also, the support from top management to use e-learning in the education process is very weak. This was obvious since there were no incentives or reward system to motivate the use of such technology or any

individual effort to apply e-learning. Interestingly, some of the managers were disappointed with the lack of commitment from the top management and decision makers. This is specific to Kuwait where there is a continuous change in the government due to the continuous conflict with the parliament. This change in government leads to a change of priorities with each new minister of education, which in turn affects the plans and projects within those educational institutions. Therefore, to implement, adopt and establish effective e-learning systems in Kuwait, the awareness, support, and commitment from the top management (government, decision makers, managers, and even employees) is needed.

The language barriers were also addressed in the literature as a barrier to the adoption of technology in developing countries in specific including Kuwait (Ahmad et al., 2012; Al-Gahtani, 2003; Ali and Magalhaes, 2008; Peel, 2004). They were also mentioned by many academics and managers in the exploratory study (Chapter 4). E-learning is one of many technologies that was affected by the language barriers and consequently led to inefficient adoption in Kuwait. However, the quantitative study findings found that the language barriers were insignificant. Although they have a negative influence on the intention to adopt e-learning (as hypothesized), the influence was not that significant. In the qualitative study, the interviewees were asked about the language barriers, and their answers were clear. They stated that they would not have any problem with the language if the e-learning system would not support Arabic. That is because they are educated people, and most of them conducted their degrees in English speaking countries such as the United Kingdom and United States of America. However, they expected there would be language problems when considering other users such as students and departmental staff. Since e-learning would be used by all parties including academics, managers, students, and employees, this problem should be considered and the solution should be provided. This can be achieved by using bilingual e-learning systems or to provide assistance and support if such problem occurs.

The facilitating conditions construct was modelled to be related directly to the use behaviour construct (Al-Shafi and Weerakkody, 2010; Hennington and Janz, 2007; Venkatesh et al., 2003; Venkatesh et al., 2012), which means the actual use of e-learning in this research. Therefore, the technological and organizational issues that are meant to influence the actual use of e-learning in higher educational institutions

are considered in this construct. These issues include the availability of the necessary hardware and software to use e-learning, legislation across the institutions' departments and campuses, organizations' support and commitment towards e-learning projects to ensure their continuity and sustainability. Therefore, the adoption of e-learning would be recognized highly if these technological and organizational issues are perceived highly. Although facilitating conditions were considered significant in the literature by many researchers (AlAwadhi and Morris, 2008; Marques et al., 2011; Venkatesh et al., 2003; Venkatesh et al., 2012), the quantitative study findings showed that the facilitating conditions were insignificant to the actual use of e-learning systems. In the qualitative analysis, some interviewees attributed this insignificancy to the unavailability of e-learning systems in most of the higher educational institutions in Kuwait, and if it is already implemented it is not used efficiently. Others attributed the insignificancy to the lack of support and commitment from the organizations. Moreover, after the gulf war in 1990, most of the public organizations in Kuwait including educational institutions built their new IT infrastructure after the destruction of their old infrastructure. Also, most of the private higher educational institutions in Kuwait are relatively new and most of the hardware, software, and infrastructure are new and up to date. Consequently, most if not all the higher educational institutions in Kuwait have the required technology and facilities to implement and adopt e-learning successfully.

6.4 Revised Conceptual Model for E-Learning Adoption

The research conceptual model presented in Chapter 4 (Figure 4.1) and revised in Chapter 5 (Figure 5.4) considered the findings from the literature, the exploratory study, and the quantitative study. The findings from the main study of the research (quantitative study) showed the important and significant factors that would influence the prospective users' behavioural intention to accept and adopt e-learning. Although there were some differences from the main findings and those found in the literature, the qualitative study findings confirmed the quantitative study findings and explained these differences by uncovering some interesting insights to those differences. For example, the language barriers were found to be insignificant in the main study which was limited to academics and managers only. The qualitative study exposed this limitation and it would be worthwhile to investigate this construct with a different

sample, such as one comprising of students and employees. Furthermore, the qualitative analysis uncovered new elements which would influence the adoption of e-learning in Kuwait. The new elements include the inclusion of management support and commitment with the management awareness construct, also the evident difference between the public and private sectors in Kuwait. The final version of the research conceptual model of e-learning adoption is shown in Figure 6.1, including the new elements emerged from the qualitative study.

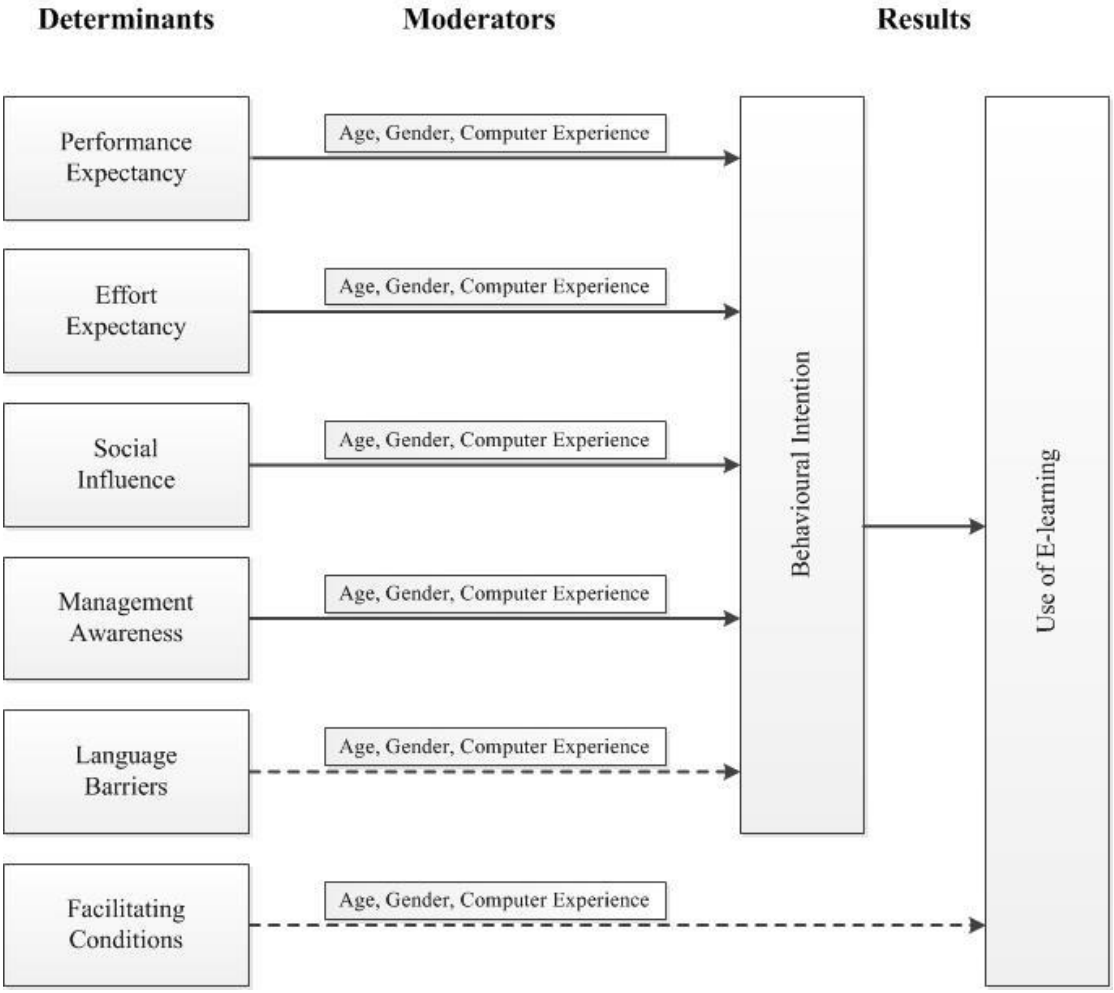


Figure 6.1: Final revised conceptual model of e-learning adoption

The quantitative and qualitative analyses not only completed each other, but further gave an in-depth explanation and justification to the relationships between the conceptual model's constructs. Although using methods triangulation could produce some differences in the analysis, the reliability and validity of the main findings from both methods should not be affected.

6.5 Summary

This chapter presented the qualitative data that was collected from the participants through conducting semi-structured interviews. It also provided an in-depth discussion on the qualitative findings obtained as a result. The chapter first explained briefly the processes that have been carried out to collect the data. It also presented and explained the developed themes for this study. Those themes were then discussed to explain and support the findings from the quantitative study. The qualitative analysis explained and explored in depth the relationships between the constructs that were proposed in Chapter 4. It also tried to explain the unexpected findings from the quantitative study, and uncovered these differences with interesting perceptions and insights. Moreover, the qualitative analysis revealed that additional new factors should be considered to adopt e-learning in Kuwait such as management support and commitment, content development, and the differences between public and private sectors in Kuwait. The use of quantitative and qualitative triangulation offered affirmative cross validation amongst the two methods. The following chapter presents the research conclusion, contributions, limitations, implications, and recommendations for further research.

7 Chapter 7: Conclusion

7.1 Overview

This chapter aims to (a) provide a brief overview of the research, and present the research findings and conclusions; (b) summarize the contributions reported in this research; (c) discuss the research implications for research and practice; (d) highlight possible limitations of this research; and (e) propose further research directions and recommendations in the field of e-learning acceptance and adoption.

Therefore, chapter 7 starts by providing a brief overview to the research area, and summarizing the main findings and conclusions conducted in this research. Then, the final version of the conceptual model proposed in this thesis is presented. This is followed by listing the contributions claimed in this research. Thereafter, the theoretical and practical implications of the research will be discussed. The following section presents and discusses the limitations of this research. Finally, this chapter conclude by providing recommendations and suggestions for further research directions in the field of e-learning adoption.

7.2 Research Overview and Findings

E-learning as an organizational activity started in the developed countries, and as such, the implementation models developed in the developed countries are taken as a benchmark. The implementation barriers and the influential factors for adopting e-learning in different regions and societies may or may not be the same as those found in the developed countries (with varying degrees of intensity or importance). Hence, those available implementation models may not necessary be followed in all stages and steps when used by different countries and societies. Accordingly, the implementation barriers and the influential factor may differ from one case to another.

In order to reach the adoption of e-learning stage successfully, we have to find, study, and solve all the challenges and barriers that influence the success of e-learning. Hence, the aim of this research is to investigate and study the important factors that influence the adoption of e-learning in Kuwait as an example of a developing country, and help to reduce the resistance of using e-learning. Furthermore, this research proposed a conceptual model based on the UTAUT model, and amended it with external factors to suit the context of the study.

While reviewing the literature, this research has introduced and analyzed some factors that influence the acceptance and adoption of e-learning in general, and in Kuwait in specific as a case study. There are many factors that can influence the adopting of e-learning; these factors could be personal, technical, or organizational. Adoption of e-learning does not depends only on the benefits of e-learning but also on other factors such as the barriers of e-learning which include the cost of implementation, the time needed to establish and use e-learning, the infrastructure and technology needed to implement e-learning, the willingness to use it among probable users, and many more.

One of the objectives of this research was to propose and develop a conceptual model that can be used as a road map for empirical data collection and analysis, and to establish a comprehensive overview of the adoption of e-learning in the context of Kuwait. Hence, this research proposed and developed a conceptual model for e - learning adoption. The proposed conceptual model considered variables from two sources: a) an exploratory study carried out in Kuwait to investigate the important factors that influence the adoption of e-learning in higher educational institutions; and b) the UTAUT model. The main concern was to allow the model to consider the important factors and barriers that might influence the acceptance and adoption of e-learning, and to form the basis for the empirical studies conducted in this research and discussed in Chapters 5 and 6.

This research identified and used a suitable methodology to conduct the studies that were carried out in this thesis. It has argued that mixed methods were found to be an appropriate research approach that achieves the aim of this research and answers the questions highlighted by this thesis. The research methodology was designed to determine the important factors that influence the adoption of e-learning in higher educational institutions in Kuwait. As outlined in Chapter 3, this thesis justified why the positivism approach was appropriate for this research. Then, it highlighted the design that was followed in order to meet the research aim and objectives. Although this research collected data through different techniques such as questionnaires, interviews and observations, the main conclusions of this thesis have been drawn from the questionnaire.

Two main studies were conducted in this research in addition to the exploratory study mentioned above. The first main study was a quantitative study that used a questionnaire-based survey to collect the data. Chapter 5 presented, analysed, and

discussed the results that were obtained from the survey that was conducted to investigate the factors that influence the adoption of e-learning in higher educational institutions in Kuwait. The data collected were interpreted and analysed to understand the adoption of e-learning in the context of Kuwait. Also, different assessments were used to test the research model reliability and validity. The survey analysis illuminated the relationships between the conceptual model constructs; Performance Expectancy, Effort Expectancy, Social Influence, Management Awareness, Language Barriers, Facilitating Conditions, Behavioural Intention, and Actual Use.

The main findings from the survey analysis, as will be highlighted in the next section, supported most of the hypothesized relationships between these constructs. However, the survey analysis which is a quantitative in nature does not offer in-depth explanations and answers for the 'Why' questions. As a result, the other main study which is a qualitative in nature was conducted. The aim of the qualitative study was to explore and study further the relationships between the conceptual model's constructs by conducting interviews and the use of qualitative analysis. The qualitative analysis, using thematic analysis methods, was used to confirm the previous findings of this research, and also to give explanations to the unexpected findings. As a result, the main findings and conclusions from both studies will be highlighted next.

7.2.1 Performance Expectancy and Behavioural Intention

Previous research and studies showed that performance expectancy was found to be a strong predictor of intention to use new technologies, and very influential to the adoption of e-learning (AL-Harby et al., 2010; AlAwadhi and Morris, 2008; Cao et al., 2013; Marchewka et al., 2007; Marques et al., 2011). Furthermore, the exploratory interviews showed that academics and e-learning professionals in Kuwait believe that performance expectancy is an important and influential factor in the adoption of e-learning among higher educational organizations in Kuwait. Also, the findings from the questionnaire-based survey (quantitative study, Chapter 5) indicated that there was a significant relationship between performance expectancy and behavioural intention to use e-learning. In addition, the outcomes from the interviews (qualitative study, Chapter 6) confirmed the previous findings in this research in which most of the academics and managers think that using e-learning in their organizations would

improve their job performance and accomplish their tasks faster. This research confirmed the positive and strong influence of performance expectancy on the adoption of e-learning, and revealed that benefits such as improving performance, saving time and money, and increase the quality and quantity of learning would influence the intentions of managers and academics to adopt and use e-learning.

7.2.2 Effort Expectancy and Behavioural Intention

Previous research and studies showed that effort expectancy was an influential predictor of intention to use e-learning (AL-Harby et al., 2010; AlAwadhi and Morris, 2008; Giannakos and Vlamos, 2013; Marques et al., 2011). Moreover, the exploratory study suggested that effort expectancy was seen by e-learning experts and academics as an important issue in the acceptance and adoption of e-learning. In addition, the findings from the survey discussed above (quantitative study) were in line with the literature and illustrated the significant influence of effort expectancy on behavioural intention to the adoption of e-learning in higher educational organizations in Kuwait. Further, the outcomes from the interviews analysis (qualitative study) backed up the claims from the literature and the conclusions from both studies (exploratory and quantitative) in this research in which most of the academics and managers would use an e-learning system if it easy to use and save their effort and time. This research confirmed the influence of effort expectancy on the intentions of managers and academics to adopt and use e-learning. Also, it showed that the users would like to use an easy to use system that requires less effort from them, so they would have more time to do other activities.

7.2.3 Social Influence and Behavioural Intention

According to previous research and studies, the social influence construct was claimed to be an important determinant of behavioural intention to the adoption of e-learning (Al-Fadhli, 2009; AL-Harby et al., 2010; AlAwadhi and Morris, 2008; Marques et al., 2011). This claim was supported by e-learning experts and practitioners in Kuwait during the exploratory study conducted at the beginning of this research to investigate the state of e-learning in higher educational organizations

in Kuwait. In addition, the findings from the survey (quantitative study) demonstrated the significant relationship between social influence and behavioural intentions to use and adopt e-learning in higher educational organizations in Kuwait. Furthermore, the outcomes from the interviews (qualitative study) were in line with those claims and confirmed that most of the managers and academics believe that the social influences represented in family and important people and colleagues would be important in their intentions to adopt and use e-learning in their field of work. Since e-learning is a new phenomenon in Kuwait, positive experiences of other people, colleagues, and organizations with e-learning would have a positive influence on those who did not adopt e-learning yet, and put further pressure on them to adopt and use e-learning.

7.2.4 Management Awareness and Behavioural Intention

The management awareness and support was addressed in the literature as an important issue in the acceptance and adoption of any new technology such as e-learning (Al-Kazemi and Ali, 2002; Al-Shafi and Weerakkody, 2010; Ali and Magalhaes, 2008). In addition, the exploratory study revealed that the lack of management awareness and support was one of the main reasons why e-learning is not adopted in Kuwait. Furthermore, the survey findings (quantitative study) validated the relationship between management awareness and behavioural intention to use and adopt e-learning, and confirmed the significance of this factor when adopting e-learning in Kuwait. On the other hand, the outcomes from the interviews (qualitative study) were in line with the literature and findings from exploratory and survey studies. However, more details and issues about management awareness and its influence were emerged from the analysis of the interviews. Issues such as management support and management commitment were linked with the management awareness to compliment the influence of this factor. Decision makers and top management in higher educational organizations in Kuwait should understand and be aware of the benefits and strategic advantages from using and adopting e-learning. Therefore, to implement, adopt and establish effective e-learning systems in Kuwait, the awareness, support, and commitment from government, decision makers, managers, and even employees are needed.

7.2.5 Language and Behavioural Intention

The language barriers were addressed in the literature as an impediment to the acceptance and adoption of new technologies in developing countries in specific including Kuwait (Ahmad et al., 2012; Al-Gahtani, 2003; Ali and Magalhaes, 2008; Peel, 2004). In addition, the language barriers were mentioned by many e-learning experts and academics in the exploratory study. They pointed out that e-learning is one of many technologies that was affected by the language barriers and consequently led to inefficient adoption in Kuwait. However, in contrast to the literature, the survey findings (quantitative study) indicated that the language barriers were insignificant, and would not predict the intentions of managers and academics to use and adopt e-learning in higher educational organizations in Kuwait. Although language barriers had negative influence on behavioural intention to adopt e-learning (as hypothesized), the influence was not significant enough to confirm the relationship between language barriers and behavioural intention. On the other hand, the outcomes from the interviews (qualitative study) were understandable and explanatory. The interviews analysis assured that senior managers and academics would not have any problem with the e-learning system if it would not support Arabic. This is because most of the academics and managers conducted their degrees in English spoken countries such as United Kingdom and United States of America. However, they expected there would be language problems when considering other users such as students and departmental staff. Since e-learning would be used by all parties including academics, managers, students, and employees, this problem should be considered and the solution should be provided.

7.2.6 Facilitating Conditions and E-Learning Adoption

Previous research and studies found that the facilitating conditions construct is a significant predictor of the actual use of technology but not the intention to use the technology (Al-Shafi and Weerakkody, 2010; Hennington and Janz, 2007; Venkatesh et al., 2003; Venkatesh et al., 2012). Therefore, the facilitating conditions construct was modelled to be related directly to the use behaviour construct, which means the actual use of e-learning in this research. The exploratory study showed that the experts of e-learning in Kuwait believe issues such as the availability of the necessary

hardware and software and the support and commitment of organizations are important and very influential in the adoption and use of e-learning. However, the survey findings showed that the relationship between the facilitating conditions and the actual use of e-learning constructs is insignificant. This insignificancy was somehow explained in the interviews analysis, and was attributed to the unavailability of e-learning systems in most of the higher educational institutions in Kuwait. Also, after the gulf war in 1990, most of the public organizations in Kuwait including educational institutions built their new IT infrastructure after the destruction of their old infrastructure. Moreover, most of the private higher educational institutions in Kuwait are relatively new and most of the hardware, software, and infrastructure are new and up to date. Consequently, the facilitating conditions construct was considered influential since most if not all the higher educational organizations in Kuwait have the required technology and facilities to implement and adopt e-learning successfully.

7.2.7 Behavioural Intention and E-Learning Adoption

Previous research and studies have confirmed the relationship between behavioural intention and actual use of e-learning constructs, and showed the significance of behavioural intention in explaining the behaviour of usage and adoption of technology (Al-Shafi and Weerakkody, 2010; Hennington and Janz, 2007; Venkatesh et al., 2003; Venkatesh et al., 2012). The exploratory study also suggested that behavioural intention influence the use and adoption of technology positively and significantly. In addition, the findings from the survey (quantitative study) indicated that there is a significant relationship between behavioural intention and the actual use of e-learning constructs. Moreover, the outcomes from the interviews analysis also confirmed the influence of behavioural intention construct on the actual use of e-learning. Most, if not all, the studies indicated that the relationship between behavioural intention and actual use of technology is significant and straightforward.

7.3 Revised Conceptual Model for E-Learning Adoption in Kuwait

The research conceptual model presented in Chapter 4 (Figure 4.1) was developed based on the UTAUT model, and considered factors from both the literature of e-

learning and the exploratory study carried out at the beginning of the research. The survey analysis and discussion (quantitative study, Chapter 5) and the interviews analysis and discussion (qualitative study, Chapter 6) were conducted to examine and validate the research conceptual model. The analysis of the survey resulted in the elimination of language barriers and facilitating conditions constructs, whereas the analysis of the interviews uncovered new issues such as management support and management commitment. Further, the interviews analysis showed that the language barriers construct can be reintegrated to the conceptual model when considering different types of users such as students and employees. Therefore, the final version of the conceptual model of e-learning adoption in Kuwait, including the new issues, is presented in Figure (7.1).

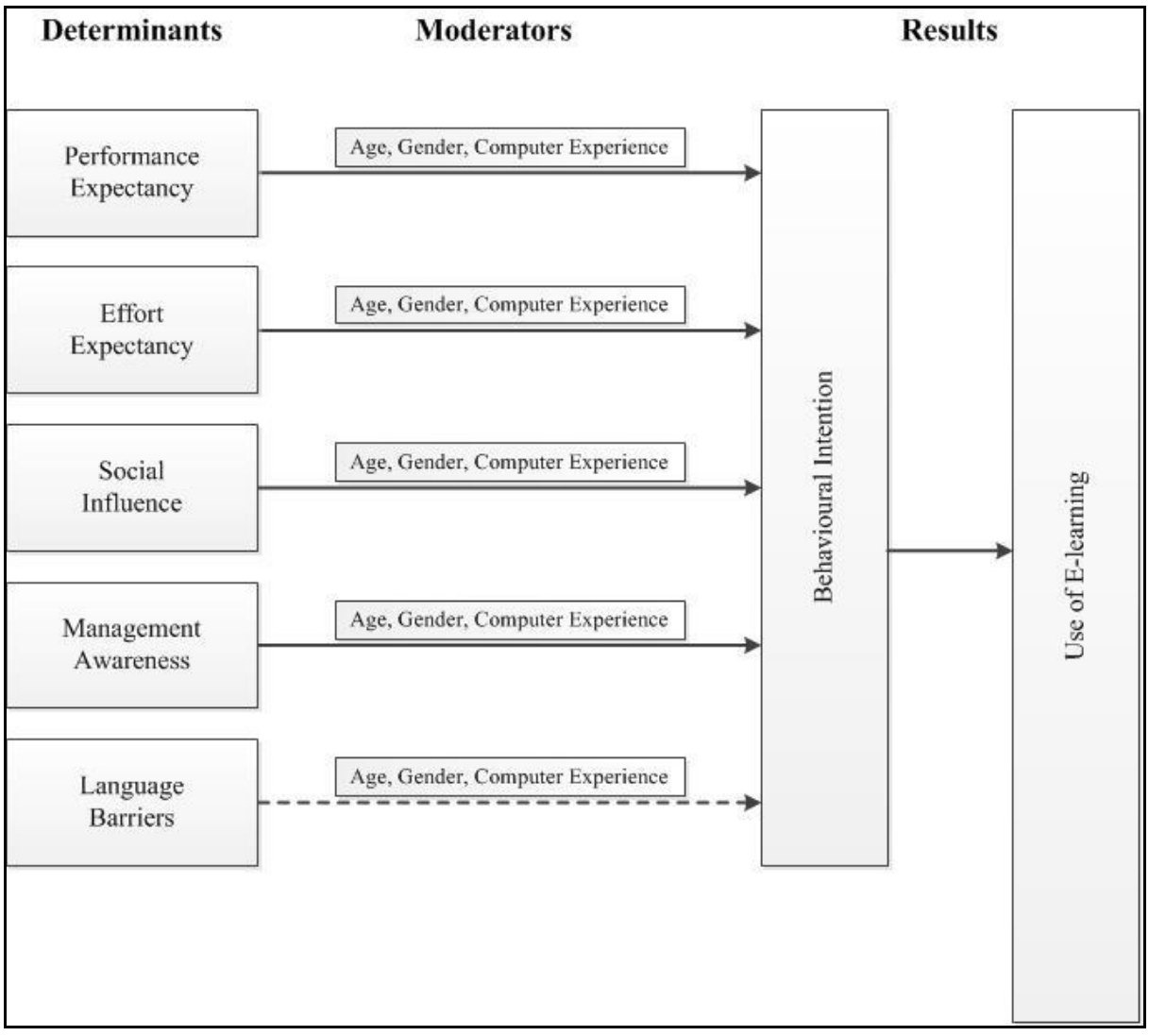


Figure 7.1: Research Conceptual Model

7.4 Research Contribution and Implications

Although many studies and research have explored the adoption of e-learning in many countries, mostly developed countries, the author of this research argues that just few studies about the adoption of e-learning were conducted in developing countries and none was conducted in Kuwait. However, there are some experiments were carried out in Kuwait about e-learning, but they are only personal attempts to use technology in teaching and training (Al-Fadhli, 2011; AlAwadhi and Morris, 2008; Ali and Magalhaes, 2008). There were no comprehensive studies about the adoption of e-learning or the important factors that would influence the adoption of e-learning in Kuwait. The lack of useful empirical studies and research about the adoption of e-learning has resulted in little understanding of user acceptance and adoption of this technology. Therefore, the outcomes of this research have contributed to the literature and knowledge in the field of e-learning adoption by reviewing the literature of e-learning in both developed and developing countries, listing and organizing the related studies about e-learning adoption, and adding to the literature of e-learning adoption in the context of developing countries in general and to Kuwait in specific.

The outcomes of this research have provided empirical investigations and validations to the factors and issues that would influence (positively or negatively) the acceptance and adoption of e-learning in Kuwait as an example of a developing country. These factors were identified and discussed in Chapters 1 & 4, and were examined and validated in Chapters 5 & 6. Although these empirical findings were conducted in Kuwait, they could be used in developing countries that have similar cultural and contextual characteristics with Kuwait. The findings in this research were, to some extent, in line with some studies when compared with developing countries, but in the same time were inconsistent with some studies conducted in developed countries. Also, some of these findings were unique in the context of Kuwait. Therefore, considering the lack of literature about issues and factors that influence the acceptance and adoption of e-learning, the outcomes of this research provide a novel contribution in identifying and understanding the issues and factors that would influence the adoption of e-learning in Kuwait. Furthermore, these outcomes can be used as a frame of reference for further research in different contexts, or to investigate other issues and factors that would influence the adoption of e-learning.

In spite of the research and studies that have been carried out to investigate and study factors influencing e-learning adoption, this research argues that no previous studies exist that have attempted to adopt the UTAUT model in the context of e-learning in Kuwait or any Arabic country. Further, this research identified the lack of theoretical models that explore and analyse the different issues and factors that influence the acceptance and adoption of e-learning. Therefore, this research proposed a conceptual model to overcome this shortness, and provide a better understanding to these factors and the potential relationships between them. The adaptation of a valuable and reliable technology acceptance model, namely UTAUT, which was conceptualized with the outcomes of the exploratory study (Chapter 4), resulted in the development of a comprehensive and consistent model that identifies and analyzes factors influencing the adoption of e-learning in Kuwait and in developing countries in a wider context. This conceptual model was tested and validated in Chapters 5 and 6. In the context of this research, the proposed model could be used as a frame of reference by higher educational organizations that seek to implement and adopt e-learning systems. Furthermore, it could serve as a decision-making tool to support educational organizations and other organizations in their efforts to implement and diffuse e-learning in the context of teaching and training.

7.5 Research Limitations

This research has encountered some limitations and difficulties, similar to any research that studies a new phenomenon.

The main limitation for this research was the lack of time available to conduct the data collection and data analysis. Since this is a PhD research that is restricted to a time plan, the time allocated for data collection was only enough to collect information from the minimum possible participants to have a valid and reliable analysis and results. Moreover, the data analyses used in this research were efficient enough to provide reliable and accurate results. However, further analyses with different methods could be carried out to confirm and validate the results.

Another limitation was the difficulty in accessing private and sensitive information related to policies, strategies, and budgets. The managements of some organizations

were reluctant to provide such information due to the lack of awareness of the importance of such research and studies, or they are uninterested to participate in such research. Furthermore, the absence of some statistical information related to the participated organizations such as the number of academics, employees, and academics provided some difficulties.

Although important and rich data can be obtained from the chosen participant (managers and academics) in both studies, the busy schedule and repeatedly cancelled appointments of some participants made it difficult to contact enough participants and collect enough information. Also, only a small number of participants were enthused to participate in this research since they are usually strained and busy with their everyday tasks. However, the sample was chosen not only for practical reasons and convenience, but also because managers and academics are amongst those whose opinions and perceptions will influence the adoption of e-learning in their organizations.

The translation of the qualitative data provided some challenges. Since the interviews were conducted in Arabic, the large amount of data was transcribed in Arabic and then translated to English which was difficult and prone to errors. To obtain accurate and bias-free results, this research translated the data backward and forward between English and Arabic with the aid of bilingual professionals. This method consumed both time and effort.

Since the participated organizations were educationally oriented, the outcomes of this research would suit similar profile organizations and will not represent all different organizations in Kuwait. However, the novel conceptual model developed in this research would provide a valid and reliable model to explore and study the adoption of e-learning in other organizations with different contexts, and other countries in a wider context.

7.6 Further Research Directions and Recommendations

In order to overcome the abovementioned limitations, additional research and investigations are needed. Since this research investigated a relatively new

phenomenon in Kuwait, namely e-learning, further investigations would improve the outcomes of this research in terms of generalization and validation.

This research was limited to higher educational organizations' academics and managers in Kuwait due to the reasons discussed earlier in Chapter 3. The involvement of different groups such as students, employees, and even citizens and different sectors such as government ministries and private sectors would improve the generalization of this research and identify more factors that would influence the adoption of e-learning.

Although this research considered demographic variables in the proposed model, further investigation on the influence of these variables would provide a better understanding to the potential users' perceptions to accept and adopt e-learning. Such investigations include comparing the influence of different age groups and gender differences.

Furthermore, the analysis of the qualitative study showed there is a difference in the importance and influence of some factors between the public and private sectors as discussed in Chapter 6. Additional investigation and comparison between the two sectors would provide more insight to the adoption of e-learning, and identify the influential factors that would further improve the adoption of e-learning for each sector.

This study proposed a conceptual model based on the UTAUT model, and amended it with external factors based on the outcomes from the exploratory study to suit the context of the study. Also, this study tested the UTAUT model in the context of e-learning in higher educational organizations in Kuwait. Furthermore, this model could be used as a frame of reference for further research by testing this model in different contexts or countries. Last but not least, it can be extended to include additional or different factors such as trust, security, and even cultural influences.

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Appendix A

Exploratory Study Interview Questions

Section 1: Introduction

1. How do you see the evolution of the ways of delivering learning in your organization over the past five years?

   (Aim of this question is to determine the position of e-learning among the traditional methods of learning and the historical background of the company in starting up or implementing e-learning)

2. To what extent is e-learning used in your organization? Who are the users and what is the range of courses covered through e-learning?

   (Aim of this question is to clarify the degree of integration of e-learning)

3. Did the use of learning technologies raise the standards of learning?

   (Aim of this question is to stress the importance of quality of e-learning)

4. Based on your organization's experience, what were the incentives for using e-learning as an integral part of the organization's learning strategy and how did it assess its readiness?

   (Aim of this question is determine benefits of e-learning in the learning environment of the organization and the effectiveness of the change of plan used by the organization)

5. Are the users recognized for using e-learning? How?

   (Aim of this question is to highlight the reward system applied by the organization and how it encourages its adaptation)

Section 2: Barrier Identification by Organizations and Users

1. How closely does the organization's learning policy fit with e-learning?

   (Aim of this question is to determine the commitment of the organization in using e-learning)

2. What challenges does the organization face in the implementation/starting of e-learning? From your organization's experience, what are the top 4 barriers to implementing/starting e-learning?

   (Aim of these questions is to identify the difficulties organizations encounter in Kuwait when implementing or starting e-learning)

3. In being involved in the learning strategy of your organization, what do you think are the barriers that are slowing down the adoption of e-learning from the user side?

   (Aim of this question is to identify the difficulties users encounter in Kuwait when implementing or starting e-learning)

4. What would most help organizations use e-learning? What would most help users start or increase their use of e-learning?

   (Aim of these questions is to address strategies to encourage users to adopt e-learning)

Section 3: Evaluation

1. How is e-learning evaluated and revised over its life cycle (plan-design-integration-improve)?

   (Aim of this question was to evaluate the capacity of organizations to manage e-learning)

2. Taking into consideration the challenges both organizations and users encounter:

   (1) Is e-learning worth the investment? Explain.

   (2) Does management see a return on investment? Explain.

   (3) Does management see a clear strategic advantage for using e-learning solutions in the organization? Explain.

   (Aim of these questions is to evaluate and classify the organization's experience as good or bad)

Appendix B

Questionnaire in English

Factors that Influence the Adoption of e-Learning - An empirical study in Kuwait

Confidentiality Statement

The data obtained from this questionnaire will be treated as strictly confidential and only be used for the purpose of this academic research. No information will be attributed to any person or organization.

The Purpose of the study:

This questionnaire is part of a doctoral (PhD) research project essentially aiming at investigating the key factors that influence the adoption of e-learning in the context of higher educational institutions in Kuwait.

In the course of e-learning adoption in Kuwait, the implementation barriers and the influential factors for adopting e-learning in different regions and societies may or may not be the same as those found in the developed countries with varying degrees of intensity or importance.

Instructions

I would very much appreciate if you would be so kind to spare 5-10 minutes of your time to fill out this questionnaire. Without your co-operation, it is not possible to complete this study. Responses are based on your own experience where there are no right or wrong answers.

As you complete this questionnaire, please focus on the adoption of e-learning in Kuwait. Could you please relate all your answers to your experience or your perception of the use of e-learning.

Mubarak Alkharang

Brunel University

Mubarak.alkharang@brunel.ac.uk

Section A: Background Information

These questions are being asked so that comparison can be made between different groups of respondents.

Age:

- ☐ Less than 25 years
- ☐ Between 25 – 35 years
- ☐ Between 35 – 45 years
- ☐ Between 45 – 55 years
- ☐ More than 55 years

Gender:

☐ Male ☐ Female

Computer Experience:

- ☐ Less than 1 year
- ☐ Between 1 – 2 years
- ☐ Between 2 – 5 years
- ☐ Between 5 – 10 years
- ☐ More than 10 years

Have you ever used an e-learning system before?

☐ Yes ☐ No

Section B: Research Data

Please circle or highlight the number which reflects your level of agreement.

Performance Expectancy **1**= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree						
1	Using the e-learning system would improve the quality of the learning performance.	**1**	**2**	**3**	**4**	**5**
2	Using the e-learning system would increase the quantity of the learning productivity.	**1**	**2**	**3**	**4**	**5**
3	Using the e-learning system would save my time in managing my job.	**1**	**2**	**3**	**4**	**5**
4	Using the e-learning system would have no effect on the performance of my job.	**1**	**2**	**3**	**4**	**5**
5	I would find the e-learning system useful in my organisation.	**1**	**2**	**3**	**4**	**5**
Effort Expectancy **1**= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree						
1	Using the e-learning system would require a lot of effort	**1**	**2**	**3**	**4**	**5**
2	Learning to operate the e-learning system would be easy.	**1**	**2**	**3**	**4**	**5**
3	My interaction with the e-learning system would be clear and understandable.	**1**	**2**	**3**	**4**	**5**
4	Overall, I believe using the e-learning system would be easy.	**1**	**2**	**3**	**4**	**5**
Social Influences **1**= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree						
1	People who are important to me think that I should use the e-learning system.	**1**	**2**	**3**	**4**	**5**
2	People who influence my behaviour or who opinions I value think that I should use the e-learning system.	**1**	**2**	**3**	**4**	**5**
3	As more people use the e-learning system, the related hardware and software would be provided.	**1**	**2**	**3**	**4**	**5**
4	As more people use the e-learning system, the related training and support would be provided.	**1**	**2**	**3**	**4**	**5**

5	Using the e-learning system would add to my status amongst my social network.	**1**	**2**	**3**	**4**	**5**
6	I am not required to use the e-learning system.	**1**	**2**	**3**	**4**	**5**
7	The users of the e-learning system would be rewarded for using it.	**1**	**2**	**3**	**4**	**5**
8	The management is aware of the benefits of using the e-learning system.	**1**	**2**	**3**	**4**	**5**
9	The management is aware of the strategic advantage for using the e-learning system.	**1**	**2**	**3**	**4**	**5**
10	The management would evaluate and revise the e-learning system over its life cycle (plan-design-implement-update).	**1**	**2**	**3**	**4**	**5**
11	I would face language problems when using an e-learning system that do not support my language.	**1**	**2**	**3**	**4**	**5**
12	The language problems would affect my teaching effectiveness when using the e-learning system.	**1**	**2**	**3**	**4**	**5**
13	The necessary resources and facilities to overcome the language problems would be available by the organization.	**1**	**2**	**3**	**4**	**5**
14	In general, I believe the organization would support the use of the e-learning system.	**1**	**2**	**3**	**4**	**5**
Facilitating Conditions **1**= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree						
1	I have the resources necessary to use the e-learning system.	**1**	**2**	**3**	**4**	**5**
2	I have the knowledge necessary to use the e-learning system.	**1**	**2**	**3**	**4**	**5**
3	The e-learning system would be compatible with all aspects of my job.	**1**	**2**	**3**	**4**	**5**
4	Training and manuals for the e-learning system would be available.	**1**	**2**	**3**	**4**	**5**
5	Support people would be available for assistance.	**1**	**2**	**3**	**4**	**5**
6	The management would provide the necessary help and resources for using the e-learning system.	**1**	**2**	**3**	**4**	**5**

Behaviour Intention **1**= Strongly Disagree **2**= Disagree **3**= Neutral **4**= Agree **5**= Strongly Agree						
1	Assuming I have access to the e-learning system, I intend to use it.	**1**	**2**	**3**	**4**	**5**
2	Given that I have access to the e-learning system, I plan to use it.	**1**	**2**	**3**	**4**	**5**
3	I believe the e-learning system worth the investment.	**1**	**2**	**3**	**4**	**5**
4	I believe it is worth using the e-learning system.	**1**	**2**	**3**	**4**	**5**

Thank you for your participation

If you like to receive a copy of the findings of this research, please write your information below and return it with the questionnaire.

Name:.....

Organization:.....

Contact Number:.....

E-mail:.....

Appendix C

Questionnaire in Arabic

العوامل التي تؤثر على تبني التعليم الالكتروني
دراسة تجريبية في الكويت

بيان عن السرية
سوف يتم معالجة البيانات الواردة في هذا الاستبيان على انها سرية، وسوف يتم استخدامها فقط لاغراض هذا البحث الاكاديمي. لن يتم نسبة اي معلومات الى اي شخص او منظمة.

الغرض من الدراسة :
يعتبر هذا الاستبيان جزء لا يتجزأ من مشروع بحث الدكتوراه (PhD) الذي يهدف الى بحث العوامل الاساسية التي تؤثر على تبنى التعليم الالكتروني في سياق مؤسسات التعليم العالي في الكويت.
وفي ضوء تبنى التعليم الالكتروني في الكويت، فان حواجز التنفيذ وعوامل التأثير في تبنى التعليم الالكتروني في مختلف المناطق والمجتمعات قد تكون او لا تكون هي نفس الحواجز وعوامل التأثير الموجودة في الدول المتقدمة مع اختلاف درجات الكثافة او الاهمية.

التعليمات :
سوف نقدر لكم ادخاركم من وقتكم مدة تتراوح من 5 الى 10 دقائق لتعبئة هذا الاستبيان، حيث انه لا يمكن استكمال هذه الدراسة دون تعاونكم. وتعتمد الاستجابات على مدى خبرتكم حيث انه لا توجد اجابات صحيحة او خاطئة.
عندما تقوموا باستكمال هذا الاستبيان، يرجى التركيز على تبنى التعليم الالكتروني في الكويت. كما نرجو ان تقوموا بربط كافة اجاباتكم بخبرتكم او تصوركم عن استخدام التعليم الالكتروني.

مبارك الخرينج
جامعة برونيل
Mubarak.alkharang@brunel.ac.uk

القسم الاول : معلومات عامة

يتم طرح هذه الاسئلة بحيث يمكن اجراء مقارنة بين مجموعات مختلفة من المستجيبين.

السن:

- ☐ اقل من 25 سنة
- ☐ بين 25-35 سنة
- ☐ بين 35-45 سنة
- ☐ بين 45-55 سنة
- ☐ اكثر من 55 سنة

الجنس:

☐ ذكر ☐ انثى

خبرات الكمبيوتر

- ☐ اقل من 1 عام
- ☐ بين 1-2 عام
- ☐ بين 2-5 عام
- ☐ بين 5-10 عام
- ☐ اكثر من 10 عام

هل استخدمت نظام التعليم الالكتروني قبل ذلك؟

☐ نعم ☐ لا

القسم الثاني : بيانات البحث

يرجى وضع دائرة او تظليل الرقم الذي يعكس مستوى موافقتك

توقع الاداء

1=غير موافق بشدة 2= غير موافق 3= محايد 4= موافق 5= موافق بشدة

1	استخدام نظام التعليم الالكتروني يعمل على تحسين جودة اداء التعليم	1	2	3	4	5
2	استخدام نظام التعليم الالكتروني يعمل على زيادة كمية انتاجية التعليم	1	2	3	4	5
3	استخدام نظام التعليم الالكتروني يعمل على توفير وقتي في ادارة وظيفتي	1	2	3	4	5
4	استخدام نظام التعليم الالكتروني ليس له تأثير على اداء وظيفتي	1	2	3	4	5
5	أرى ان التعليم الالكتروني مفيد في منظمتي	1	2	3	4	5

توقع الجهد

1=غير موافق بشدة 2= غير موافق 3= محايد 4= موافق 5= موافق بشدة

1	استخدام نظام التعليم الالكتروني يحتاج الى مزيدا من الجهد	1	2	3	4	5
2	تعلم تشغيل واستخدام نظام التعليم الالكتروني سوف يكون سهلا	1	2	3	4	5
3	تفاعلي مع نظام التعليم الالكتروني واضح ومفهوم	1	2	3	4	5
4	بصفة عامة، اعتقد بان استخدام نظام التعليم الالكتروني سهل	1	2	3	4	5

التأثيرات الاجتماعية

1=غير موافق بشدة 2= غير موافق 3= محايد 4= موافق 5= موافق بشدة

1	الاشخاص المهمين بالنسبة لي يعتقدون انه يجب علي استخدام نظام التعليم الالكتروني	1	2	3	4	5
2	الاشخاص الذين يؤثرون علي او الذين اقدر اراءهم يعتقدون انه يجب علي استخدام نظام التعليم الالكتروني	1	2	3	4	5
3	كلما زاد عدد الاشخاص الذين يستخدمون نظام التعليم الالكتروني، سوف يتم توفير الاجهزة والبرامج المناسبة	1	2	3	4	5
4	كلما زاد عدد الاشخاص الذين يستخدمون نظام التعليم الالكتروني، سوف يتم توفير التدريب والدعم المناسب	1	2	3	4	5
5	استخدام نظام التعليم الالكتروني سوف يضيف الى وضعي وصورتي في وسطي الاجتماعي	1	2	3	4	5
6	انا غير مطالب باستخدام نظام التعليم الالكتروني	1	2	3	4	5
7	يتم مكافئة مستخدمي نظام التعليم الالكتروني على استخدامه	1	2	3	4	5
8	الادارة تعي فوائد استخدام نظام التعليم الالكتروني	1	2	3	4	5
9	الادارة تعي المزايا الاستراتيجية من استخدام نظام التعليم الالكتروني	1	2	3	4	5
10	الادارة سوف تطبق وتقيم وتعدل نظام التعليم الالكتروني حسب مراحلة الصحيحة (تخطيط و تصميم و تنفيذ و تحديث)	1	2	3	4	5
11	سوف اواجه مشاكل في اللغة عند استخدام نظام تعليم الكتروني لا يدعم لغتي	1	2	3	4	5
12	مشاكل اللغة سوف تؤثر على فاعليتي التدريسية عند استخدام نظام التعليم الالكتروني	1	2	3	4	5
13	الموارد والمرافق الضرورية للتغلب على المشاكل اللغوية سوف يتم توفيرها عن طريق المنظمة	1	2	3	4	5
14	بصفة عامة، اعتقد ان المنظمة سوف تدعم استخدام نظام التعليم الالكتروني	1	2	3	4	5

الظروف التسهيليه

1=غير موافق بشدة 2= غير موافق 3= محايد 4= موافق 5= موافق بشدة

1	لدي الموارد الضرورية لاستخدام نظام التعليم الالكتروني	1	2	3	4	5
2	لدي المعرفة الضرورية لاستخدام نظام التعليم الالكتروني	1	2	3	4	5
3	نظام التعليم الالكتروني سوف يكون متوافق مع كافة مهامي الوظيفية	1	2	3	4	5
4	سوف يتم توفير التدريب والتعليمات لاستخدام نظام التعليم الالكتروني	1	2	3	4	5
5	سوف يتم توفير اشخاص لتقديم الدعم الفني والمساعدة	1	2	3	4	5
6	الادارة سوف تقدم المساعدة والموارد الضرورية لاستخدام نظام التعليم الالكتروني	1	2	3	4	5

نية السلوك

1=غير موافق بشدة 2= غير موافق 3= محايد 4= موافق 5= موافق بشدة

1	بفرض انني نجحت في الحصول على نظام التعليم الالكتروني، فإنني انوي استخدامه.	1	2	3	4	5
2	باعتبار انني حصلت على نظام التعليم الالكتروني، فانني اخطط لاستخدامه	1	2	3	4	5
3	اعتقد ان نظام التعليم الالكتروني يستحق الاستثمار	1	2	3	4	5
4	اعتقد انه من الجدير استخدام نظام التعليم الالكتروني	1	2	3	4	5

شكراً على مساهمتكم

اذا كنت تحب الحصول على نسخة من النتائج النهائية لهذا البحث، يرجى كتابة المعلومات ادناه وردها الينا مع هذا الاستبيان.

الاسم: .....
المنظمة: .....
رقم الاتصال: .....
البريد الالكتروني: .....

Appendix D

Interview Questions of the Qualitative Study

Section 1: Background Information

These questions are being asked so that comparison can be made between different groups of respondents.

Age:

- ☐ In the twenties
- ☐ In the thirties
- ☐ In the forties
- ☐ In the fifties
- ☐ Above the fifties

Gender:

☐ Male ☐ Female

Computer Experience:

- ☐ Beginner
- ☐ Intermediate
- ☐ Expert

English Language proficiency:

- ☐ Beginner
- ☐ Intermediate
- ☐ Expert

Have you ever used an e-learning system before?

☐ Yes ☐ No

Section 2: An Overview Questions

How do you see the evolution of the ways of delivering learning in your organization over the past five years?

(Aim of this question is to determine the position of e-learning among the traditional methods of learning and the historical background of the company in starting up or implementing e-learning)

To what extent is e-learning used in your organization? Who are the users and what is the range of courses covered through e-learning?

(Aim of this question is to clarify the degree of integration of e-learning)

Did the use of e-learning technologies raise the standards of learning?

(Aim of this question is to stress the importance of quality of e-learning)

Based on your organization's experience, what were the incentives for using e-learning as an integral part of the organization's learning strategy and how did it assess its readiness?

(Aim of this question is determine benefits of e-learning in the learning environment of the organization and the effectiveness of the change of plan used by the organization)

Are the users recognized for using e-learning? How?

(Aim of this question is to highlight the reward system applied by the organization and how it encourages its adaptation)

Section 3: Amended UTAUT Constructs Questions

PE 1: Do you think using the e-learning system would improve the quality and quantity of learning in your organization? How?

PE 2: Do you think the e-learning system would be useful for both users and management in your organization? How?

EE 1: Do you believe that your interaction with the e-learning system would be clear and understandable? Explain

EE 2: Do you think using or learning to use the e-learning system would be easy? Explain

SI 1: Do you feel influential and important people to you think you should use the e-learning system? Why?

SI 2: Do you think the management in your organization would support the use of e-learning? Explain

FC 1: Do you have the resources and knowledge necessary to use the e-learning system? Explain

FC 2: Are there any training programs offered for the users? Is there any support people would be available for assistance? Explain

BI 1: When do you intend to use the e-learning system? Why?

BI 2: When do you think your organization plan to use the e-learning system? Explain

LB 1: If the e-learning system does not support your language (Arabic), do you think it will be difficult to use it? Explain

LB 2: Do you think the language problems would affect the learning effectiveness when using the e-learning system? Explain

MA1: Do you think the management is aware of the benefits and strategic advantages of using the e-learning system? Explain

MA2: Do you think the management would evaluate and revise the e-learning system over its life cycle (plan-design-implement-update)? Explain

MA3: In general, do you believe the organization would support the use of the e-learning system? Explain

G 1: Taking into consideration the challenges both organizations and users encounter, Is e-learning worth the investment? Explain.

G 2: If you could give some recommendations to the management regarding the adoption of e-learning system, what would you say?

Thank you for your participation

If you like to receive a copy of the findings of this research, please write your information below and return it with the questionnaire.

Name:.....

Organization:.....

Contact Number:.....

E-mail:.....