AN INVESTIGATION OF THE APPLICATION OF THE TECHNOLOGY ACCEPTANCE MODEL (TAM) TO EVALUATE INSTRUCTORS' PERSPECTIVES ON E-LEARNING AT KUWAIT UNIVERSITY.

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Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work, and that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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List of Publications

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- Ashkanani, A.[1], O'Hara, J.[1], Lovatt, J.[1], Al-Hassan, A.[2], Tamtam, A.[1], (2015) The Impact of Personal Factors on Instructors Attitude Toward E-Learning System in Kuwait University using the Technology Acceptance Model, 9th International Technology Education and Development Conference. Madrid, Spain.
- Ashkanani, A.[1], O'Hara, J.[1], Lovatt, J.[1], Al-Hassan, A.[2], Tamtam, A.[1], (2015) The Impact of Job Relevant Factors on Instructors Attitudes Towards E-Learning System in Kuwait University Using a Technology Acceptance Model (TAM)., The Clute Institute International Education Conference. San Juan, Puerto Rico, USA

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Table of Contents

List of Tables

List of Figures

List of Abbreviations

A	Attitude
AGFI	Adjusted Goodness of Fit Index
ASTD	American Society of Training and Development
ATT	Attitude
AVE	Average Variance Extracted
BI	Behavioural Intention
Bb	Blackboard
CDL	Centre of Distant and E-Learning
CFI	Comparative Fit Index
CMS	Course Management System
CSE	Computer Self-Efficacy
EFA	Exploratory Factor Analysis
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GFI	Goodness of Fit Index
HEI	Higher Education Institutes
ICT	Information and Computer Technology
IFM	Incremental Fit Measures
IFI	Incremental Fit Index
IT	Information Technology
ITU	Intention to Use
IS	Information System
ISO	International Organization for Standardization

JR	Job Relevance
KU	Kuwait University
KUCIS	Kuwait University Centre for Information Systems
LMS	Learning Management System
NFI	Normal Fit Index
PFM	Parsimony Fit Measures
PCFI	Parsimony Comparative of Fit Index
PNFI	Parsimony Normal Fit Index
PU	Perceived Usefulness
PEOU	Perceived Ease of Use
PE	Prior Experience
PD	Professional Development
PAAET	Public Authority for Applied Education and Training
RFI	Relative Fit Index
RMSEA	Root Mean Square Error of Approximation
SE	Self-Efficacy
SPSS	Statistical Package for the Social Science
SEM	Structural Equation Modelling
SQ	System Quality
SN	Subjective Norm
TRA	Theory of Reasoned Action
TS	Technical Support
TAM	Technology Acceptance Model
USF	University Strategic Focus

Abstract

An investigation of the application of the Technology Acceptance Model (TAM) to evaluate Instructors' Perspectives on E-Learning at Kuwait University.

Alia G. M. Ashkanani

E-learning is a technological innovation that associates technology with learning, and influences a person's behaviour and how they perform their work. It is argued that, although Kuwait University (KU) implemented an e-learning system in 2004, the potential benefits of e-learning, in serving KU's strategic objectives, has not yet been reached. This empirical study aims to investigate KU instructors' perspectives toward the use of e-learning since their acceptance of the system is essential for the success of KU initiative.

The study has applied Technology Acceptance Model (TAM) (Davis, 1989), with the objective to support the model with refined external factors drawn from KU's environment, and to explore the effect of these factors on core TAM constructs, namely; Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) and also to explore the implication on the outcome instructors' Attitude (ATT) toward the use of e-learning at KU. The final external factors included in the research model are Computer Self-Efficacy (CSE), Technical Support (TS) and University Strategic Focus (USF).

The study has adopted the pragmatic methodology with a mixture of quantitative and qualitative approaches, in a triangulated formation of data collection, through a questionnaire, semi-structured, and unstructured, interviews, and focus group discussions.

The responses of 268 instructors to the survey questionnaire form the basis for the quantitative analysis.

The responses of 12 assistant Deans, department heads and e-learning administration staff, 24 instructors, and the results from 2 focus group discussions, form the basis for the qualitative analysis.

Based on the analysis of outcomes, it is found that TAM is a valid and applicable acceptance model in the case of KU's e-learning system, and in line with previous TAM studies, in which the instructors' PU of e-learning directly affects their ATT toward the use of the system. Also, the instructors' PEOU is found through PU to indirectly affect their ATT. In addition, CSE has a significant effect on PU, but less so on PEOU, and, indirectly so, on ATT. Also, a significant effect is found, of TS on PU and in less magnitude on PEOU, and, indirectly on ATT. USF is found to have insignificant effects on PU and a weak effect on PEOU. Moreover, based on the qualitative analysis findings, USF is argued, to be the factor resulting in the most negative attitude toward the use of e-learning by KU instructors. This is due to three causes: Poor policy setting, lack of motivation measures, and ineffective training.

Keywords: Technology Acceptance Model (TAM), Computer Self-Efficacy, Technical Support, University Strategic Focus, E-learning Policy, Kuwait University.

1 CHAPTER ONE: INTRODUCTION

This chapter presents the research background and other factors surrounding the research environment. Here, the researcher explains the purpose behind the research and the specific research objectives. Accordingly, the researcher will outline the research questions, followed by a list of research term definitions, as well as the research design, and a description of the dissertation's structure.

1.1 Research Background

The educational system aims to build and expand upon human capabilities. As such, it often deals with modern technology to reach its ultimate goal. Acquisition of knowledge, as the main purpose behind the educational process, involves a continuous exploration of new methods and tools to support learning. It is argued that the utilization of technology in this endeavour, in modern higher education institutions, should become a necessity, rather than an option, or be limited to certain fields of studies (Badh, 2009). Therefore, higher education institutions in general are now looking to modernize their learning process with new learning platforms such as e-learning, a system that arguably revolutionizes instructor and learner capabilities, learning time, and place, as well as the learning pace (Geetha, 2008).

Kuwait University (KU) is a leading public higher education institution in the state of Kuwait. A decree of the Amir of Kuwait established KU in 1966. KU consists of 16 colleges, housing 1560 instructors and approximately 38000 students (Kuwait University, 2015). In 2004, KU implemented an e-learning system as part of its educational process, for the first time. According to KU reports, and reflected in Table 1.1, the number of e-learning online courses rose from 77 courses in Fall 2006-2007 to 400 courses in Spring 2013-2014, a more than 500% increase in the number of courses over a period of 8 years. Respectively, the number

of e-learners rose from 1572 students in Fall 2006-2007 to 14231 students in Spring 2013-2014 (Kuwait University, 2014). However, in light of the increasing number of new students and the political pressure on KU to meet such educational demands, KU has proposed e-learning as a suitable tool to support the existing learning process and to share the teaching load. As such, e-learning's flexibility, with respect to learning at any time, at any place, would contribute to the optimizing classrooms functionality and success, and would help with the increased number of learners.

Table 1.1 – KU Record of E-learning Courses

Semester	No. of Course	No. of Users
Fall 2006 -2007	77	1572
Spring 2006 - 2007	94	2145
Fall 2007 -2008	132	3623
Spring 2007 - 2008	169	3990
Fall 2008 - 2009	155	4831
Spring 2008 - 2009	147	4360
Fall2009 -2010	195	5826
Spring2009 - 2010	211	5862
Fall 2010 - 2012	186	7853
Spring 2010 - 2012	277	8911
Fall 2011-2012	266	8394
Spring 2011-2012	312	9486
Fall 2012-2013	305	8920
Spring 2012-2013	385	10286
Fall 2013-2014	339	9739
Spring 2013-2014	400	14231

However, in view of KU e-learning utilization, one finds that the number of learners enrolled in e-learning courses is not adequately proportional in comparison to the total number of students attending KU colleges. For example, in Table 1.2 when factoring in the total number of students attending KU in the Spring 2013-2014 semester, those engaged in e-learning

represent 37% of the total number of students (approx. 38000), thus e-learning's contribution to the learning process is relatively small. In addition, KU colleges vary in their utilization of e-learning based on the number of e-learning courses provided by the corresponding colleges (see Table 1.2). Therefore a study of the KU e-learning experiment is necessary if KU is to plan for future students' demands obtaining higher education.

Table 1.2 – Spring 2013/14 Record of E-learning Users Distribution over KU Colleges

College	Courses	No. of Users
Humanities	44	2334
Law	0	0
Sciences	56	1012
Engineering and Petroleum	4	81
Education	52	2077
Sharia and Islamic Studies	6	195
Business Administration	67	2608
Pharmacy	8	118
Social Sciences	64	4166
Women's College	83	1198
Languages Centre	11	310
Graduate School	5	132
Total	400	14231

Significantly, according to Eltartoussi (2009), instructors and learners' adoption of new technology is considered highly important when seeking to implement new technology supported learning processes. Hence, the success of any higher educational organization's implementation of e-learning could be argued to start with the instructors' acceptance of the system (Al-Busaidi & Al-Shihi, 2010).

It is essential to recognize the importance of instructors' role in the e-learning process, as they constitute an influential human element in the process. They conduct teaching, but also facilitate the learning process through the e-learning system (Hussein, 2011). Therefore, the

success of an e-learning system, in meeting the implementation objectives, depends in large part on the instructor's attitude towards e-learning and their active engagement with the e-learning system.

According to Davis (1986), an information technology system is a technological innovation that affects a persons' behaviour and their job performance. Many researchers have highlighted the importance of e-learning in the field of education. It is constantly being researched, as the e-learning system, itself is continually evolving with technology. Moreover, e-learning is still considered a relatively new addition to the educational process, which requires a frequent review of its success in meeting the implementation objectives. This study intends to examine KU's e-learning system from the perspective of instructors, and their acceptance of the technology. Since such a study requires a social psychology based method, the Technology Acceptance Model (TAM) (Davis, 1989) is used as a base model. In view of the available literature on previous studies that were conducted on e-learning in Kuwait, none of the studies have been conducted on KU's e-learning system using TAM as the research base model, nor have they taken into account the KU instructors' perspectives toward the use of e-learning in KU.

1.2 The Purpose behind the Research

The aim of the study is to investigate different sets of factors (variables) that might have a significant effect on instructors' perspectives toward the use of the e-learning system in KU. As explained earlier, although KU have experimented with e-learning systems for a considerable amount of time (12 years), an adequate study of e-learning's effect on instructors is overdue. This study aims to fill that gap. It will have the following objectives:

1. To study KU instructors' perspectives toward the use of the e-learning systems available to them. The study has identified specific factors that are drawn from KU's environment that might have an effect on the instructor's attitude.
2. To use the TAM (Davis, 1989) as the base for the study theoretical model. This study will be the first study to use TAM on KU e-learning systems and to assess the applicability of TAM from the instructors' perspective.
3. To introduce new external factors that influence the two core beliefs that constitute the structure of TAM, namely, Perceived Usefulness and Perceived Ease of Use. University Strategic Focus is a new factor that is drawn from the KU environment, and which has seldom been investigated in information technology systems, and, in particular, e-learning related studies. Thus, to consider such a factor as one of the external variables adds a new perspective to the research model. University Strategic Focus reflects the organizational clarity of strategic objectives and policies related to e-learning that need to be achieved and complied with. The other factors, derived from the literature, that are considered in the study theoretical model are Computer Self-Efficacy, Prior Experience, Job Relevance, System Quality, Technical Support, and Professional Development.
4. The study aims to investigate the specific case of e-learning utilization by KU instructors, where an e-learning system was planned by KU to be an integral part of the learning process, but which suffered setbacks due to inadequate usage of the system and the lack of provision of additional resources to both instructors and students to meet their learning targets. By investigating cases such as this, this study can help highlight recommendations to improve similar initiatives in other Higher Education Institutions (HEI's). Hence, this study aims to assist KU management and

policy makers on improvements that might be required to enhance instructor's perspectives toward e-learning, and to improve their utilization of the system in the learning process.

1.3 The Research Questions

The study investigates the impact of the factors (Computer Self-Efficacy, Prior Experience, Job Relevance, System Quality, Technical Support, and Professional Development), on the two core beliefs that formulate an instructor's attitude toward e-learning and their behavioural intention to use the system, namely, Perceived Usefulness and Perceived Ease of Use of the e-learning system. Accordingly, in order to answer the key question as to whether the TAM model can be applied to investigate instructors perspectives on e-learning in KU, the following two research questions are put forward:

- *Q1: How do a range of variables, from instructors' backgrounds - such as gender, age, Type of college (Art or Science), academic position, teaching experience, different levels of use of the e-learning system, professional development of e-learning, the e-learning system being selected for use by the instructors - influence their perspectives on e-learning at KU?*
- *Q2: What are the instructors' perspectives on e-learning in KU***?**

1.4 Definition of Terms

E-learning: in the broader view, is any usage of technology in education (Donnelly, et al., 2012).

Instructor: KU faculty member who is actively involved in the learning process, holding an academic position of either an assistant professor, an associate professor, or a professor title.

Technology Acceptance Model (TAM): a social psychological model, proposed by Davis (1986). The model postulates that users' acceptance of an information system is when two major beliefs, Perceived Usefulness and Perceived Ease of Use, formulate their attitude toward said system, and determine their behavioural intention to use it.

Perceived Usefulness: the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1986).

Perceived Ease of Use: the degree to which a person believes that using a particular system would be free of effort (Davis, 1986).

Attitude: the degree of evaluative affect that an individual associates with using the target system, whether it is easy to use, and whether it will have a positive impact on peoples' feelings toward it (Fishbein & Ajzen, 1975)

Computer Self-Efficacy: the ability of an individual to apply computer skills to achieve their tasks (Compeau & Higgins, 1995).

University Strategic Focus: the organizational clarity of strategic objectives and policies related to e-learning that need to be achieved and complied with.

Technical Support: knowledgeable people used in assisting the users of computer hardware and software products (Ralph, 1991).

1.5 Research Design

The research adopted a mix of quantitative and qualitative research approaches in order to investigate the instructors' perspectives on e-learning. The objective is to investigate the external variables that affect the instructor's attitude toward e-learning.

A theoretical model was designed, based on TAM (Davis, 1989), to measure the impact of factors drawn from the KU environment on instructors' beliefs, Perceived Usefulness and Perceived Ease of Use, which in turn influence their attitude toward the use of e-learning in all colleges at KU.

The research instruments consist of a questionnaire, interviews, and focus group discussions, which are triangulated to focus on the instructors' perspectives toward the use of an e-learning system at KU and to explore the external environmental variables affecting instructors' attitudes toward e-learning.

1.6 Dissertation Structure

The research dissertation is divided into the following chapters:

Chapter 1: Introduction - Provides the basic intent and purpose of the research. The introduction begins with a description of the research background, followed by the purpose behind the research, then, the research questions are indicated, definitions of research terms are listed, and research design is explained. The chapter then describes the dissertation structure.

Chapter 2: Literature Review – This chapter reviews various e-learning definition, exposes the challenges and opportunities associated with the use of e-learning applications in higher education institutes, along with a review of KU e-learning experience. Then, it presents the theoretical exploration in studying the e-learning system as a technological innovation that affects people's behaviour, starting with the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), TAM and other models, and concludes with detailing the proposed theoretical model used in the study.

Chapter 3: Research Methodology – This chapter describes the research methodological approach. It begins with an overview of research paradigms in social science and arrives at the selected methodology for the study. Then, the chapter identifies the research objectives, research questions and outlines the research design based on the mixed method of the quantitative and qualitative approaches. The design of the study instrumentation namely; the questionnaire, interviews and focus group, is presented, which includes the development of the instruments, the analysis techniques and the analysis tools used in the study. The chapter then ends with an explanation of the ethical stance and considerations surrounding the study work.

Chapter 4: Analysis Results – This chapter is divided into three parts. Part A outlined various analysis techniques that are used to fit the study theoretical model to the collected data and produce the final study model. Part B presents the quantitative analysis results based on various techniques, outlined earlier, and used to examine and validate the research hypotheses. Part C presents the qualitative analysis results, based on the process of coding and themes.

Chapter 5: Discussions and Conclusions - This chapter details the discussions of the findings, conclusions, limitations, recommendations, and future research opportunities.

2 CHAPTER TWO: LITERATURE REVIEW

This chapter explores e-learning definitions in order to explore the correlation between technology and learning and to support the basis for studying the e-learning system as a technological innovation that affects people in the educational process. The e-learning implementation process is examined to find a methodology for higher education to follow, in order to succeed in meeting organizational targets, with respect to e-learning. Furthermore, challenges facing the adoption of e-learning are explored, especially the ones relating to instructors, as these challenges reflect the psychological sphere encompassing instructors within the e-learning environment. The chapter continues with an examination of the KU e-learning experiment, initially, by looking at its historical background and, subsequently, by exploring its organizational structure for supporting e-learning. Finally, the institution's e-learning implementation process and experience are investigated. The purpose of this institutional exploration is to indicate that KU does not deviate from any other higher education organization in the modern world in its e-learning development and implementation process.

In the last part of this chapter, the study's theoretical background is examined, which is based on the core idea that e-learning should be studied from the perspectives of social psychology and behaviour. According to Davis (1986), information systems are technological innovations that influence people's behaviour and reflect positively or negatively on their job performance and for this reason e-learning is examined from that perspective. In addition the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), the TAM (Davis, 1986; Davis, 1989; Davis, et al., 1989), and other related theories were explored, before settling on the model used in this study.

2.1 E-learning Definitions

Scholars have provided a wide range of definitions of e-learning (Gwebu & Wang, 2007). According to Sangrà, et al. (2011), when it comes to defining e-learning, authors with technological background tend to choose definitions centred on technology and access systems that deliver learning, while authors from educational backgrounds normally focus on new educational paradigms and the communication aspect of e-learning in their definitions. Some scholars take a broader view and refer to e-learning as any usage of technology in education (Donnelly, et al., 2012). As a result, e-learning has been defined in many ways and from different perspectives. It is not the intention of this study to give a new definition of e-learning. However, it is necessary to review how others define e-learning and explore the argument that e-learning has always been associated with technology. This would support the study's theoretical foundation, which states that e-learning is an association between technology and the educational process that affects peoples' behaviour and reflects on their job performance.

In the course of exploring previous studies, one finds many e-learning definitions, reflecting many different perspectives. Sangrà, et al. (2011) have conducted a study that sets the objective of developing an inclusive definition of e-learning that "can be accepted by the majority of the scientific community and which will serve as a framework of reference for experts and professionals in this field" (p. 5). This study recognizes the difficulty of attempting to develop a single e-learning definition. Scholars have identified the existence of vast conceptualizations of e-learning in education and Information and Communication Technology (ICT). They suggest that views of e-learning and related definitions are dependent on writers' profiles, specialities, geographical locations, and the advancement of e-learning related technology. For these reasons, they argue that it is hard to capture all e-

learning definitions in a single comprehensive statement (Sangrà, et al., 2011). The definitions cited by (Sangrà, et al., 2011), can be seen in Table 2.1, along with the definitions made by others.

Table 2.1 – E-learning Definitions

No	Year	Source	Definition
1	2001	Gilbert & Jones	The process of extending learning or delivering learning materials to remote places, through the internet, audio, video, satellite, CD-ROM, etc.
2	2001	Gilbert & Jones	Online access to learning from anywhere, at any time
3	2001	European Commission	The use of new multimedia and the internet to improve the quality of learning and increase access to resources and services, as well as boost distance exchange and collaboration
4	2001	Horton cites American Society of Training and Development (ASTD)	Delivery of content via the internet, intranet / extranet (LAN / WAN), audio/video, satellite broadcasting, interactive television, CD-ROM, etc.
5	2003	Garrison & Anderson	Learning facilitated online through network technologies.
6	2003	Ruipérez	Distance teaching, characterized by a physical separation between teacher and student, between whom there is a mainly asynchronous two-track communication, where the internet is the preferred means of communication and distribution of knowledge so that the student is at the centre of an independent, flexible education, since they have to manage their own learning, generally with the help of external tutors.
7	2003	Clark & Mayer	An instruction delivered via a computer that is intended to promote learning.
8	2003	Backroad Connection	A wide set of applications and processes that use all available electronic media to deliver more flexible vocational education and training.

No	Year	Source	Definition
9	2004	Morrison	The continuous assimilation of knowledge and skills by adults stimulated by synchronous and asynchronous learning events, which are authored, delivered, engaged with, supported, and administered using internet technologies.
10	2004	Aldrich	E-learning as a wide combination of applications and processes, contents and infrastructures for the use of computers and networks to improve one or more key parts of education, including its distribution and management.
11	2005	Rosenberg	The use of technologies and the internet to deliver a wide range of solutions to improve knowledge and performance.
12	2005	DOE (US Department of Education)	A set of teaching and learning activities, basically via the internet, which makes use of the learning context, with new communication and resource-rich mechanisms from information technology in order to obtain a new form of learning"; i.e. the concept of e-learning is presented as a new education model, a new comprehensive teaching and learning framework.
13	2005	Khan	E-learning is a creative way to provide an interactive environment, centred around the student, designed well beforehand, accessible to anyone in any place and at any time, and using the properties and sources of computer and digital technology but matched with principles of instructional design.
14	2005	Garcia	Non-face-to-face training that uses technology platforms to increase and improve access to and time for the teaching-learning process to match the skills, needs, and availability of each learner, as well as ensuring collaborative learning environments via the use of synchronous and asynchronous communication tools, and strengthening the competence-based management process as a whole.

No	Year	Source	Definition
15	2005	Alonso, et al	The use of new technologies and the internet to raise the quality of education, improve access to resources and services anywhere, and at any time.
16	2005	Bermejo	Distance education, generally of adults who use computer based communication systems as an environment in which students and teachers communicate, exchange information and interact.
17	2007	González-Videgaray	Learning based on information and communication technologies, with educational interactions between students and contents, students and other students, and students and instructor.
18	2007	Nagi, et al	E-learning provides a platform for students and instructors based on the Internet, which allows them to have a higher interaction level and the accessibility of information from anywhere in the world. Also, a Technological learning system that uses web browsers as a source of interaction between students and instructors and the Internet as a source of providing the means to do so.
19	2008	Bates	All computer and Internet-based activities that support teaching and learning – both on-campus and at a distance.
20	2008	Governors State University	E-learning is following an online course using a modem, Wi-Fi or cable connection to access teaching material from a computer, mobile telephone or other devices.
21	2008	New Zealand Ministry of Communication – Inform. Tech.	Learning facilitated by the use of digital tools that involve forms of interactivity, which could include online interaction between learners and their instructor.

No	Year	Source	Definition
22	2011	Sangrà, et al.	A form of teaching and learning - which may represent a part or the whole of the education model in which it is used - that makes use of electronic media and devices to facilitate access, promote evolution, and improve the quality of education and training

As indicated in Table 2.1, all e-learning definitions seek to emphasise technology's association with learning, education, or training. However, different researchers tend to focus on different aspects of technology. For example, certain researchers focus on the learning aspect of the definition, arguing that technology is merely a vehicle for facilitating learning (Gilbert & Jones, 2001; American Society of Training and Development (ASTD), 2001; Garrison & Anderson, 2003; Ruipérez, 2003; Clark & Mayer, 2003; Morrison, 2004; DOE (US Department of Education), 2005; Garcia, 2005; Bermejo, 2005; Gonzalez Videgaray, 2007; Governors State University, 2008; New Zealand Ministry of Communication, 2008). The views of these scholars are in contrast to others who argue that technology is at the core of the definition of e-learning and must, therefore, be prioritized at a conceptual level (European Commission, 2001; Backroad Connection, 2003; Aldrich, 2004; Rosenberg, 2005; Khan, 2005; Alonso, et al, 2005; Nagi, et al., 2007; Bates, 2008).

Moreover, the use of technology is viewed differently by researchers. For example, some define it as a means to deliver learning (Gilbert & Jones, 2001; Horton, 2001; Clark & Mayer, 2003; Backroad Connection, 2003; Morrison, 2004; Rosenberg, 2005; Australian National VET, 2015). Others argue that its purpose is to allow access to learning (Gilbert & Jones, 2001; Khan 2005; Garcia 2005; Governors State University, 2008; Sangrà, et al., 2011). The researchers also point out the communication aspect of technology that provides a way for collaboration or remote dissemination of learning (Garrison & Anderson, 2003; Ruipérez, 2003; DOE (US Department of Education), 2005; Bermejo, 2005; Gonzalez-Videgaray, 2007; Nagi, et al., 2007; New Zealand MOC, 2008). Meanwhile, the benefit derived from using technology to improve education or the quality of learning is emphasized in the definitions of the European Commission, 2001; Aldrich, 2004; Alonso, 2005; Bates, 2008; Sangrà, et al., 2011.

Sangrà, et al. (2011) suggests that at an earlier stage of e-learning conceptual evolution the definitions were centred on the use of technology, the delivery mechanism, and the purpose of communication. They argue that more recent definitions emphasise education driven purposes and the changes that the e-learning concept brings into the teaching and learning process. Accordingly, they believe that educational goals and learning needs should be placed at the heart of the e-learning definition.

As has already been stated, this study adopts Donnelly et al.'s (2012) definition of e-learning and considers the general association of technology with learning as a basis to study the behavioural aspect of e-learning. Interestingly, Sangrà et al (2011) argue that researchers often use research models that are influenced by their preferred e-learning definition. As such, this study adopts a theoretical model that views e-learning in relation to its association between technology and learning.

It is sensible to indicate here that the pairing between technology utilization and educational purpose, in the concept of e-learning, may be over-shadowed by advances in ICT. "With the blessing of the internet, now we can engage in learning activities without having to come to face-to-face classrooms" (Khan, 2005, p. 26). The development of the internet and search engines, as well as the availability of vast knowledge online, may compete with the educational institution's provision of structured education curricula. One expects that e-learning might be considered by some as a last resort for educational institutions seeking to gain, or indeed regain, control over the very basic purpose of their educational existence. In this understanding, e-learning may constitute the most dominant model used by higher education organizations to deliver knowledge and instruction to learners for the purpose of meeting their educational targets, while competing with other knowledge depository sources,

available freely online, and offered to learners as a means for enhancing their personal and professional lives.

2.2 The Success of E-learning Implementation in Higher Education Institutions

The success of e-learning implementation in educational institutions relies on their organizational strategic planning skills and experience. Although e-learning initiatives are spreading in the education arena in the State of Kuwait, the Middle East, and throughout the world, many educational institutions lack proper planning and policy setting to successfully implement those systems. This reality is often reflected in the success, or lack thereof, of levels of adoption of e-learning initiatives. The work of Titthasiri (2014) in developing a strategic decision-making framework for e-learning system implementation, based on strategic planning processes, and the quality model from International Organization for standardization (ISO) 9126, is considered here a basis for the evaluation of successful e-learning implementation, in general, and at KU, in particular. This model will give the evaluation process a defined tool to explore whether or not the planning and execution capabilities of KU match, in a general sense, those of similar HEI's.

According to Titthasiri (2014), an e-learning system is best symbolized in nested circles (Figure 2.1), where each circle represents a component of e-learning.

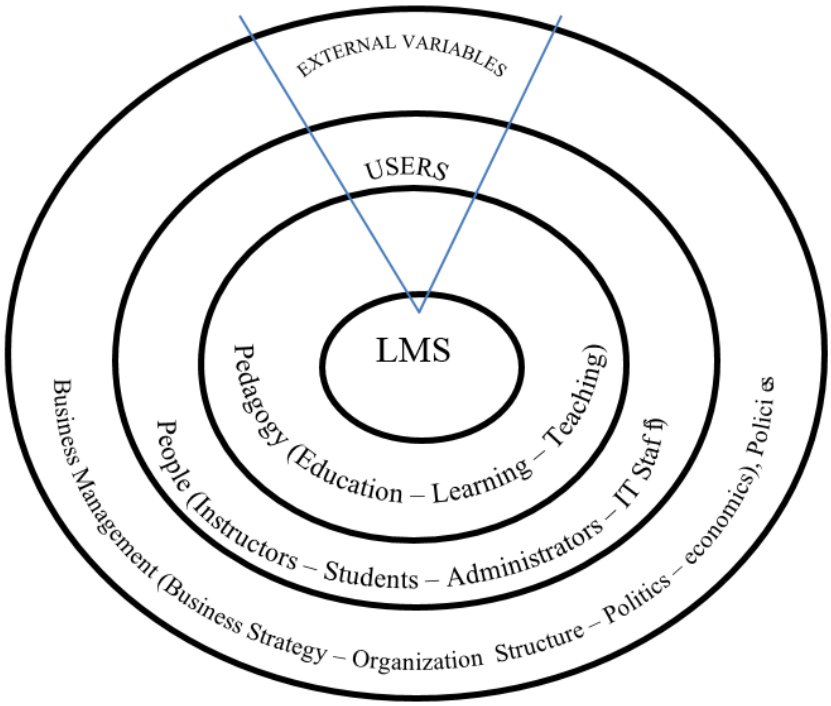

Figure 2.1 – Titthasiri (2014) Presentation of E-learning System

The e-learning system, residing in the-inner-most circle, represents the system hardware and software that is often called the Learning Management System (LMS) or e-learning Course Management System (CMS). Titthasiri (2014, p. 589) suggests that "CMS is considered as an important core supporting all aspects of the teaching - learning process" and argues that "the quality of CMS reflects the success of e-learning system". The aforementioned framework focuses on delivering the CMS with the least amount of mistakes and by meeting the set objectives. The next circle marks the "pedagogy, including education, teaching, learning, and psychological theories underlying e-learning" (Titthasiri, 2014, p. 589). The third circle represents the people, instructors, students, administrators, and IT staff. The outermost circle represents the business and management activities responsible for insuring e-learning growth in the organizational structure, politics, and economics, as well as setting

the policies governing the final product, "e-learning". For the purposes of this study, the circular presentation of Titthasiri's (2014) e-learning system has been modified, with the identification of terms such as "Users" and "External Variables," which shall be discussed further in section 2.5.

Titthasiri's (2014) presentation of e-learning systems concentrates both on the core of the system and on the software in particular. In addition, from the quality point of view, she suggests the use of the ISO 9126 Quality Model to facilitate the analysis of how a system should meet quality aspects (Titthasiri, 2014), including the users' views of the system. In particular, she suggests that attention be paid to the users' position regarding their satisfaction and willingness to use it. Groff and Mouza (2008) have indicated that the instructors, learners, and technical experts are the human factors that influence the success of implementing e-learning systems in HEI's. On the other hand, Khan (2005) points out that the implementation of e-learning systems is dependent on other influential factors, such as infrastructure planning, human resource development, and learners' skills and attitudes towards technology.

Titthasiri's (2014) has formulated a strategic decision-making framework that emphasizes the importance of adopting a mechanism that seeks to ensure a successful implementation of e-learning, based on the concept of "error prevention instead of error correction" (Titthasiri, 2014, p. 589). The framework (see Figure 2.2) outlines the phases of the implementation process.

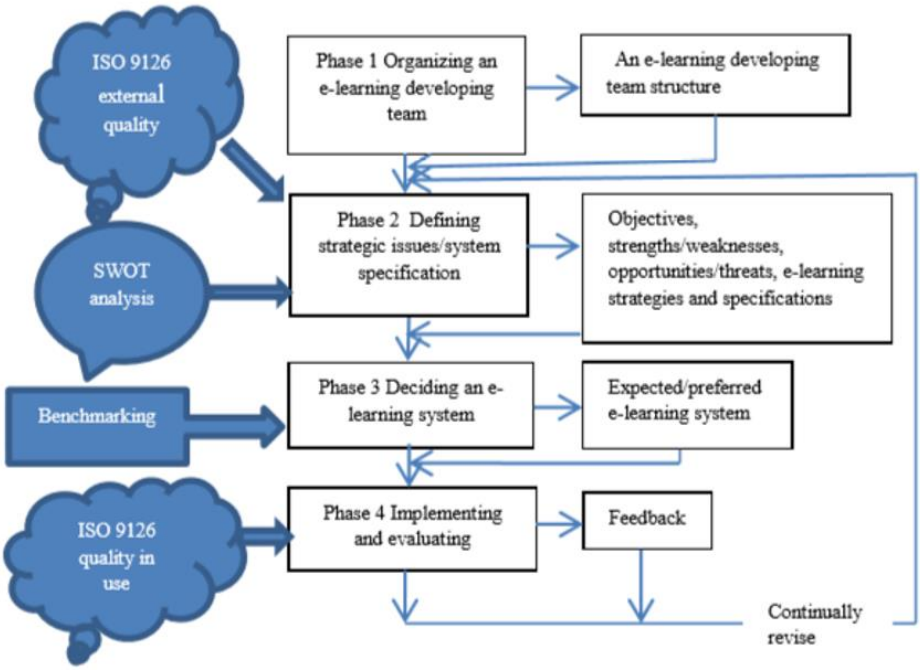

Figure 2.2 – Strategic Decision-Making Framework (Titthasiri, 2014, p. 589)

Based on this framework, it is important to obtain human input throughout the implementation process. Starting at phase 1, the initial formulation of the project team should consist of the 'right' combination of the main stakeholders, such as IT experts, instructors, and policy makers. In phase 2, organizational strengths and weaknesses are identified and evaluated, including human element readiness, along with system infrastructure and the existence of proper e-learning strategies and specifications. In phase 3, the specification of the e-learning system is developed, taking into consideration the human interface. Finally, in phase 4, the requirement of human development is made an integral part of the actual e-learning implementation stage. According to Khan (2005), institutions are responsible for providing proper training to learners, instructors, and IT staff to create an effective e-learning environment. This step, in turn, will support the learning environment where participants can actively learn and be supported. Moreover, instructors may have a sense of achievement

when learners accomplish the objectives of the courses in a positive way, while technical support staff feel pleased when learners receive dependable services without interruptions.

Many studies support the development of the human element of the implementation process and its reflection on the success of an e-learning application. A study by McFeeters, et al. (2008) was conducted on twenty-five faculty members and administrators who were involved in the development of online courses and training. They found that instructors' keenness to develop courses through online education ensured higher levels of success in the classroom. Another study by Menchaca and Bekele (2008) was conducted on a sample of seventy-two learners and six instructors, to identify the success factors of the instructors and learners in e-learning. They aimed to find out the most contributing factors in the success of using technology in the learning process, closely linked to technology tools that assist learning, user characteristics, course design and delivery methods, and support service. The study reflected the importance of the human factors such as users technology-related skills, attitude, experience, and instructor roles in the learning environment influencing, one way or the other, the learning experiences, receptivity of the learners, and instructors' acceptance of e-learning.

A study by Al-Mutawa (2011) sought to investigate the effect of e-learning systems on student skills and their ability to think critically using educational activities and discussion tools. The study was conducted using the experimental method on a sample of twenty-five KU students. The results indicated an improvement in students' core skills as an outcome of using the institutional e-learning system.

On the other hand, the presence of proper infrastructure is essential to the success of the e-learning implementation process. In line with Titthasiri's (2014) framework, during phase two (see Figure 2.2), the organization should evaluate the strengths and weaknesses of

existing infrastructure as a necessary element leading to the successful implementation of an e-learning system. Proper planning to provide the most appropriate infrastructure requirements, is essential, to shift from traditional to online education systems in higher education institutes (Al-Mousa, 2007).

High-speed internet is crucial in facilitating necessary communication and in the downloading of files, multimedia images, and graphics. In addition, high quality internet helps link local institutions of higher learning with international universities for the exchange of information and experiences (Means, et al., 2009). Understandably access to suitable computers and adequately prepared classrooms and laboratories with the latest electronics is considered to be an essential part of proper infrastructure. The required infrastructure should also be designed to both facilitate e-learning activities and to ensure that synchronous or asynchronous communications are integrated within the e-learning software package (Lin, 2011). Another aspect of the required infrastructure is to establish a technical centre to disseminate e-learning, develop specialized training courses, and provide programmers with the necessary skills needed to prepare the curriculum (Al-Mousa, 2007). It is argued that HEI's require a well-established infrastructure, equipment, and centres that provide all basic requirements for e-learning, a physical system, and the human element of the process in order to achieve the desired organizational objectives (Brunsell, 2013).

2.3 Challenges to E-learning

Based on the benefits and advantages perceived, recent years have seen more HEI's engage in expanded e-learning enrolment; however, they are often faced with significant challenges and failures (Mungania, 2003). Khan (2005) argues that HEI's should develop comprehensive strategic and business plans in order to implement e-learning systems

successfully. He puts forward a model for an e-learning implementation framework in the shape of an octagon, with eight edges, representing institutional, management, pedagogical, technological, interface design, ethics, evaluation, and resource support (see figure 2.3).

Figure 2.3 – E-learning framework Source: (Khan, 2005, p. 14)

Similarly, Anderson and Gronlund (2009) studied sixty published papers, with an objective to propose a conceptual framework of challenging issues facing e-learning in developed and developing countries. They divided the challenges into four categories:

- The course challenges related to course content, design, and method of delivery.
- Challenges related to individual characteristics, for students and teachers.
- Challenges related to technology, mainly infrastructure, costs, usability, and fitness.
- Challenges related to e-learning context, organizational, cultural, and social aspects.

Thus the work of Khan (2005) and Anderson & Gronlund (2009) can provide a foundation for any review of e-learning implementation challenges. Most important, in the context of this research, are the ones facing the instructors as they are seen as a crucial element in the successful implementation of e-learning systems.

Menchaca and Bekele (2008) argue that instructors often fear that using e-learning systems may lead to a reduction of their role in the educational process. Organizations should address this issue openly and seek instructors' willingness to shift from traditional to e-learning modes without feeling uncomfortable or less satisfied with their job. Such a condition is often associated with instructors' inability to utilize technology such as using computers (Al-Mousa, 2007). Therefore, instructors' training is one of the most important aspects of an execution strategy for any organization looking to succeed in meeting the requirements of modern and advanced education technology (Judith, 2004). Ginzburg, et al. (2010) conducted a study, with the objective of assisting in the training and professional development of instructors, allowing them to acquire the skills that make them competent online instructors, masters of instructional design, effective online communicators, and appropriate users of available technology. The study used a sample of twenty-three faculty members. The results showed that preparation of faculty members is essential to meet the challenges of online education.

In addition, another challenge is instructors' fear of lack of privacy and confidentiality. This is particularly prevalent in a cultural milieu that emphasizes incidents of hacking, viruses, and content corruption that can take up instructors' time, as well as challenge their personal and professional security (Al-Mousa, 2007). The solution to this is strong data protection measures to prevent the occurrence of lost or damaged content and ensure the rights of publishers of online content (Leem & Lim, 2007).

It is important to overcome technological challenges such as hardware limitations and under-performing internet network, with low bandwidth (Wong, 2007). Therefore, instructors and learners need a good infrastructure, free from system faults, with reliable hardware and software that are continuously updated.

Another challenge is the organizational lack of knowledge needed to select the correct e-learning technology or the associated problem of not being able to provide the required resources and budget necessary to support the system (Cheung & Vogel, 2013). It is necessary to have adequate governance measures within educational organizations to support the work in an electronic environment. Instructional quality, staff support policies, and intellectual property rights are integral components needed to implement e-learning programmes. The reality is, however, that many higher education institutions' readiness to enter into the age of modern technology is often obstructed by inflexible administrative procedures, poor coordination, and the absence of appropriate legislation (Sanders, 2010). The absence of rules and regulations granting a degree to learners in e-learning environments would weaken or even disable the application of the e-learning process (Green, et al., 2012). Hence, restructuring administrative management, commensurate with the requirement of e-learning, is essential.

The challenges facing e-learning implementation in HEI's may or may not change across different cultures or between developed countries and the developing countries. A recent study by Alkharang and Ghinea (2013) was conducted to investigate the barriers affecting the adoption of e-learning in HEI's in Kuwait as a sample of a developing country and compare it to those of the developed countries. The scholars have reviewed the literature to underpin the most common barriers to be used in the comparison process. They conducted semi-structured interviews with 15 academics and managers from six HEI's, two public ones (Kuwait University and Public Authority for Applied Education and Training), and four leading private colleges in Kuwait. The collected participants' views and opinions formed the basis for the study thematic analysis. The study findings were grouped under three categories namely; management awareness and support barriers, technology barriers and

language barriers. The study concluded that management support and language barriers take a higher position in the ranking of barriers facing e-learning implementation in which, Kuwait deviates from the developed countries. Moreover, the study highlighted that management, lack of awareness and support, and when its strategy alignment deviates from the very crucial aspect of the intention to build an e-learning culture, was considered the most hindering factor to the e-learning initiative. Other barriers such as poor infrastructure, lack of technical support, language difficulties faced by academics and students, have scored high in the study's evaluation and included in the study's outcomes.

2.4 E-learning in Kuwait University

2.4.1 Brief History of the State of Kuwait

Kuwait is a small state that has a comparatively open economy, with high crude oil reserves. Petroleum accounts for nearly 95% of export revenue. Kuwait Gross Domestic Product – (GDP) is listed as the third highest among the six Gulf Cooperation Council (GCC) States. A good part of the petroleum income is devoted to education and health.

The education system in Kuwait is divided between public and private provision. However, the government of the State of Kuwait regulates all schools and all HEI's. Public higher education in Kuwait consists of Kuwait University (KU) and the Public Authority for Applied Education and Training (PAAET). There are also private universities in Kuwait that offer a variety of full and part-time courses in various subjects (Kuwait_University, 2006).

2.4.2 Brief History of Kuwait University

KU was founded in October 1966 by a decree of the Amir of State of Kuwait, five years after Kuwait became an independent State. It started with two colleges: College of Arts and Sciences, and the College of Education for Women. During the period from 1967 to 2011,

KU evolved significantly, with the establishment of additional colleges and the re-structuring of existing ones. Presently, KU consists of (16) colleges under the following names, along with the years of establishment:

- College of Arts (1966)
- College of Law (1967)
- College of Science (1971)
- College of Medicine (1973)
- College of Engineering and Petroleum (1974)
- College of Graduate Studies (1977)
- College of Education (1980)
- College of Sharia and Islamic Studies (1981)
- College of Allied Health Sciences (1982)
- College of Business Administration (1995)
- College of Pharmacy (1996)
- College of Social Sciences (1998)
- College of Life Sciences (2003)
- College of Dentistry (2005)
- College of Architecture (2010)
- College of Computer Science and Engineering (2011)

KU started with 418 students and 13 faculty members. The figures grew to the present count of 38,648 students and 1565 Faculty members (Kuwait University, 2015). It is the role of the Ministry of Education to set the educational goals for the State of Kuwait and to develop the general standard of technology use, including the introduction of computer technologies such as e-mail and the World Wide Web to the educational arena.

2.4.2.1 Kuwait University Centre for Information Systems (KUCIS)

KU Centre for Information Systems (KUCIS) was established in 1971, with a remit to support ICT initiatives at KU, including the supervision of ICT operations and computer resources throughout KU departments and work centres.

In 1992, KUCIS established a network system to facilitate connectivity between all campus sites, colleges, and KU departments. Furthermore, in 1997, a new strategy for information advancement was formulated, which led to the application of KU administrative systems. In 2000, KUCIS initiated the implementation of the new Student Information System and provided Internet services with high network security to faculty, staff, and students. The centre is committed to providing quality services for a wide range of academic, scientific, and administrative functions through E-Systems.

2.4.2.2 Kuwait University Centre for Distance Learning (CDL)

The Centre for Distance Learning (CDL) was established in 2001, with the sole purpose of embedding an e-learning system within KU educational processes. The centre facilitates the e-learning process and transmits higher education programmes to the students, through interactive technologies, with e-capabilities such as multimedia, e-communication, and e-conferencing. The centre's role includes developing programmes, creating classes, establishing networking labs, and linking faculties and facilities, while maintaining high technical support to instructors and learners. Currently, the CDL provides links that connect KU with other distinguished HEI's in the world (Kuwait University, 2014).

2.4.3 E-Learning System Development at Kuwait University

KU has invested heavily in the establishment of e-learning systems, based on its vision for the future of education and the recognition for the need to incorporate advanced technology into the education process. Comparing the process suggested by Titthasiri (2014), Strategic Decision-Making Framework for e-learning implementation process, it can be argued that KU has developed an approach that mirrored the stages set out in the framework (see Figure 2.2), and listed below.

- Phase One – Organizing an e-learning development team
- Phase Two – Defining strategic issues / system specification.
- Phase Three – Selection of an e-learning system
- Phase Four – Implementation of e-learning system and evaluation

The purpose of reviewing KU's approach is to support the argument that it does not deviate from any other HEI in the modern world, with respect to the implementation process of e-learning systems. This, in turn, necessitates the requirement to study the e-learning experiment and its impact on instructors' behaviour at KU.

Phase One – Organizing an e-learning developing team (Titthasiri, 2014)

In May 2001, the first e-learning volunteer committee was established, with members from KU faculty and the Centre of Information System, which reflected the involvement of the main system stakeholders from the start. The committee studied existing infrastructures and put forward an upgrade plan for hardware and software. Furthermore, the committee conducted a pilot project and selected the first e-learning software, namely IBM Learning Space 5. Once the system was established, two courses were selected from the college of Education and Engineering for initial delivery under the system. The course contents, including necessary multimedia, were developed along with an IBM team and further reviewed and corrected by course instructors. During September 2001, initial training was given to students and KU staff on content, navigation, discussion board, virtual classroom usage, and communication with email. The system was tested on selected groups of students in both courses throughout three semesters. At the end of the pilot project, the committee submitted an evaluation report to the KU vice Rector for Academic Services in October 2002. Subsequently, the KU rector established three committees:

- Steering Committee for e-learning policies and needs (24th December 2003)
- E-learning Technical Committee (24th December 2003)
- E-learning Academic Committee (11th April 2004).

Phase Two – Defining strategic issues / system specification (Titthasiri, 2014)

During this phase, KU established e-learning system objectives and classified them into academic, administrative, and long-term objectives. The academic objectives addressed instructors', as well as learners', needs. For example, it was suggested that the e-learning system should relieve the instructors from repetitive tasks and provide them with tools to update teaching material. It was further argued that the system should support the learners' ability to learn, and create learning environments, such as team learning that promotes the role of instructor as a learning facilitator.

The administrative objectives were to introduce the process in phases and reduce implementation costs. In contrast, the long-term objectives were in place to encourage the utilization of e-learning systems in the education process, which depended on how easy would the instructors be able to access the e-learning system and on how they could utilize such system to benefit learners.

Phase Three – Selection of an e-learning system (Titthasiri, 2014)

In this phase, the Academic Services Department at KUCIS prepared a detailed comparative study between various learning management systems available in the market. This study resulted in selecting the Blackboard (Bb) learning management system for the second pilot project. The selection process considered Bb to be a suitable platform for the pilot based on its use in a number of similar settings. There was also a judgment made that the system appeared to have the technical functions and features that were compatible with KU's needs

such as compliance to standards, ease of use, scalability, and capability to integrate with other systems. In addition, KUCIS selected and installed the proper hardware devices, servers, and software necessary for installing the Bb system.

Phase Four – Implementation of e-learning system and evaluation

Starting from the summer 2004/2005 semester, KU conducted training courses on Bb functions, as well as technical and administrative aspects of the system. The training covered instructors, learners, and support staff involved in the system. Subsequently, around 20,000 KU learners were registered in the system.

According to KU reports, the number of e-learning online courses rose from (77) courses in Fall 2006-2007 to 307 courses in Fall 2012-2013 (Figure 2.4), reflecting around a 400% increase of the number of courses offered by KU to learners over a period of 6 years.

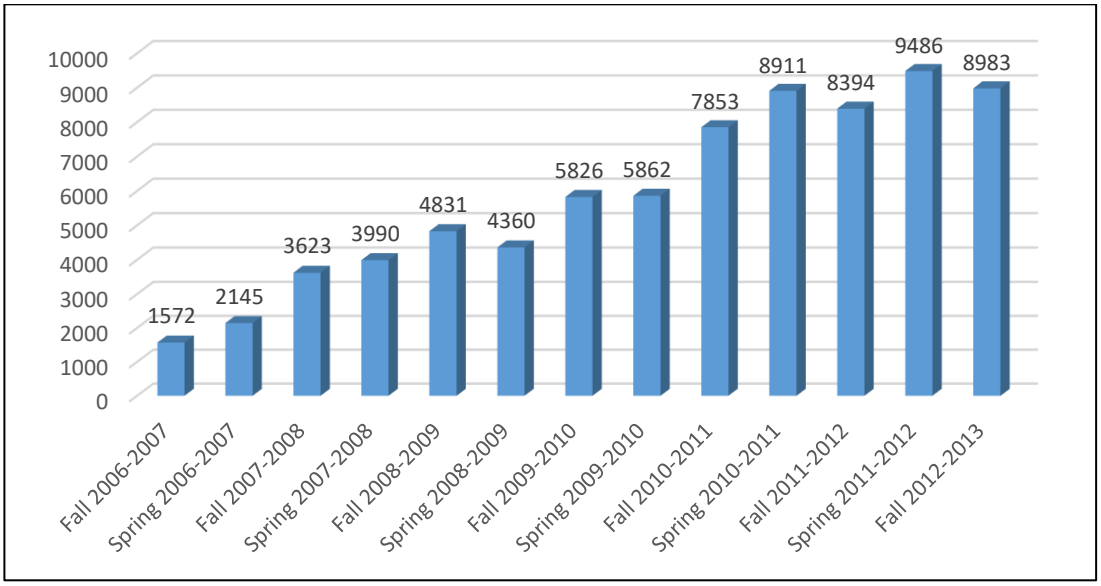

Figure 2.4 – Online Users Statistics (Kuwait University, 2014)

Respectively, the number of users rose from 1572 users in Fall 2006-2007 to 8983 users in Fall 2012-2013 (see figure 2.5) (Kuwait University, 2014).

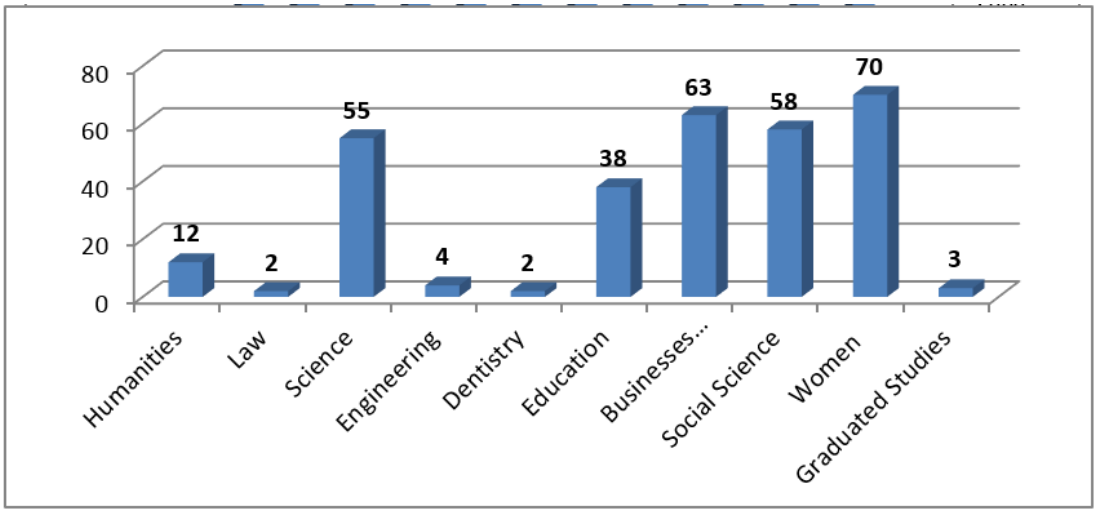

Figure 2.5 – Online Courses Statistics (Kuwait University, 2014)

In a review of KU Fall 2012-2013 statistics, the highest number of users were registered in College of Business Administration (2485 users) (see Figure 2.6), while a major number of courses offered online were in women's colleges (70 courses) (see Figure 2.7).

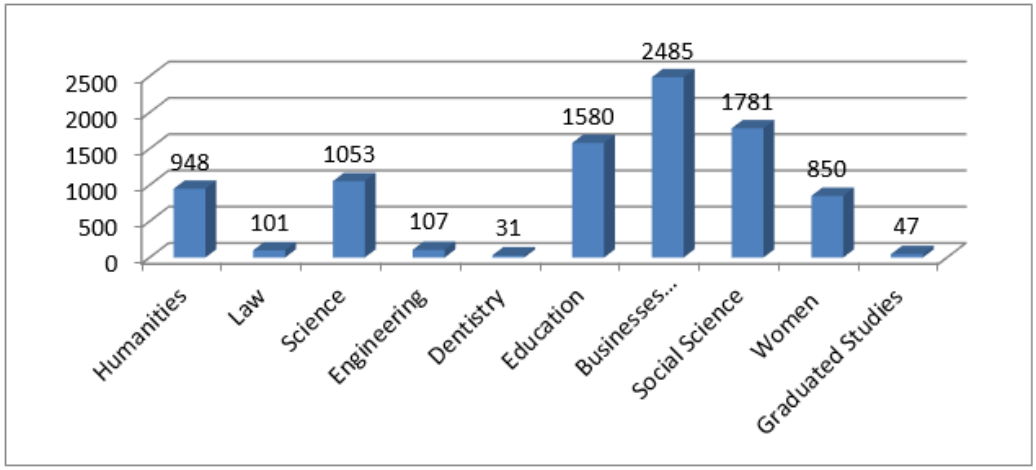

Figure 2.6 – Student Count for Fall 2012- 2013 Semester

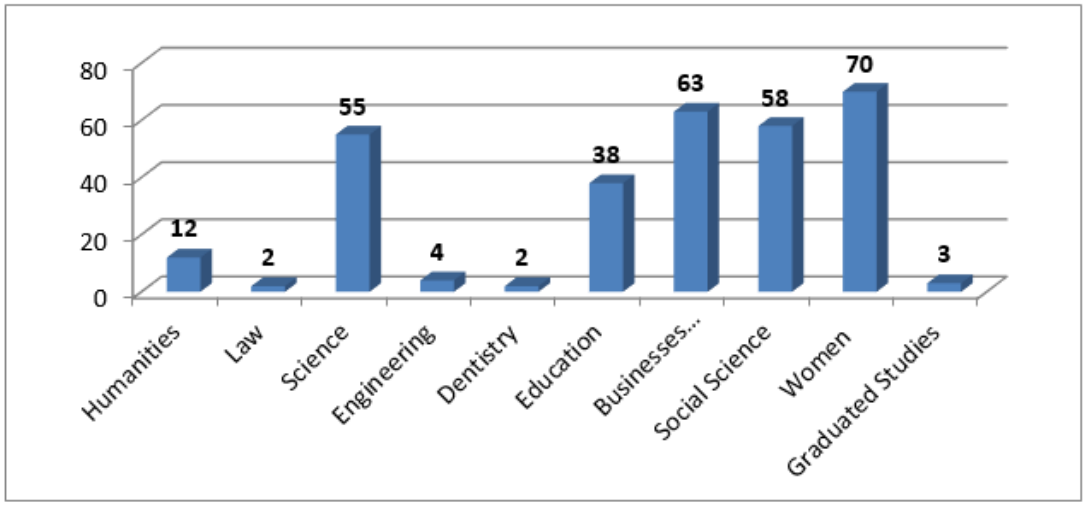

Figure 2.7 – Course Count for Fall 2012- 2013 Semester

In a review of given data, the average number of users per offered online course is considered an encouraging factor for KU to continue the process of adopting e-learning applications. However, attendance of online courses is not evenly distributed throughout all KU colleges. Furthermore, based on the most recent known number of learners attending KU, which is around 38,000 (Kuwait University, 2015), it is arguable that the KU e-learning experiment should be further extended. Accordingly, it draws the importance to study KU instructors' attitudes toward e-learning implementation, as well as the learners' experience using it, and be a crucial element in the strategic review of KU policy on e-learning.

In summary and in comparison to Titthasiri's (2014) Strategic Decision-Making Framework, it is argued that KU's e-learning development process has followed proper system implementation procedures and delivered an e-learning system to the applicable standard at the time of implementation. However, as an HEI, continuous evaluation of the system and the cultural behaviour associated with it is needed.

In the next section, the theoretical background for the study is discussed, where various theories on studying the e-learning system, from both behavioural and technological aspects, are explored.

2.5 Theoretical Background

Many challenges face researchers in information systems, but the more complex ones are those that revolve around the users' reasons for accepting or rejecting the system (Swanson, 1988).

Investigators have studied the impact of users' internal beliefs and attitudes on their usage behaviour (Davis, et al., 1989). Based on the work of Swanson (1982) and Christie (1981), information system investigators have suggested intention models from social psychology as a potential theoretical foundation for research on the determinants of user behaviour (Davis, et al., 1989). Among the many theories used by researchers, the theory of reasoned action (TRA), by Fishbein & Ajzen (1975), is considered a "well-researched intention model that has proven successful in predicting and explaining the behavioural intention across a wide variety of domains" (Davis, et al., 1989). Davis (1986) ultimately developed TAM by adapting TRA in the information system domain.

2.5.1 The Theory of Reasoned Action (TRA)

TRA is a social psychology model (see Figure 2.8) used to study determinants of consciously intended behaviours (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975).

The TRA model as defined by Fishbein & Ajzen (1975) and adopted by Davis (1986) is seen as offering a useful conceptual starting point and series of categories that can allow researchers to explore the extent to which individuals engage with specific processes or actions. For example, Behavioural Intention (BI) is defined as "a measure of the strength of

one's intention to perform a specific behaviour" (Davis, et al., 1989). Attitude (A) refers to "an individual's positive or negative feeling (evaluative affect) about performing the target behaviour" (Davis, et al., 1989). Subjective Norm (SN) refers to the person's perception that important people to him/her think he/she should or should not perform the behaviour in question (Davis, 1986).

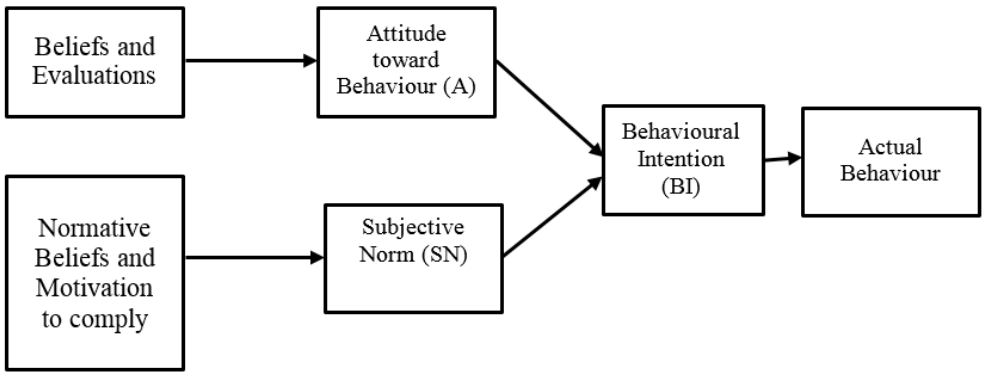

Figure 2.8 – Theory of Reasoned Action (TRA) model by (Fishbein & Ajzen, 1975)

According to TRA, a person's intention to perform a certain behaviour is a causal determinant of his/her actual performance of that behaviour, and the intention is determined by his/her attitude toward performing the behaviour, as well as the perceived social influence of people important to him/her (Davis, 1986).

Fishbein and Ajzen (1975) theorize a tight relationship between a person's beliefs and attitudes, arguing that attitude is altered only through changes in a person's belief structure (Davis, 1986). A person's attitude toward a given behaviour is a function of the perceived consequences of performing the behaviour in question (Davis, 1986). Therefore, it is argued that the Subjective Norm is a function of the perceived expectation of a person's referent (individual or groups) that formulates a person's motivation to comply with such

expectations. Thus, the Fishbein and Ajzen model provides the motivational linkages between stimuli that system characteristics may form and the resulting behaviour.

Davis (1989) has highlighted a crucial aspect of TRA, especially in an information system environment, showing how "other factors that influence behaviour does so only indirectly by influencing A, SN or their relative weight" (Davis, et al., 1989). Such factors, which are referred to as "external Variables" (Fishbein & Ajzen, 1975), are related to the domain where the actual behaviour is expected to be performed. Information systems, system characteristics, design aspects, system development process, surrounding environment, system support, etc., are the domains where external variables are derived.

2.5.2 Technology Acceptance Model (TAM)

Davis (1986) reviewed a range of literature on technology adoption in order to identify the belief structure for a person's attitude toward using technology in a range of organizational environments. Davis (1986) adopted TRA as the theoretical base model for the TAM (see Figure 2.9); "A key purpose of TAM is to provide a basis for tracing the impact of external factors on internal beliefs, attitudes and intentions" (Davis, et al., 1989, p. 985).

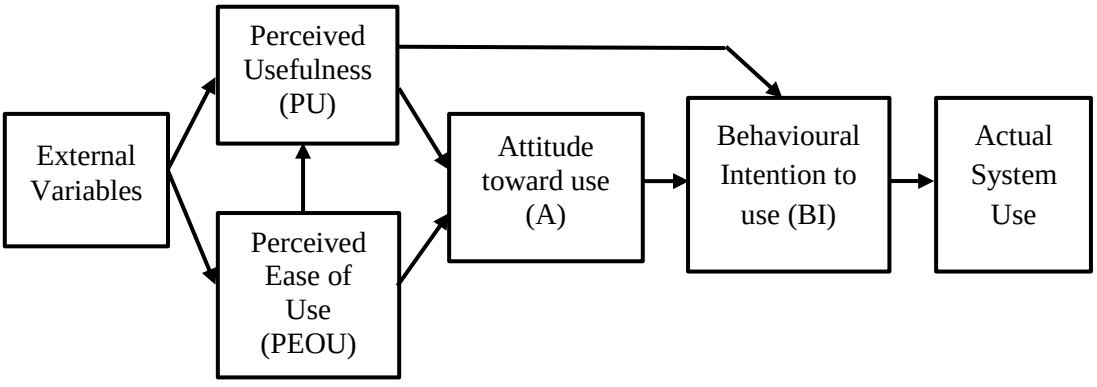

Figure 2.9 – Technology Acceptance Model (TAM) by (Davis, 1989)

Davis (1986) proposed that users' attitudes toward specific systems are a function of two major beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). PU is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). Individuals view a system positively (an attitude), if they think it improves their job performance (where they perceive its usefulness). They develop a positive attitude and increase their readiness to engage (a behaviour intention) in the usage of the system. On the other hand, PEOU is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). Attitude refers to the degree of evaluative affect (Fishbein & Ajzen, 1975) that an individual associates with using the target system (Davis, 1986).

An easy to use system will have a positive impact on peoples' feelings toward it. According to (Davis, et al., 1989), PU and PEOU are statistically distinct dimensions (Hauser & Shugan, 1980 and Larcker & Lessig, 1980). PEOU has a significant effect on PU, as a system that is easier to use will result in the increase of job performance (Davis, 1986). As explained above, these two beliefs are nourished by the person's response to external factors, which are associated with the features of the system in question and the environment surrounding it.

TAM postulates that computer usage is determined by BI, which, in turn, is jointly determined by a person's attitude (A) and PU (Davis, et al., 1989). Thus, people formulate their intention to use a computer system when they find that it increases their job performance, despite their feeling (Attitude) toward it (Davis, et al., 1989). According to Davis, et al. (1989), "enhanced performance is instrumental to achieving various rewards, such as increased pay and promotions", although such a view is difficult to distinguish from a person's attitude, as it is still developing deep within the person's mind.

TAM (Davis, 1986) differs from the original theoretical base theory, TRA, in that it omits the Subjective Norm (SN) from the model, due to its uncertain theoretical and psychometric status. It is suggested that SN will affect behavioural intention (BI), via one's A, but not directly (Davis, et al., 1989).

External variables have an effect on one's A toward usage of specific systems and his/her BI indirectly via PU and PEOU (Davis, et al., 1989). PU can be affected by various external variables, over and above PEOU (Davis, et al., 1989). The impact of system features (External Variables), on both PU and PEOU, has been studied and documented by many researchers (Davis, et al., 1989).

In Davis's (1989) opinion, TAM's emphasis on the concepts of PU and PEOU, as two fundamental and distinct constructs, marks a clear deviation from the original base model TRA. However, Davis argues that this model allows researchers to better trace the influence of external variables on the ultimate end user behaviour (Davis, et al., 1989).

Since the two journal articles that introduced TAM (Davis, 1989) and (Davis, et al., 1989), the Institute for Scientific Information's Social Science Citation Index had listed 424 journals that have adopted TAM (Venkatesh & Davis, 2000). Without any doubt, researchers have received TAM as a well-established and applicable model for predicting user behaviour toward information system usage.

In line with Wolf (1986) and Rosenthal & Matteo (2001), it is argued that meta-analysis is considered another approach to qualitative and narrative literature reviews. King and He (2006) conducted a statistical meta-analysis of several independent studies, related to the subject, with the aim of reviewing the research context by combining and analysing the results of many empirical studies (Figure 2.10). The study considered 88 published papers

that applied the TAM model to various technologies, concluding that TAM stands as a valid and robust model, with potential applicability in a wide range of technology contexts.

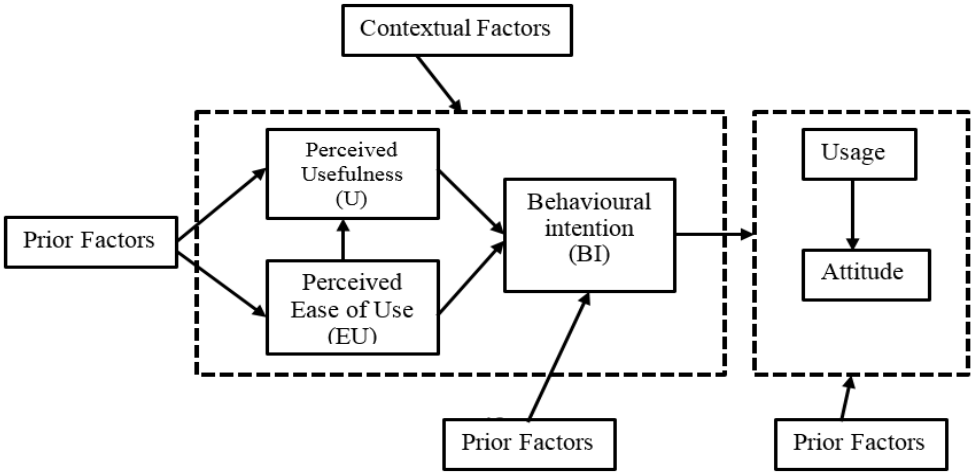

Figure 2.10 – Meta-analysis study model by (King and He, 2006, p. 741).

The study has also concluded that, while TAM was used at the core of a range of research models, various modifications were made to expand TAM's applicability in a wider range of research situations. Such modifications represent the inclusion of prior factors; such as, the extension of TAM predictive power, by adding other related theories, the addition of moderator factors (gender, culture, and technology characteristics); or the inclusion of consequence measures (attitude, perceived usage, and actual usage).

The major findings of King and He's (2006) meta-analysis are summarized below:

- All TAM paths correlations are significant. They are strong for the U-BI relationship, consistent for the EU-U relationship, and positive, but inconsistent, for EU-BI, in the studies analysed. This suggests that the major effect of the EU is through U, rather

than directly on BI, and such a direct relationship is so variable that, in order to focus on it, a substantially large sample would be required.

- The effect of the EU on BI is very important in internet applications (Context). This is worth considering when one investigates the system's flexibility (works at any place, at any time).
- Task application and office application are similar, which brings to mind the closeness in viewing normal computer applications and more task-oriented applications, such as e-learning conducted through computer technology.

2.5.2.1 TAM in an E-learning Domain

E-learning, with the use of ICT, arguably provides education and training to anyone, anywhere, and at any time (Sumak, et al., 2011). Since its emergence, e-learning has been evolving with the advance of technology. Researchers have conducted many studies to predict user attitude, behavioural intention, and actual usage of e-learning systems, in many parts of the world, and across different cultures. While researchers have adopted different prediction models, a significant number of major studies considered TAM as their core research model.

A meta-analysis was conducted on forty-two published papers to investigate the causal relationships proposed by TAM, specifically in e-learning contexts (Sumak, et al., 2011). Two significant insights emerged from this analysis. First, TAM is the most-used theory in e-learning acceptance research. Second, the causal effects between individual TAM related components depend on the type of user, as well as the type of e-learning technology. Furthermore, as indicated in their analysis model (see Figure 2.11), researchers considered

various prior (external) factors in their studies. However, the indicated ones are found to be common in at least three independent studies.

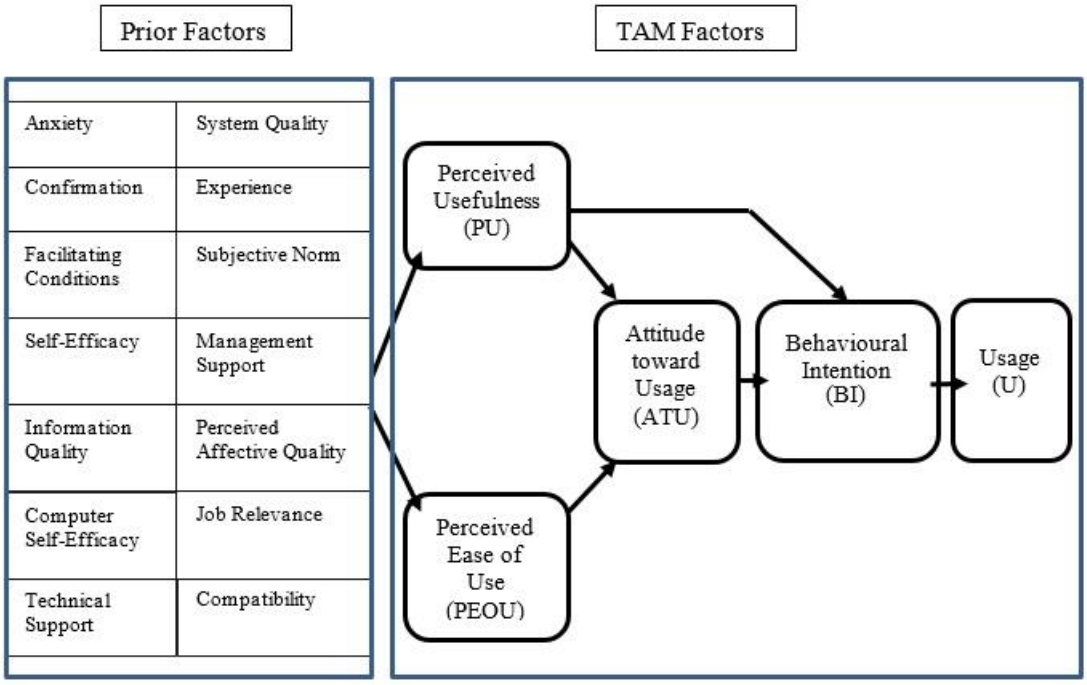

Figure 2.11 – Summary of causal links between TAM-related constructs

A major finding from the analysis has revealed that Attitude toward Using (ATU) and PU have the biggest influence on teachers' Behavioural Intention (BI) to use e-learning technology. In addition, it is most likely that teachers or professors would consider a particular e-learning system useful for their pedagogical purpose, when the system is easy to use and the use of e-learning technology has a demonstrably positive impact on users (Sumak, et al., 2011).

2.5.3 Other Related Models

Delone and McLean (1992) presented the Information System (IS) Success Model as a Framework for Conceptualizing and Operationalizing Information System Success (Delone & Mclean, 2003). However, in 2003, they conducted a 10-year review of the original Delone

and McLean IS Success Model, based on various studies and original papers that were presented in journals. As a result, they have revised the IS Success Model.

The Delone and McLean IS Success Model is based on the concept that IS success is quality dependent. The system user performance is also impacted through system utilization, which, in turn, affects the organization performance. The Delone and McLean Model conceptual journey is presented in (Figure 2.12). Although the Delone and McLean model is considered mainly in business organization settings, with commercial IS application in mind, the model is widely used in other applications.

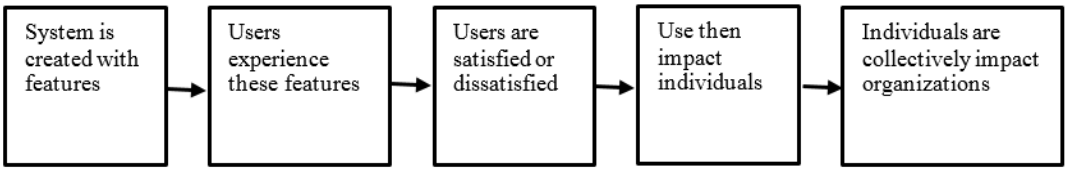

Figure 2.12 – Delone and Maclean IS Success Model conceptual Journey

The original Delone and McLean IS Success model (see Figure 2.13) was constructed with a view that an information system should meet the following targets:

Technical Level → Accuracy and efficiency of the communication system that produces information [Measured in System Quality].

Semantic Level → Success of the information in conveying the intended meaning [Measured in Information Quality].

Effectiveness Level → The effect of information on receiver [Measured in Use, User Satisfaction, Individual Impact, and Organization Impact].

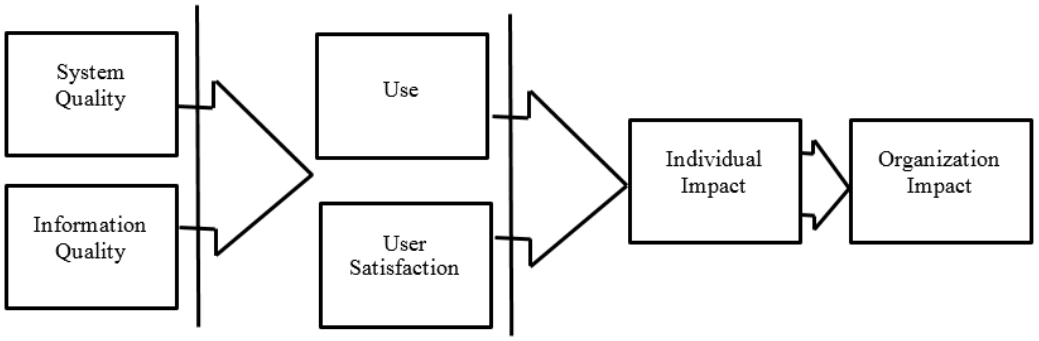

Figure 2.13 – D&M IS Success Original Model, (Delone & Mclean, 2003)

Delone and McLean (2003) explain that IS Success Model considers System Quality and Information Quality as constituting the major contributory factors in the success of any information system. The actual use of the system constitutes a response that affects both individuals and organization. System Quality is measured according to ease-of-use, functionality, reliability, and flexibility. Meanwhile, Information Quality is measured based on accuracy, timelines, completeness, relevance, and consistence. Individuals' impact is measured according to individual performance, job effectiveness, decision-making, and quality of work. Similarly, organizational impact is measured by work performance, although no proof of financial impact was found in the empirical studies.

Furthermore, Delone and McLean (2003) believe that actual usage of the system is an appropriate measure of success; without actual use, the impact on individuals and the organization would not be accomplished. Although they agree with the opinion that 'Use' is a behaviour, they argue that researchers must consider the nature, extent, quality, and appropriateness of system use, when factoring in the benefits of the system. They argue that measuring the amount of time the system is being used does not properly capture the relationship between usage and realization of expected results. For example, if instructors

decline to use an e-learning system, this might be considered an indication that the instructors' anticipation of the system's benefits are not realized.

Delone and McLean (2003) recognize the measurement of other variables that could be considered as causal to IS Success, but not part of the IS Success Model, such as 'User Involvement' and 'Top Management Support.' In addition, they highlight the importance of 'Service Quality' measurement and use of SERVQUAL tools to measure tangible benefits, such as service reliability, responsiveness, assurance, and empathy. Delone and McLean (2003) also agree that Service Quality should be included in the revised Delone and McLean IS Success Model (see Figure 2.14). The researchers realize that the revised model should reflect the behavioural 'Intention to Use' as a step prior to actual system use, despite the fact that 'Intention to Use' is difficult to measure. Meanwhile, they indicate that system use and user satisfaction are cycling in a loop, mandating user continuous usage, and resulting in satisfaction, as long as the system serves the required job functions. Moreover, the revised Delone and McLean IS model realizes that benefits may, partially, be positive or negative for individuals, as well as for organizations. Hence, these two scholars call the generalized form of benefits, 'Net Benefits'.

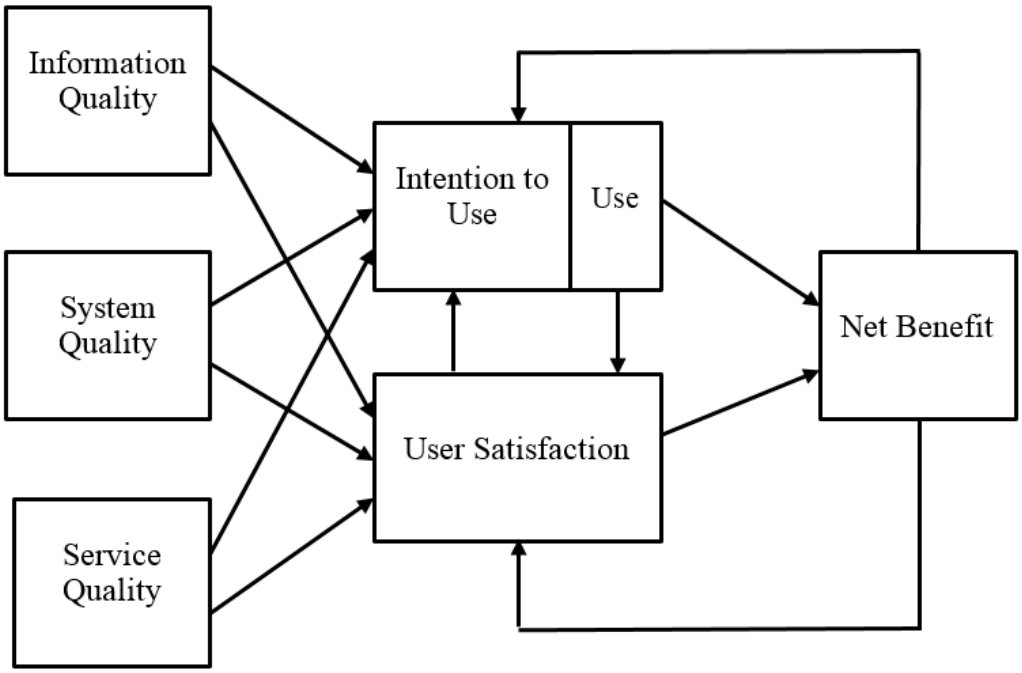

Figure 2.14 – Delone and Mclean Revised IS Success Model

Some researchers measuring the success of information systems have used Delone and McLean's revised IS Success Model. One study was conducted by (Wang & Wang, 2009), who attempted to bridge the relationship between Delone and McLean's IS Success Model and TAM (Davis, 1989). They used the IS success quality constructs, namely System Quality, Information Quality, and Service Quality, as the external variables for TAM, maintaining TRA's original Subjective Norm (SN), but adding Self-Efficacy (SE) variables (see Figure 2.15).

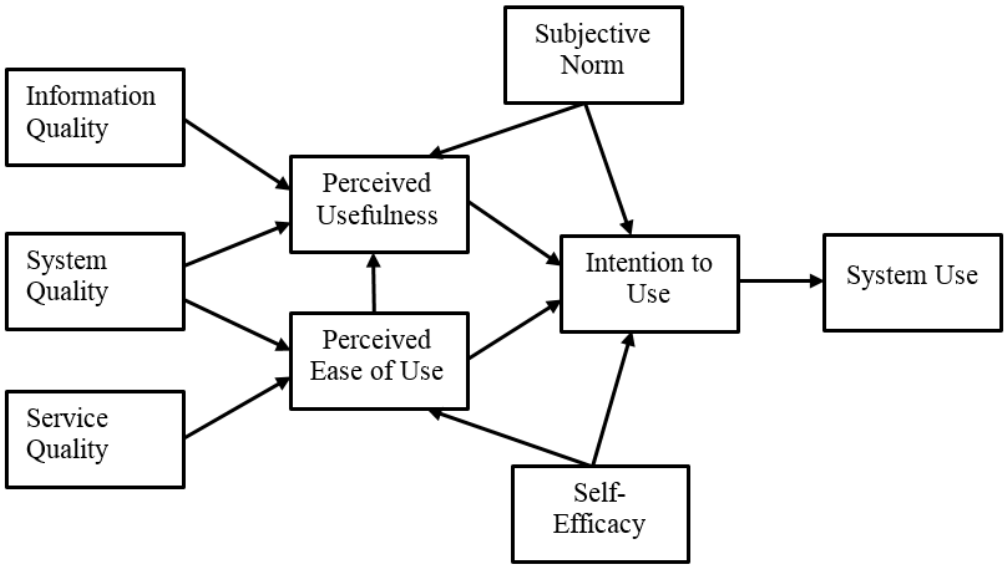

Figure 2.15 – Wang and Wang (2009) research Model

Wang and Wang (2009) have adopted the quality measurement of the IS Success Model. However, they have chosen not to realize the 'Net Benefit' that results from actual use of the Web-Based Learning System, which, in turn, did not complete the actual combination between the two models. In their approach, Wang and Wang have also not recognized that the Delone and McLean IS Success Model was targeting E-Commerce application in organizational settings, which might not be clearly applicable in e-learning applications in a general sense. If one thinks that the instructors' use of e-learning systems is usually imposed in voluntary settings, then the instructors' realization of the benefits would not materialize without actual attempts to use the system. In addition, in studying instructors' acceptance of e-learning systems, the measurement of information quality and system quality is considered much more complex than in an e-commerce system. Because, the suitability of e-learning systems to the instructors' pedagogical needs requires much customization by the instructors themselves and serious involvement in their development. However, (Wang & Wang, 2009)

study is considered relevant, for it supports the use of TAM, from another dimension, and identifies “system quality” as an external factor to consider.

2.6 The Study Theoretical Model

This study has selected TAM (Davis, 1989) as the core of the study theoretical model. Central to the current study is the analysis of TAM-based external variables that are derived from the research environment and relevant to the system in question (e-learning). These variables influence an instructor’s Attitude (ATT) and Behavioural Intention (BI) through the two beliefs: PU and PEOU. Many studies focus on teachers’ and professors’ acceptance of e-learning systems (Hu, et al., 2003; Liaw, et al., 2007; Wang & Wang, 2009; Teo, et al., 2009; Teo, 2009; Sorebo, et al., 2009; Sanchez-Franco, 2010); Pynoo, et al., 2011; Ng, et al., 2013) and use TAM as a base model for their research. However, these studies vary in the selection of external variables. In the proposed model (see Figure 2.16) for this study, the external variables are divided into three categories: Personal factors, Organization factors, and Technology factors.

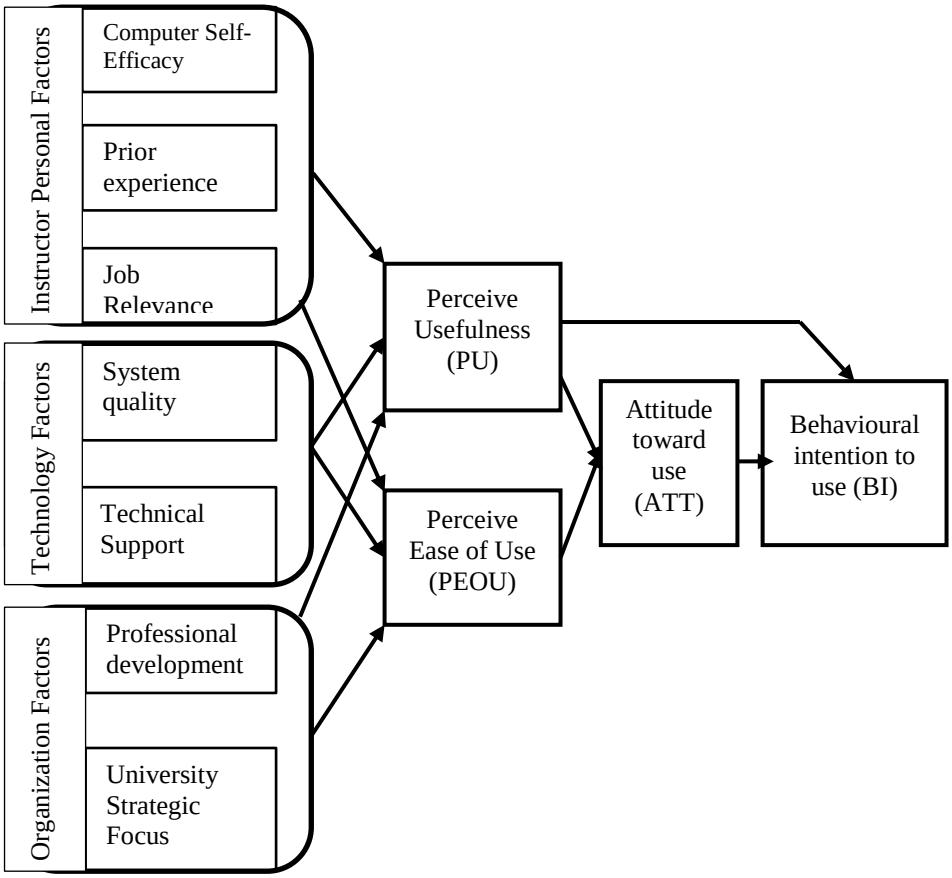

Figure 2.16 – The Study Theoretical Model

The instructor's personal factors cover Computer Self-Efficacy, Prior Experience, and Job Relevance. The organization factors include Professional Development, and University Strategic Focus. The technological factors cover System Quality and Technical Support. These factors are drawn from the environment surrounding e-learning development and usage at KU. Since similar approach to study KU's e-learning system has not been conducted since 2004, the selected factors, above, are necessary to study the instructors' perspectives toward the use of KU's e-learning. These factors will be discussed now.

2.6.1 Instructor Personal Factors

Few studies have investigated the influence of instructors' factors when analysing the acceptance and use of e-learning systems (Andoh, 2012; Ferdousi, 2009). It is suggested that three elements affect instructors' personal factors. These elements will now be discussed.

2.6.1.1 Computer Self-Efficacy

According to Bandura & Wood (1989), Self-efficacy (SE) is one's belief in his/her capability to mobilize the motivation and cognitive resources necessary to meet given situational demands. The concept of self-efficacy has received attention from the organizational behaviour literature. Thus, recognition of self-efficacy reflects an important aspect in implementing computer-based systems effectively. Hence, it is essential to have a reliable measurement of SE (Compeau & Higgins, 1995).

On the other hand, Computer Self-Efficacy (CSE) is the ability of the individual's self-assessment to apply computer skill to achieve their tasks (Compeau & Higgins, 1995). CSE has three effects on individuals, namely, the product of their computer use, their emotional reaction toward computers, and the degree of actual utilization of computers in their work. Several empirical studies found significant effects of CSE on the PU and PEOU of an e-learning system (Ferdousi, 2009; Waheed & Farooq Hussain, 2010; Gong, et al., 2004). CSE's main effect is found on PEOU, because it is recognized that, the higher the core competence in the use of computers, the easier the system will appear to the system user. Therefore, it is an important construct that affects instructors' perspective towards their use of e-learning systems. KU invested in ICT, prior to implementing an e-learning system, so there was a spread of computer utilization among the people involved in the education

process beforehand. Therefore, it is important to study the impact this factor has on KU's e-learning experiment.

2.6.1.2 Prior Experience

Experience with the use of technology is defined by the level of use and the type of computer skills a person acquires over a period of time (Smith, et al., 1999). In the learning process, Prior Experience (PE) plays an important role in the initial adaptation of new technology (Bhattacherjee & Premkumar, 2004). In the view of many studies that adopted TAM, the effect of PE on user acceptance of information systems was among the most studied external variables (King & He, 2006). Instructors' previous experience in using e-learning systems will have a positive effect on their behaviour toward using other e-learning systems (Wang & Wang, 2009; Verschaffel, et al., 2012). Thus, PU and PEOU have a positive correlation with PE (Hu, et al., 2003). In other words, the more experience the instructor has in using an e-learning system, the stronger their intention to use other e-learning systems will be (Ball & Levy, 2009). User PE has complex relationships with other variables and show both direct and indirect effects on a user's acceptance (Ittersum, et al., 2006). The positive experience toward technology will encourage them (positive attitude) to use e-learning systems, as instructors will feel like they can use it without difficulties (PEOU).

2.6.1.3 Job Relevance

According to Venkatesh and Davis (2000), Job Relevance (JR) is defined as "an individual's perception regarding the degree to which the target system is applicable to his or her job" (Venkatesh & Davis, 2000, p. 191). Furthermore, scholars find that JR, as a cognitive judgment, has a direct and positive effect on user PU. Similarly, Hu, et al. (2003) confirm it. JR is among the factors that directly affect the instructors' attitudes to implement the task

easily and effectively. In addition, instructors consider the e-learning system useful when they realize that the system is relevant to their job (Hu, et al., 2003). As a result, JR is a critical determinant of instructors' PU, their ATT, and ITU.

2.6.2 Organizational Factors

2.6.2.1 Professional Development

There are a number of studies that explored Professional Development (PD) within the framework that focused on producing theory-based concepts for better programme design and content dissemination (Dede & Ketelhut, 2009). However, there are limited theoretical and empirical studies on PD as a factor that influences the instructor's perspectives toward using a new e-learning system. One study by Kopcha (2012) views PD as being an important supporting factor to integrate instructors within the environment created by the new technology. Moreover, other studies emphasize that developing instructors, by training and upgrading their technological knowledge and skills, is essential to their acceptance of e-learning systems in teaching practices (Al-Senaidi, et al., 2009). Instructors need to attend training sessions or other forms of development to meet the demands of teaching with e-learning systems. Therefore, there is a need to make institutional administrations aware that instructors need to develop their skills to use e-learning systems (Greer, 2002), otherwise, the absence of clear training and learning policies with intention to develop staff knowledge and skills will become a barrier to e-learning implementation (Alkharang & Ghinea, 2013).

According to Andoh (2012), PD is the success factor that helps the instructors integrate computers into their classroom teaching. The lack of instructors' ICT skills, training, and a failure to update technologies may discourage or affect instructors' readiness to use the e-learning system in the teaching process. At the organizational level, providing introductory

computer training to instructors is one of the most important external variables that determine its PEOU (Ching & Hursh, 2014).

2.6.2.2 University Strategic Focus

The successful implementation of e-learning technology in HEI's has become an important factor in the measurement of their success in meeting organizational targets. To focus on the role of technology, Van Der Wende and Van De Ven (2003) argue that it is one of the main external drivers for change, beside demography, governmental policy, and economic factors. Therefore, the development of University Strategic Focus (USF) is a vital ingredient in the implementation plan for any technology driven initiative in HEI's.

When seeking to define the concept Mintzberg, (1987) argued that "it requires not one, but five particular definitions of strategy; a plan, a ploy, a pattern, a position and a perspective". On the organizational management level, he cited Glueck's (1980, p. 9) definition as "a unified, comprehensive and integrated plan . . . designed to ensure that the basic objectives of the enterprise are achieved". Strategy is often confused with the term 'Policy', which is defined as "the set of basic principles and associated guidelines, formulated and enforced by the governing body of an organization, to direct and limit its actions in pursuit of long-term goals" (Business_Dictionary, 2016). In the context of this study, organization strategy would be the higher plan used to reach the strategic goals, while the policy would take a subsidiary position; a set of guiding procedures that help the assigned entity within the organization in its decision making process.

HEI's have to evolve their strategies in adding e-learning in their educational delivery and support processes. Universities and higher education institutes have to strategically plan the

'learning implementation process' in order for it to be successful. Bates (2000) listed several steps to encourage the use of technology in teaching:

- Identify new target groups that could be reached using technology.
- Define priority target groups and appropriate programmes for the use of technology-based delivery.
- Identify areas of already-existing technology support and encourage people in those areas to provide support for "novice" technology users.
- Identify areas of support outside the department, faculty, or institution. Meanwhile, determine the organizational support staffing for technology-based teaching, if still required in-house.
- Ensure that innovation and the skilled use of technology is properly recognized and rewarded.
- Identify the priorities for face-to-face teaching, in case technology-based learning is successful in meeting the targets.
- Decide on key areas of investment and resource allocation for technology-based teaching.

It is essential to investigate the impact of clear USF on instructors' perspectives toward the use of an e-learning system at the organization level. As explained in section 2.4, the work of Titthasiri (2014), relating to the production of a strategic decision-making framework, for the successful implementation of an e-learning system, supports the focus of this research. In other words, the research seeks to study the impact of USF on the instructors' beliefs with respect to e-learning systems, and their intention to use them, in terms of planning and in the setting of policies.

2.6.3 Technological Factors

2.6.3.1 Technical Support

Technical Support (TS) is one of the most important factors that has a direct effect on PU and PEOU, which affects the users' attitudes toward the e-learning system (Ngai, et al., 2007). According to Ralph (1991), TS is represented by organization staff that have adequate knowledge to assist system users with computer hardware and software problems. Such support can include online support help desks, hotlines, services, machine-readable support knowledge base, faxes, automated telephone voice response systems, remote control software, and other facilities. Although KU CDL and KUCIS have provided software and hardware support on all systems and to all users, the support provided by both centres has never been studied from the perspective of their contribution in shaping instructors' beliefs on e-learning at KU. Therefore, TS is considered one of the external factors in the study's theoretical model.

2.6.3.2 System Quality

System Quality (SQ) refers to the characteristics of a system (Al-Busaidi & Al-Shihi, 2010). According to Delone & McLean (2003), the definition of SQ in the Internet environment measures the desired characteristics of the system in question. Without a doubt, system characteristics such as usability, availability, reliability, adaptability, and response time are examples of qualities that are valued by users of any system. SQ has a positive effect on users' satisfaction (an attitude) and their intention to use, indirectly through PU (Delone & McLean, 2003) (Roca, et al., 2006).

Chapter Summary

This chapter presented the study's main idea - *e-learning is a technological innovation that affects persons' behaviour and influences how they perform their work*. E-learning should be studied using social psychology's theoretical based models. TAM (Davis, 1989) has been adopted as a base model in this study, as e-learning, by definition, is an association between technology and learning process. TAM adaptation in e-learning related studies has also been reviewed. The chapter concludes that an instructor's attitude toward e-learning technology is crucial to the educational process. On the other hand, although KU, as a leading HEI in the State of Kuwait, implemented an e-learning system in 2004 a review of said system is long overdue. KU is considered an acceptable research environment, which has the necessary external factors that would affect instructors' beliefs with respect to the e-learning system and their attitude toward using it. Accordingly, the research theoretical base model was determined, based on Davis' (1989) TAM model, to explore the effect of these factors.

3 CHAPTER THREE: METHODOLOGY

Research methodology offers researchers a systematic way of describing, explaining and predicting a phenomena (Rajasekar, et al., 2013), while maintaining the validity, insight and integrity of the research being undertaken (Matthews & Ross, 2010).

This chapter will describe the research methodology chosen to test the hypotheses and validate the research model being used to investigate the instructors' perspectives toward the e-learning system at KU.

The chapter starts by presenting an overview of the research paradigms in the social sciences, with a view to arriving at the appropriate research methodology for the study. Accordingly, a discussion of the chosen methodology, along with the rationale behind it, is provided. The chapter moves on to identify the research objective and research questions. Next, a discussion of sample identification and size is presented. The chapter then presents the research tools and explains various analytic techniques undertaken in the study's mixed method of quantitative and qualitative approaches. The chapter concludes with an overview of the ethical considerations addressed by the researcher, and closes with a summary of the chapter.

3.1 Research Paradigms in Social Science

Most individuals who engage in research do so to try and to find things out that are relevant to their area of interest. Drawing significantly on the work of Thomas Kuhn (1962) many researchers seek to locate where their work fits within a worldview or 'paradigm'. A paradigm is essentially a way of looking at the world that provides a theoretical framework for any research being undertaken (Mackenzie and Knipe, 2006). On the other hand, Creswell (2003) articulates a more philosophical basis to describe a paradigm suggesting that it is a collection of beliefs and assumptions adopted by the researcher to guide their research work.

Hence, the researcher needs to determine their philosophical position in viewing the social reality, the paradigm that influences every step of their research journey.

In the initial application of Kuhn's work it was argued that there were two main paradigms, positivist and naturalistic. In recent years, this simple division has been challenged by a large number of writers (Creswell, Cohen, Manion, etc.) and the last three decades have seen a strong case being made for the designation of a mixed methods paradigm (Creswell, 2003). This study ultimately relies on the mixed methods approach and, more specifically, the pragmatic theoretical framework. In order to explain how it was developed, we first need to examine, briefly, the main research paradigms.

3.1.1 Positivism/ Postpositivism Knowledge Claim

Positivism is a conceptual view that describes the researchers' approach to study a social phenomenon (Cohen, el al., 2007). Historically positivism as a term was first used by the nineteenth century French philosopher, Auguste Comte, to present a philosophical stance (Beck, 1979), however many writers, such as Mill, Durkheim, Newton and Locke, have sought to develop the concept (Smith, 1983, cited in Creswell, 2003).

Positivism is a "scientific method" where researchers tend to study social sciences in a similar way to natural sciences. It holds that knowledge is acquired through close observation and measurement of the objective reality that exists "out there". Burrell and Morgan (1979, cited in Cohen el al., 2007), argue, from an ontological perspective in a positivist view, that the social reality exists external to the people involved and that it is imposed on their consciousness. Burrell and Morgan take this view further and suggest a separate set of philosophical assumptions related to human nature and the relationship with the environment in which they describe the subjects of the study as puppets responding mechanically and

deterministically to their environment (Cohen, el al., 2007). From an epistemological perspective a positivist views the claimed knowledge as hard, objective and tangible which requires the researcher to take on the role of an observer of the social phenomena. In this epistemological approach the term Postpositivism evolved from the term Positivism when scholars started to challenge the notion of an absolute "true" knowledge from studying human behaviour and actions (Phillips and Burbules, 2000), with one being 'positive' about it (Creswell, 2003).

In this study, the term Postpositivism is more closely aligned to the scientific approach, based on Creswell's (2003) explanation below.

- Postpositivism reflects a 'deterministic philosophy, in which causes determine the effects or outcomes'. Hence, researchers investigate, hoping to discover the common casual laws that regulate and determine human and social behaviour.
- In the course of the research, postpositivists adopt a reductionist approach, in which ideas are reduced into small and discrete set of components called variables, and they constitute research hypotheses and research questions.
- Postpositivists 'start with a theory, collect data that either support or refute the theory, and make revisions before additional tests are conducted' (Creswell, 2003: p. 7).
- Knowledge is speculative and established evidence is challengeable. Therefore, hypotheses are not approved but, rather, declared as failed to be rejected.
- Being objective is an essential aspect. Therefore, standard of validity and reliability are important in this type of knowledge claim.

Although Postpositivism is a popular approach to claim knowledge in social science studies, and surely these studies, by definition, are studies of the human behaviour, it arguably

appears that human behaviour complexity, along with the elusive quality of the social phenomena, may limit the application of Postpositivism (Giddens, 1975).

Based on the knowledge claim that underpins this philosophical view, researchers start to adopt strategies of inquiry (Creswell, 2003) or methodologies (Mertens, 1998) that provide specific direction for the applied procedures in a research design (Creswell, 2003). Based on the work of Creswell (2009), in the case of Postpositivism, a quantitative methodology is usually adopted due to the following reasons:

- The quantitative methodology maintains an objective position to the researcher since he or she is an observer.
- The quantitative statistical models provide the means to represent the causal relationship between the component variables of the research model, which supports the deterministic feature of the postpositivism knowledge claim.
- In quantitative methodology, researchers advance the relationships among the variables and pose them in terms of questions or hypotheses.
- The collected data are statistically analysed and, if found reliable, findings can be generalized to the population of the study.
- Quantitative methodology can deal with large data, necessary to prove or discard theories, scientifically.

In a research methodology, methods of data collection are linked to the desired outcomes (Crotty, 1998). Therefore, in a quantitative methodology a large amount of data is required and, hence, surveys and questionnaires are considered the usual methods of inquiry (Creswell, 2003).

According to Creswell (2003), the knowledge claim, the strategy of inquiry and the data collection methods constitute the research approach, and he defines the quantitative approach as being

> ..one in which the investigator primarily uses postpositivist claims for developing knowledge (i.e., cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of the theories), employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data (Creswell, 2003, p. 18).

3.1.2 Social-Constructivism / Interpretivism Knowledge Claim

Social-Constructivism and Interpretivism are naturalistic approaches used to view a social phenomenon. Social-Constructivism, often combined with Interpretivism (Mertens, 1998), is another form of knowledge claim, with a different set of philosophical assumptions. According to (Creswell, 2003), the ideas behind Social-Constructivism are generated from writers such as Mannheim, Berger and Luckmann's '*The Social Construction of Reality'* (1967) and Lincoln and Guba's *'Naturalistic Inquiry'* (1985), and further refined by writers such as Crotty (1998), Lincoln and Guba (2000), Schwandt (2000) and Neuman (2000).

According to Burrell and Morgan's (1979) ontological standpoint, interpretivists view the social reality as a product of individuals' consciousness. People seek to understand the surrounding world they live and work in and they attempt to interpret it, relying on their experiences. However, individuals have unique interpretations that need to be listened to, collected and analysed. Therefore the epistemological approach would demand the researchers be personally involved with the subjects of their studies and develop subjective meanings based on people's responses. The term Social-Constructivism originated because

of the personal involvement and the interactions performed by researchers in gathering data (Creswell, 2003). The research process depends on the participants' views of specific situations being studied, taking into consideration the historical and cultural norms that hold the lives of individuals. However, researchers recognize and acknowledge how their own background, culture, and experience may influence their interpretation of the participants' responses, and how their interpretation flows from their view to the participants' view.

Social-constructivists intend to make sense of meanings and to uncover patterns in participants' interpretations, leading to the development of a theory of understanding, rather than starting with a theory and seeking to approve or refute it, as in Postpositivism.

Researchers often require a qualitative 'strategy of inquiry' (Creswell, 2003) to gather data, and according to Crotty (1998), there are three assumptions that underline the strategy:

- Meanings are generated through social interaction, which forms an inductive process to be conducted by the researchers.
- Meanings are constructed from interpretation generated from individuals engaged with their surrounding environment. Researchers use open-ended questions to allow participants to express their views freely and elaborately.
- Individuals make sense of the world based on their historical and social perspective that is brought to them by the influencing culture they live or work in. Therefore, researchers visit the environment and understand the living or working setting of the participants and collect information, personally.

There are a number of qualitative strategies of inquiry (Creswell, 2003), under Social-Constructivism that are used by researchers, depending on their subject of study. Below, are several examples:

- Ethnographies, in which a group of people is studied for a considerable amount of time, in close cultural settings.
- Grounded theory, 'in which the researcher attempts to derive a general, abstract theory of a process, action, or interaction grounded in the views of participants in a study' (Creswell, 2003: p. 14), over multiple stages like before an event and after.
- Case studies, in which an intensive process of studying is conducted on an issue, involving one or more persons, over a specific time and activity. The researcher uses a number of data collection procedures over an extended period.
- Phenomenological research aims to uncover participants' experiences concerning a phenomenon. The research process involves an extended study in which a pattern and relationship of meanings are developed (Moustakas, 1994).
- Narrative research is about studying individuals and producing a narrative chronology about their lives. The research product is more like a life story of the participants that is combined with the researcher's narrative remarks.

In a qualitative strategy of inquiry, researchers tend to use narrative methods of data collection, such as interviews and focus group discussions. This process involves the collection of participants' responses to pre-determined open-ended questions or emerging questions that encourage an elaborated expression of opinions.

Creswell (2003) ultimately defines the qualitative approach as

> one in which the inquirer often makes knowledge claims based primarily on constructivist perspectives (i.e., the multiple meanings of individual experiences, meanings socially and historically constructed with an intent of developing a theory or pattern).

Adding that,

> It also uses strategies of inquiry such as narratives, phenomenologies, ethnographies, grounded theory studies, or case studies. The researcher collects open-ended emerging data with the primary intent of developing themes from the data (Creswell, 2003, p. 18).

3.1.3 Pragmatism/ Mixed Method Knowledge Claim

Pragmatism is an American contribution to philosophy, based on the work of William James and Charles Sanders Peirce in the 19th century, along with other more recent writers such as Rorty (1990), Murphy (1990), Patton (1990), Cherryholmes (1992) and Creswell (2003). According to Maheshwari (2011), Pragmatism is a philosophical approach that values ideas, based on consequences produced when they are translated into actions and on the situations that are created, rather than on the antecedent conditions, as in Postpositivism (Creswell, 2003). From an ontological prospective, Maheshwari (2011) argues that pragmatists view reality as an experimental world. He suggests that they see experience as being of critical importance, indicating that there are two characteristics of 'experience' that matter, one is the acting part, while the second is the process of drawing meanings from the act and the result produced. While from the epistemological prospective, he argues that Pragmatism determines 'truth' through its practical consequences and knowledge is claimed from the intelligent interaction between one's mind and the environment. Pragmatists continue to find ways to incorporate new ideas to achieve desired results (Maheshwari, 2011), and they are concerned with the application of 'what works' and finding a solution to problems (Patton, 1990). Instead of the method being important, the problem is more important and the researcher, subsequently, uses all approaches to understand the problem (Creswell, 2003). This approach to research is argued as a philosophical stance by Patton (1990) and Tashakkori and Teddlie (1998), to underpin studies that mix different methods and, in

pluralistic approaches, to understand social research problems and to derive knowledge from them. Creswell (2003) highlights some features of Pragmatism that are outlined here because of their contribution to this study:

1- There is a margin of freedom for the researchers to choose from different methods and procedures that best suit their needs and purpose.
2- Pragmatism is applicable to mixed methods research, in which both quantitative and qualitative assumptions constitute the basis of inquiry, instead of a single approach.
3- In mixed methods research, investigators use both quantitative and qualitative data in pursuing the research problem, or "for the broad purposes of breadth and depth of understanding and corroboration" (Johnson, et al., 2007, p. 123).

Creswell (2003) argues that mixed methods, as a strategy of inquiry started in 1959, when Campbell and Fiske used multiple methods to study validity of psychological traits, and ever since researchers were encouraged to use the same strategy to underpin investigation in social science. He also argues that biases in one method could be neutralized or cancelled by the biases of the other methods, and accordingly, a triangulation of data sources was born (Jick, 1979). In this study, the mixed method strategy is used and will be explained in other sections of this chapter. However, it is worth mentioning, and for consistency with other research approaches, Creswell's definition of a mixed method research approach is

> one in which the researcher tends to base knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centred, and pluralistic). It employs strategies of inquiry that involve collecting data, either simultaneously or sequentially, to best understand research problems. The data collection also involves gathering both numeric information (e.g., on instruments) as well as text information (e.g., on interviews) so that the final database represents both quantitative and qualitative information (Creswell, 2003, p. 18).

3.2 Research Objective and Supporting Research Design

It is important at this stage to clarify the origin of the researcher's view and how that view expanded further into the methodology of this study. The aim of the study is to investigate KU instructors' perspectives toward the use of e-learning in the educational process, a collective behaviour on the part of instructors within the boundary of the university. It is argued that a culture exists within KU that influences the instructors to behave in a certain way. For the purpose of clarity, if a KU instructor is asked, "how do you feel about e-learning?", a typical answer might be "e-learning is a new technological development in an educational process that is being effectively used in many modern universities. Although it is available at KU, I do not use it, however". It is argued that such an attitude may create a problem for the KU administration in meeting its strategic objectives, and hence this attitude is worthy of investigation. In order to support this argument, the researcher's view of the study approach is further explained below.

The theoretical framework of this study is built on a social psychological based model. It is argued that instructors' attitudes toward e-learning is influenced by two beliefs: PU of e-learning and PEOU of e-learning; based on the theoretical model of TAM (Davis, 1989). Furthermore, the two beliefs are argued to be affected by external factors that exist within the research environment and these are identified as instructors' personal factors, technology related factors, and organizational related factors. The study intends to measure the influence of those factors on such beliefs and to understand what has founded the social phenomena to exist within KU. It is claimed that such a phenomena is collectively formed by the instructors' pre-determined beliefs regarding technology at the university. Therefore, this study will use a pragmatic approach of mixed methods as a means to investigate the social phenomena of the instructors at KU.

The rationales behind the selection of the pragmatic approach are presented below:

a- The objective of the study is fragmented into small components, consisting of variables, research hypotheses, and research questions, in line with the Postpositivist view underpinning a quantitative approach. These variables are drawn from the surrounding environment, representing KU's work place.

b- An initial theoretical model, based on TAM, is selected to predict the causal relationships between variables and the use of quantitative statistic models to validate them, aiming to generalize findings to the population of instructors at KU.

c- To better understand the research problem of instructors' perspectives on e-learning at KU, a pragmatic approach of mixing quantitative and qualitative strategies and data collection methods are used.

d- In line with the Social-Constructivist view, knowledge is gathered using qualitative tools, using open-ended questions in interviews and focus group discussions to construct meanings based on instructors' opinions as much as possible, to support the quantitative findings, as part of the pragmatic research approach.

e- The study is a means by which other ideas can be used to support the decision-making administrators at KU to improve the implementation of the e-learning system. Meanwhile, the study would contribute to research in social science, in general, and in the educational domain, specifically, by uncovering factors that influence the strategies of Higher Educational Institutes toward e-learning.

In Figure 3.1, an illustration of the overall mixed methods research design is provided. This indicates how quantitative and qualitative data collection strategies, measuring the instructor's perspective towards using e-learning in all colleges, at KU, were applied.

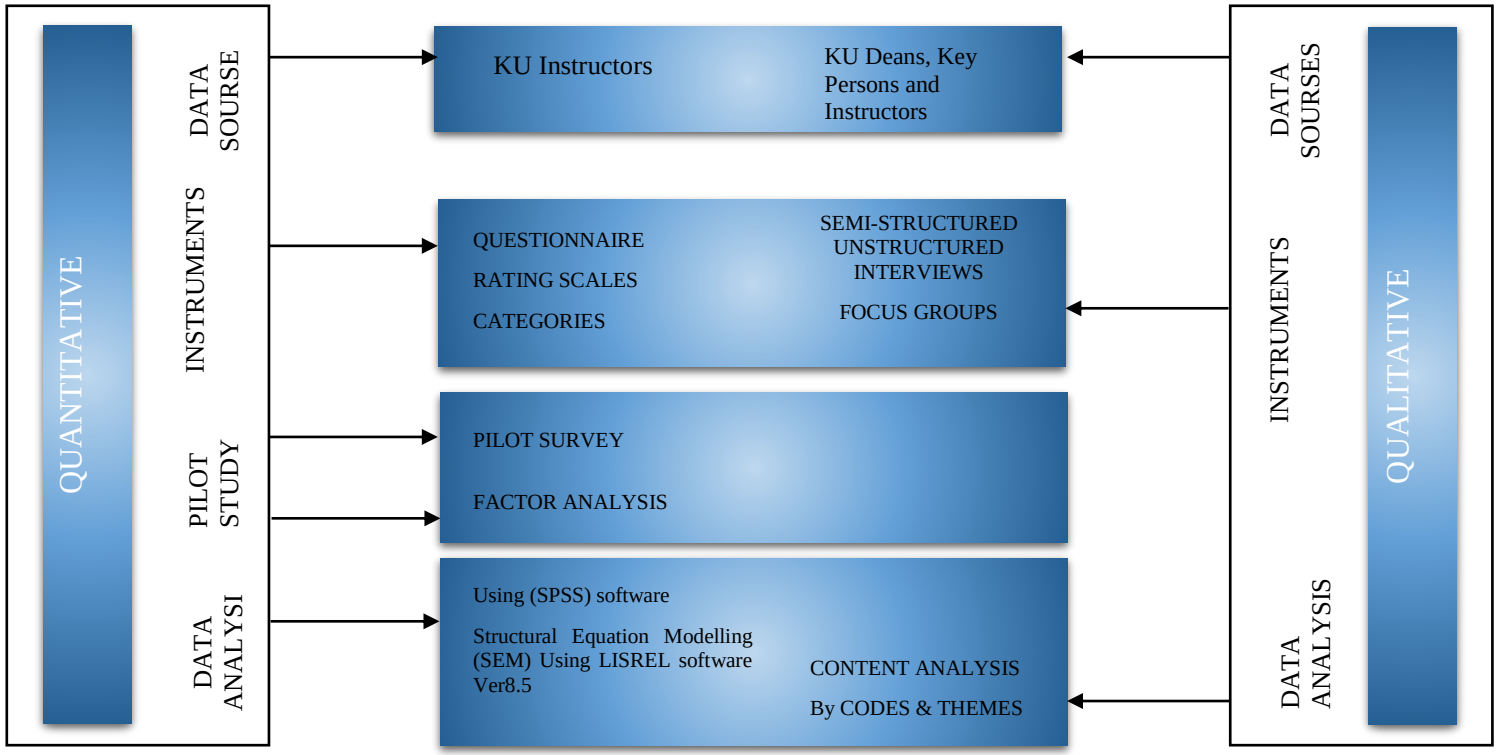

Figure 3.1 – Research Design adopted in the study

To add greater clarity to this structure, two subsequent outlines of the different approaches to data collection are provided. In Figure 3.2, the road map for the research's quantitative approach is presented, which reflects the steps taken from the development of the quantitative instrument to the stage of research hypothesis validation, including various statistical testing to ensure consistent, valid, and reliable measurements.

Similarly, in Figure 3.3, the road map for the research's qualitative approach is presented, which reflects the steps taken to create an interpretation of the interview data, and use the outcomes to support the study results.

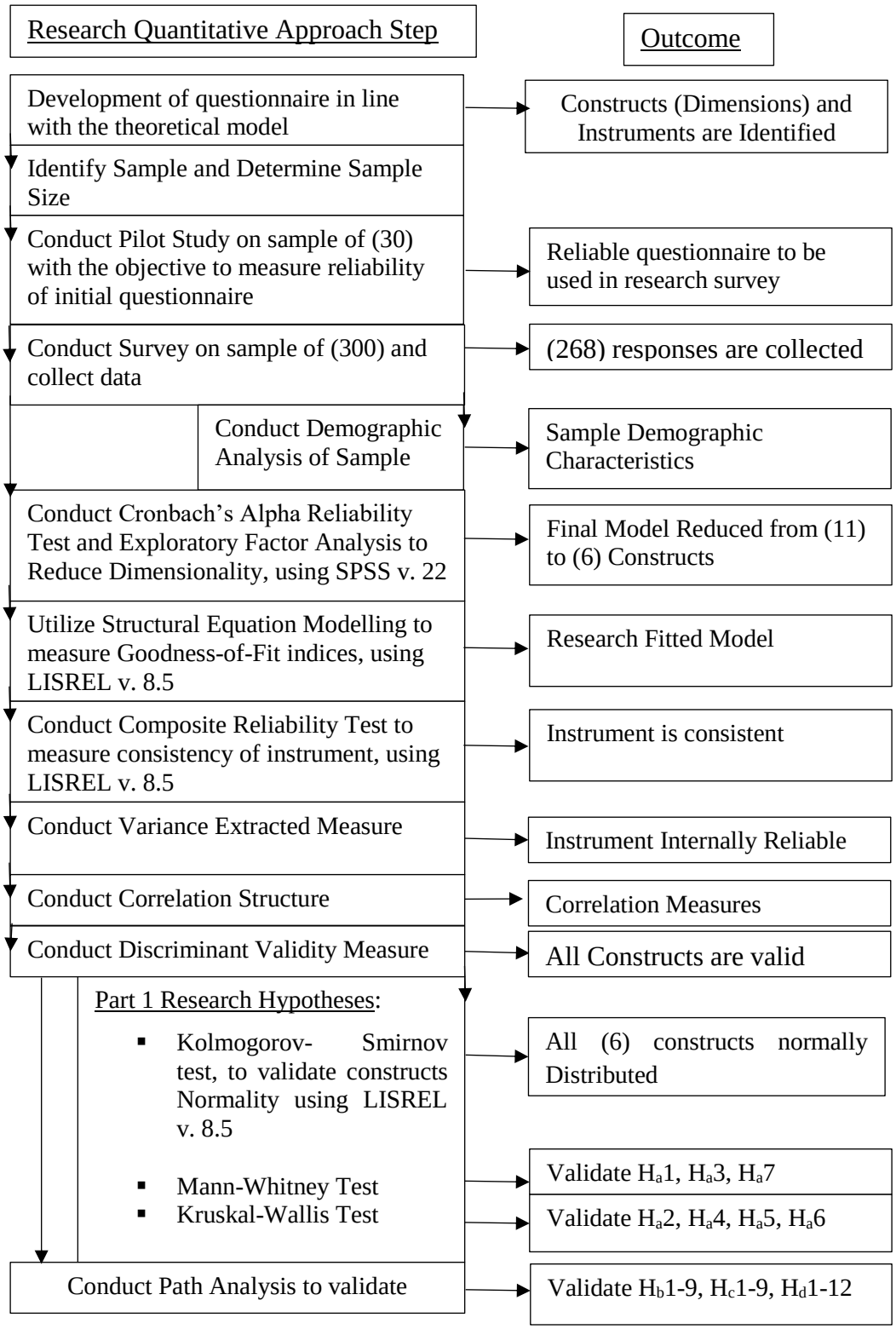

Figure 3.2 – Research Quantitative Approach Road Map

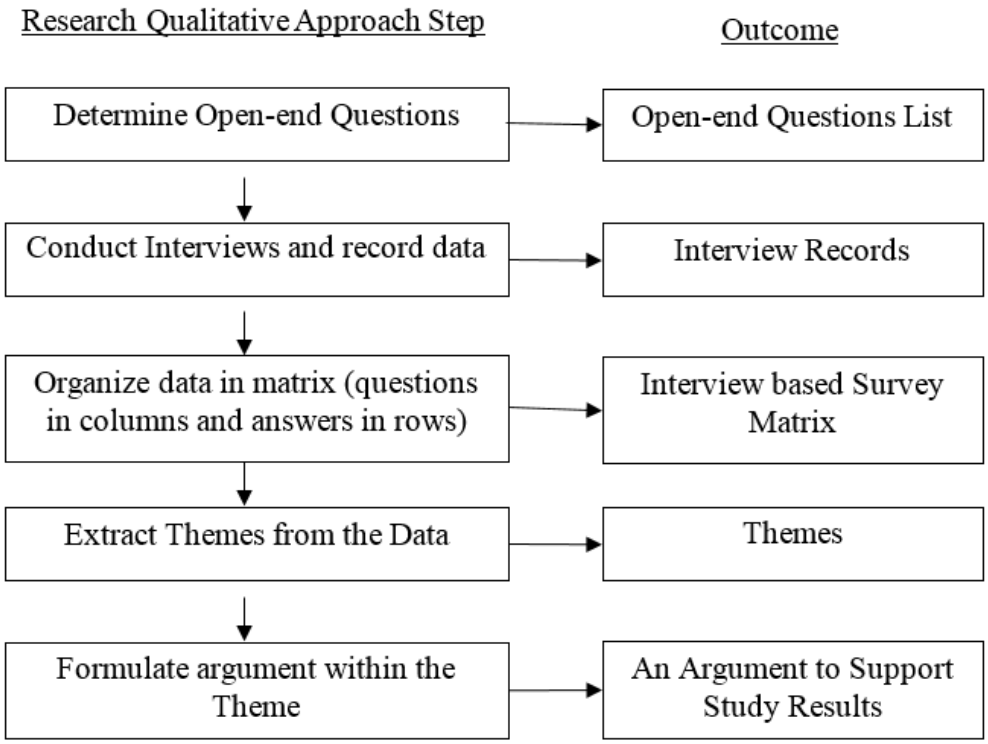

Figure 3.3 – Research Qualitative Approach Road Map

3.3 Instruments Design

Questionnaires and interviews are considered appropriate instruments that allow researchers, in social sciences, to use representative samples to learn more about people's experiences and ideologies (Abbott & McKinney, 2013).

The instruments in this study were designed to elicit both quantitative and qualitative data in order to collect as much data and information as possible from the participants, to support the study. The questionnaire, interviews and focus group questions employed in the study were designed after reviewing several previous studies, relevant to this investigation.

3.3.1 The Questionnaire Design

According to Key (1997), a questionnaire is a means of gathering the feelings, beliefs, experiences, perceptions, or attitudes of a sample of individuals. It is a concise set of questions, designed to yield specific information that meets a particular need in research. A good questionnaire needs to have certain characteristic features (Hunt, 2001). First, the questions must be simple, objective, clear, and attractive. Second, the questionnaire must be organised and easy to complete. Third, it must be designed for both easy tabulation and the achievement of the objectives (Hunt, 2001), and to obtain a reliable response from the participating sample (Hussey & Hussey 1997).

A theoretical framework has guided the questionnaire design process, which has taken time to develop in order to maintain consistency with the research objectives (Ticehurst & Veal, 2000). The measurement items were sourced from scholars such as Davis, (1989), Venkatesh and Davis, (2000), Ngai et al., (2007), Compeau & Higgins (1995), Paul et al., (2003), Compeau, el al., (1999), Kopcha, (2012), and Pituch and Lee, (2006).

The following steps have been considered to ensure a proper questionnaire is formulated:

1. Relevant literature was reviewed to collect applicable questionnaire items that contribute to meeting the objective behind the survey, and adequately measure participants' responses, based on previous studies.
2. The questionnaire items were restructured and modified after obtaining supervisors' feedbacks, comments, and suggestions, to ensure content validity to research requirements.
3. The questionnaire was presented to experts at KU, who evaluated the instrument from both a structural and content prospective, in addition to its

translation from English to Arabic. Based on the feedback, a suitable language structure was provided and the removal of any type of ambiguity was sought.

4. Finally, a pilot-test was conducted to assess the suitability of the questionnaire, and to ensure measurement reliability of all items.

A copy of the questionnaire is enclosed in Appendix A1**,** in English, and in Appendix A2**,** in Arabic.

The research questionnaire specifies sixty-four measuring items that aim to measure the unobserved latent variables of the study theoretical model. The questionnaire items have been adopted from other previous studies that proved them valid; however, the items were adjusted to address the research system under focus, namely the e-learning system at KU. The questionnaire is divided into two parts. The first part covers the general demographic information about the participants, which aims to create a general profile of the sample population, in addition to bringing out the data necessary to validate related research hypothesis (see chapter 4). The second part of the questionnaire covers the measuring items for the individual constructs relating to the theoretical model, which, in turn, brings out the data necessary to examine the other research hypothesis (see chapter 4). In the subsections to come, the questionnaire parts are explained further.

3.3.1.1 General Demographic Information

This part of the questionnaire investigates the participants' background from the following prospective:

a) General Information: Gender (Male and Female), age group (35 & less, 36 to 45, 46 to 55, and 56 & above), college type (Science major, Art major), academic position

(Assistant, Associate, or Full Professor), and teaching experience (1 to 5, 6 to 10, 11 to 15, and 16 & above).

b) Seeks to determine respondent's experience with the use of e-learning at KU, by selecting one of three options (All of my courses, some of my courses, and none of my courses). The second question asks them if they have attended any professional development sessions on the e-learning system at KU (Yes or No). The last one asks them about the types of e-learning systems they use at KU (Blackboard or Other System/Technology).

3.3.1.2 The Study Theoretical Model Constructs-Related Items

The questionnaire includes 11 factors that explore the instructor's perspectives relating to e-learning systems. Four of them are defined as endogenous factors (dependent variables) from inside the based TAM model (Perceived Usefulness, Perceived Ease of Use, Attitude, Intention to Use), and seven factors are identified as exogenous factors (independent variables) and are considered to be outside of the based TAM model (Computer Self-Efficacy, Prior Experience, Job Relevance, Professional Development, University Strategic Focus, System Quality, and Technical Support). In the following section, each individual factor in the instrument is explained.

a) Perceived Usefulness (PU) items

The PU items measure the instructor's perspectives on whether or not using an e-learning system would enhance their job performance. Davis (1989) postulates that PU plays an important role in relation to attitudes surrounding the use of a new technology. In the research instrument, PU is measured using four items developed by scholars such as Davis (1989)

(see Table 3.1), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.1 – Questionnaire Perceived Usefulness (PU) items

Q No.	Question	From
4	Using the e-learning system in teaching improves my job performance	Davis (1989)
5	Using the e-learning system in teaching enhances my job effectiveness	
6	Using the e-learning system in teaching increases my productivity	
7	Using the e-learning system in teaching makes it easier to do my job	

b) Perceived Ease of Use (PEOU) items

The PEOU items measure the instructors' views on whether or not an e-learning system would be free of effort when used. Davis (1989) postulates that PEOU plays an important role in determining attitudes toward using a new technology. In the research instrument, PEOU is measured using five items developed by scholars such as Davis (1989) (see Table 3.2), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.2 – Questionnaire Perceived Ease of Use (PEOU) items

Q No.	Question	From
8	I find it easy to get the e-learning system to do what I want it to do.	Davis (1989)
9	Interacting with the e-learning system is clear and understandable.	
10	Interacting with the e-learning system is not complicated.	
11	The e-learning system is flexible to interact with.	
12	I find the e-learning system easy to use.	

c) Attitude toward use (ATT) items

The ATT items are designed to measure the instructor's levels of positivity toward the e-learning system. It is measured using five items developed by scholars such as Compeau & Higgins (1995) and Ngai, et al., (2007), (see Table 3.3), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.3 – Questionnaire Attitude toward use (ATT) items

Q No.	Question	From
13	Using the e-learning system makes my work more enjoyable.	Compeau & Higgins, (1995); Ngai, et al., (2007)
14	I like using the e-learning system.	
15	The e-learning system is beneficial.	
16	The e-learning system makes my work more interesting.	
17	I look forward to those aspects of my job that require me to use the e-learning system.	

d) Intention To Use (ITU) items

The ITU items are designed to measure the strength of the instructor's intention to use e-learning. The intention to use is measured using seven items developed by scholars such as Paul et al. (2003) and Coskuncay & Özkan (2013) (see Table 3.4), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.4 – Questionnaire Intention To Use (ITU) items

Q No.	Question	From
18	I intend to use the e-learning system in my teaching	Paul et al. (2003); Coskuncay & Özkan (2013)
19	It is worth using the e-learning system.	
20	I plan not to use the e-learning system in any of my courses	
21	I plan to use the e-learning system in some of my courses.	
22	I plan to use e-learning system in all of my courses	
23	I intend to use e-learning system to improve my teaching.	
24	In the future, I intend to increase the use of the e-learning system in my teaching.	

e) Computer Self-Efficacy (CSE) items

The CSE items are designed to measure the ability of the instructors to apply computer skills to achieve their tasks (Compeau, et al., 1999). Several empirical studies found significant effects of computer self-efficacy on the perceived usefulness and perceived ease of use on an e-learning system (Gong, el al., 2004; Ferdousi, 2009; Waheed & Farooq Hussain, 2010). CSE is an important construct that affects instructors' attitudes and their intention to use e-learning systems.

In this study, CSE is measured using five items developed by scholars such as Compeau, el al. (1999) (see Table 3.5), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.5 – Questionnaire Computer Self-Efficacy (CSE) items

Q No.	Question	From
25	I feel comfortable using computers to do my e-learning tasks.	Compeau, el al., (1999)
26	I could complete e-learning tasks using computers if I were to see someone else doing it effectively.	
27	I could complete e-learning tasks using computers if I had used a similar package before to do the same tasks.	
28	I can complete e-learning tasks using computers if I have the system manual/ guidelines for reference.	
29	I can complete e-learning tasks using computers even if I have not used a system like it before.	

f) Prior Experience (PE) items

The PE items are designed to measure how instructors' prior experience in using e-learning systems will affect their perspectives toward e-learning. Therefore, PE has complex relationships with other variables and shows both direct and indirect effects on the user's acceptance of e-learning systems (Ittersum, et al., 2006).

In this study, PE is measured using six items developed by scholars such as Liu a, et.al (2010) and De Vita, et al. (2012), (see Table 3.6), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.6 – Questionnaire Prior Experience (PE) items

Q No.	Question	From
30	I have had good experiences in using the e-learning system for teaching purposes.	De Vita, et al. (2012); Liu et. al, (2010)
31	I have good experience in using general application software (e.g. Word processors, spreadsheets, presentation) that make the e-learning system easy to use	
32	I have had good experiences that made the e-learning system easy to use.	
33	I have had good experiences using the e-learning system that improved my work quality.	
34	I have had good experiences using the e-learning system that have increased my productivity	
35	I have had good experiences using the e-learning system that has improved my career status.	

g) Job Relevance (JR) items

The JR items are designed to measure how the e-learning system will be relevant to an instructor's job. JR was measured using six items developed by scholar such as Venkatesh and Davis (2000) and Paul, et al. (2003), see table 3.7, and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.7 – Questionnaire Job Relevance (JR) items

Q No.	Question	From
36	I consider the e-learning system to be important to my job.	Venkatesh and Davis, (2000); Paul, et al. (2003)
37	I consider the e-learning system to be needed for my job.	
38	I consider the e-learning system to be fundamental to my job.	
39	I consider the e-learning system matters to my job,	
40	The use of the e-learning system increases the level of challenge in my job.	
41	The usage of the e-learning system makes my job easy.	

h) Professional Development (PD) items

The PD items are designed to measure how the training and the upgrading of instructors' technological knowledge and skills affect their perspectives on the e-learning system. PD is a factor that influences the instructors' attitudes toward using e-learning system. PD is measured using six items developed by scholars such as Kopcha (2012) (see Table 3.8), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.8 – Questionnaire Professional Development (PD) items

Q No.	Question	From
42	The training I received could be easily applied in my classes.	Kopcha, (2012)
43	I feel adequately trained in the skills needed to use the e-learning system.	
44	I had enough opportunity to share technology lessons with other instructors	
45	The training I received on the e-learning system enhances my professional capacity to complete relevant instructional tasks	
46	The training I received on the e-learning system increases the variety in my job.	
47	The training I received on the e-learning system increases my job security	

i) University Strategic Focus (USF) items

USF items are designed to measure how the planning and setting of policies of the organization affect instructors' beliefs relating to e-learning systems and their perspectives, with respect to the use of it. USF is measured using four items developed by the researcher, (see Table 3.9), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.9 – Questionnaire University Strategic Focus (USF) items

Q No.	Question	From
48	The university may require that all instructors should use e-learning in the future.	
49	I think a university policy exists to encourage the use of e-learning system.	
50	Using e-learning system in my teaching complies with university policy.	
51	Using e-learning system in my teaching justifies the funds spent by the university on the system.	

j) System Quality (SQ) items

The SQ items are designed to measure how the system's characteristics, such as usability, availability, reliability, and adaptability, affect an instructor's perspective toward using the e-learning system. It is measured using seven items developed by Pituch and Lee (2006) (see Table 3.10), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.10 – Questionnaire System Quality (SQ) items

Q No.	Question	From
52	The e-learning system allows me the control over my teaching activities	Pituch and Lee (2006)
53	The e-learning system offers flexibility as to time and place of use	
54	The e-learning system provides the functions I need to conduct my teaching activities successfully	
55	I have appropriate and sufficient software and hardware on my personal computer to use e-learning system.	
56	I can easily access the e-learning system anytime I need to use it.	
57	The e-learning system has well-designed user interfaces.	
58	The e-learning system is reliable	

k) Technical Support (TS) items

The TS items are designed to measure how the help desks and hotline services will affect an instructor's perspective toward using the e-learning system. TS is measured using six items developed by (Ngai et al., 2007) (see Table 3.11), and using a five point Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree.

Table 3.11 – Questionnaire Technical Support (TS) items

Q No.	Question	From
59	A help desk is available to me when I face a technical problem.	Ngai et al. (2007)
60	I have access to e-learning system technical support when I need it.	
61	I believe e-learning system support staff are highly qualified to solve technical problems.	
62	E-learning system technical support offered by the university improves my teaching	
63	E-learning system technical support offered by the university increases my productivity.	
64	E-learning system technical support offered by the university makes e-learning system more effective.	

3.3.2 The Interviews Design

According to Seidman's (1998) explanation, it is possible to collect qualitative data by understanding the experiences of individuals through the interview technique. An interview is defined as a one-to-one conversation, initiated by the interviewer for the specific purpose of obtaining research-relevant information and focusing on the content specified by the research objectives (Lindzey and Aronson, 1968). Accordingly, an interview is a process of collecting data that can offer a meaningful understanding of individuals' perspectives on any topic of reference. The main purpose of conducting interviews is to get a deeper understanding of the interviewees' perception.

Oates (2006) argues that interviews should be categorized into three types: structured, semi-structured, and unstructured interviews:

- In structured interviews, the questioning is standardized and answers are selected from pre-determined ones. In this case, the context of interviewees' answers follows a pre-set closed ended answers.
- In semi-structured interviews, although there are a pre-determined list of questions to be answered, there is more flexibility. The researcher can ask further questions or change the order of pre-set ones. In addition, the interviewee can talk in an open way and give more details in answering the questions.
- In unstructured interviews, more freedom is given to the interviewees to answer the questions. It might be a single question prepared by the interviewer however elaborated with additional opinions that can emerge from the interviewee's response.

In this study, two types of interviews have been conducted, as explained further below:

a) Semi-Structured Interview

The semi-structured interviews were conducted after completing the questionnaire. The questions were designed to understand KU's key Administrative persons' opinions on the utilization of e-learning by instructors and KU's role in promoting and encouraging e-learning use in teaching.

The researcher conducted interviews with 12 people, covering college Deans and KU key staff from the Centre for Distance Learning (CDL). It was expected that the interviewees had contributed to e-learning policy development and implementation as part of their job responsibilities, and that, in the course of their work, reflected on the success of e-learning implementation.

Interview questions were designed to explore, in greater depth, the issues that arose from the questionnaire, discussed previously, with an objective to focus on the organizational aspects

surrounding e-learning implementation at KU. The interview questions concentrate on KU administration's effort to roll out a clear policy on e-learning that promotes adequate training, motivation, and encouragement initiatives, such as an award system that ensures instructors' positive participation in e-learning implementation and in continually improving it. The questions were of the open-ended type, which allowed the participants to elaborate on their answers freely (See Table 3.12).

Table 3.12 – Interview Questions

Q No.	Question
1	What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?
2	Do you believe there is pressure to involve instructors in e-learning? Yes () No () If yes, where do you believe this pressure comes from?
3	What is Kuwait University strategic policy on the introduction of e-learning?
4	What Kuwait University can do to encourage more e-learning participation from instructors?
5	Please list any factors that would motivate your instructors to participate in e-learning
6	Please list any factors that you believe would inhibit your instructors from participating in e-learning
7	Is there any plan on instructor's participation in seminars and workshops on e-learning, sponsored by the Kuwait University?
8	Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?
9	Is there anything else you would like to share in the Kuwait University experience of e-learning?

b) Unstructured Interview

Subsequent to the semi-structured interviews with KU key administrative staff, a series of unstructured interviews were conducted with a sample of KU instructors, which sought to obtain their opinion on the e-learning system at KU. Most of the interviewees reacted impulsively once the survey subject was made known to them as 'The e-learning system at Kuwait University' or to an open question 'What do you think about e-learning system at

Kuwait University?' The data generated from such a survey would support the study outcomes resulting from the questionnaire. A total number of 24 responses were collected, along with relative demographic information, such as gender, college, and expected range of teaching experience in years. The collected information is tabulated in Appendix A4.

3.3.3 The Focus Group Design

Focus groups have gained popularity as a research instrument in the social researches, especially in the medical field (Krueger & Casey, 2001). According to Krueger and Casey (2001, p. 5), focus groups are considered to be an appropriate tool to obtain research data in the following contexts:

- Understanding how people see needs and assets in their lives and communities.
- Understanding how people think or feel about an issue, idea, behaviour, product, or service.
- Pilot testing ideas, reforms, or projects. For example, focus groups can be used to get reactions to the plans before large amounts of money are spent on implementation.
- Evaluating how well programmes or projects are working and how they might be improved.
- Developing other research instruments, such as surveys or case studies.

  Focus groups have an advantage over individual one-to-one interviews, in that they provide richer pools of data that can eliminate the possibility of one individual not disclosing enough information. However, focus groups require a high level of planning effort and are considered an expensive process to conduct.

Following the analysis of the questionnaire data the findings were discussed with two groups of KU instructors, a user group of e-learning systems, and a non-user group. This was part of

the triangulation strategy adopted throughout the study. In line with Krueger and Casey's (2001, p. 4) guidelines on the recruitment of experienced participants, an arrangement was made with KU to invite five to eight persons in both groups; consisting of KU instructors who were fully aware of the e-learning systems available to them. The interview questions were carefully formulated in order to guide the session discussions and participation flow. The flow of the questions was planned to move from a general perspective to a more specific topic, in relation to e-learning at KU (see Table 3.13).

Table 3.13 – Focus group questions

Q No.	Question
1	How important e-learning to Kuwait University learning Process?
2	How Kuwait University set policies in general and for e-learning in particular?
3	How do you describe KU strategy for e-learning?
4	Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?
5	In your opinion, why female instructors are more positive in perceiving benefit from their previous computer skills in using e-learning?
6	Why do you think newcomer instructors think more about e-learning usefulness in teaching?
7	In your opinion, why there would be no difference in perception toward the use of e-learning in any of KU colleges, whether art major or science major?
8	In your opinion, why professors and assistant professors would think more about e-learning usefulness than associate professors?
9	Why do you think assistant professors and associate professors are more positive that having prior computer skills would promote the use of e-learning?
10	The study found the more instructors use e-learning, the more they perceive its usefulness and easiness of use and have a better attitude toward it. In your opinion, why?
11	Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?
12	Why do you think instructors using Blackboard perceive e-learning usefulness more than instructors using other systems at KU do?

3.4 Questionnaire Sample Identification and Size

The population of the study is all instructors at KU. The population has various attributes associated with age, gender, experience, academic position, and college; however, the sample was taken on availability and voluntarily basis, without pre-determined quantity limitation based on the attributes.

According to Grinnell (2001), a sample size of 10% of the population is considered adequate. There are 1560 faculty members at KU. Hence, the sample size of 156 faculty members would be acceptable. However, a size of 300 was considered and, accordingly, the questionnaire forms were distributed. A sum of 268 completed forms was received, which brought the participation rate to 89.3%, which falls within the acceptable norms for research of this type.

3.5 Questionnaire Pilot Study

A pilot study was conducted to measure the reliability level of the questionnaire items. To do so, 30 instructors were randomly selected from the target population. The sample size for the pilot study was selected based on 10% of the total sample size of the research survey (300 Instructors), in line with the standard research norms. Cronbach's alpha test, for internal reliability, was carried out using SPSS (version 22) on the pilot study outcomes, which gave acceptable results for the measurement items. A reliability coefficient of 0.70 or higher is considered acceptable in most social science research situations (Nunnally, 1978). The Cronbach alpha for the following 11 measurement scales are presented in Table 3.14.

Table 3.14 – Questionnaire Based Survey Measurement Scale Cronbach's alpha

Construct	Cronbach's alpha
Perceived Usefulness	0.969
Perceived Ease of Use	0.944
Attitude	0.942
Intention to Use	0.784
Prior Experience	0.941
Computer Self-efficacy	0.795
Job relevance	0.954
Professional Development	0.916
University Strategic Focus	0.847
System Quality	0.934
Technical Support	0.935

The table, above, indicates the questionnaire eleven-measurement scales are reliable and, thus, appropriate for use in this study.

3.6 Questionnaire Distribution, Collection and Response Rate

After all considerations were made, the questionnaire was deemed ready for distribution. The study was conducted during summer (May – July 2014). The population of the study included all instructors at KU's colleges and departments. The questionnaires were distributed to instructors and collected either in person or through each department Secretariat office. In addition, the study used a survey website (Qualtrics) to target the instructors, using available and known e-mail addresses. An email was sent to them with the following link

(https://qtrial2014.az1.qualtrics.com/SE/?SID=SV_1HXLLfgO1NsxiW9).

This brought them to the survey website.

In addition, the survey was self-administrated and distributed randomly to instructors from the 15 KU colleges. The questionnaire was distributed proportionally to the number of instructors in each college, however, the instructors' participation was based on availability and voluntarily response from the targeted instructors. The questionnaire took an average of 15 minutes to complete. In order to ensure participant's full awareness and to improve the response rate, the questionnaire included a confidentiality statement that clearly indicated the objective of the study, the researcher's responsibility toward the collected data, and the participant's right to withdraw the submitted data at any time. Both Arabic and English versions of the survey were provided, to ensure the elimination of any language barriers.

The participants were asked to participate and complete the questionnaire based on their perception of the e-learning system, utilized in the KU education process.

To facilitate the researcher's distribution between the colleges, a formal letter was forwarded to the administration of KU to avoid any delay, due to the issue of departments requiring managerial permission for distribution.

Due to KU's limited resources and increased number of students, it was expected that instructors and other staff would be pre-occupied with high workloads that would limit their participation rate in research surveys. According to Mahdizadeh, et al. (2008), lower response rates in previous researches were due to the time needed to fill the questionnaires and because of poor knowledge of the e-learning system.

3.7 Quantitative Data Analysis Tools

In this study, there are two packages that have been mainly used to test the instrument and to analyse the collected data, namely, SPSS (version 22), and LISREL (Version 8.5). In the following subsection, brief descriptions of both software programmes are presented, along with the contribution of each programme to the study.

- SPSS Analysis:

The research questions and hypotheses were examined using the Statistical Package for the Social Science (SPSS) software, version 22 for Windows. Initially, SPSS was used to test the reliability of the questionnaire items, based on the outcome of the pilot study. The data were converted from string data to numerical data from the questionnaire by the researcher and saved in the SPSS database (see Figure 3.4). Statistical analysis was run on the items by the software and computing frequency distributions of responses of the participants were calculated. In addition, SPSS was used to calculate the demographic characteristic distribution of the sample. Subsequently, SPSS was also used to test the hypothesis by using descriptive statistics, such as minimum, maximum, frequency, percent, mean, standard deviation, and T-tests (see Chapter 4).

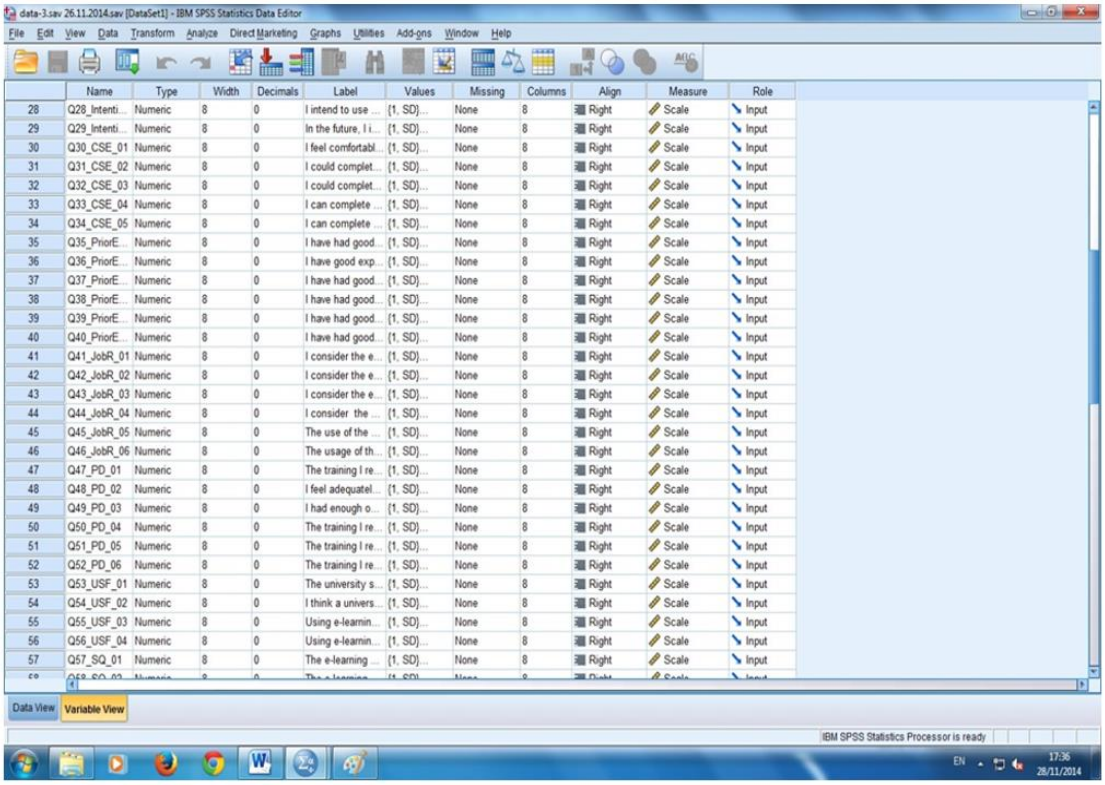

Figure 3.4 – SPSS Software variables form

- LISREL Software

LISREL (version 8.5) software programme was used for Structural Equation Modelling (SEM). SEM analytical techniques such as Confirmatory Factor Analysis, Model Fitting Measurements, reliability tests, and Path Model analysis were conducted through LISREL.

3.8 Demographic Analysis of Sample

A demographic analysis of the sample was conducted in order to create a profile of the collected sample. The outcome of this exercise was a linear distribution of weighted percentage of individual demographic parameters. The software package SPSS (version 8.5) was used in this exercise.

3.9 Quantitative Data Analysis Techniques

One of the most commonly used statistical techniques of behavioural science is the Structural Equation Modelling (SEM). SEM is an approach that has the capability to bring data and theory together (Tabachnick and Fidell, 2001). According to Hox and Bechger (1998, p. 1), SEM "can include variables that are not measured directly, but rather indirectly through their effects".

This study utilized Structural Equation Modelling (SEM) to analyse the collected data from the questionnaire-based survey. This technique utilizes several models to describe relationships between observed variables, to understand how a group of variables can define constructs and how these constructs are related to each other (Schumacker and Lomax, 2004). Furthermore, SEM was adopted for several reasons; first, it enables researchers to test and estimate the relationships between the constructs. Second, its ability to assess and to correct for measurement error, which by ignoring this step, a bias, in estimating parameters, may be introduced (Stage, 1988). Third, it allows for the representation of constructs by utilizing several measurements. SEM Analysis is run using the Linear Structural Relations (LISREL) software (Ver. 8.5).

In SEM, the variables are divided into two types; latent variables and observed variables. The latent variables are also known as factors, constructs, or unobserved variables. They cannot be measured directly, but are deduced from measured variables.

The latent variables in this study included 11 factors: PU, PEOU, ATT, ITU, CSE, PE, JR, PD, USF, SQ, and TS (see Figure 3.5).

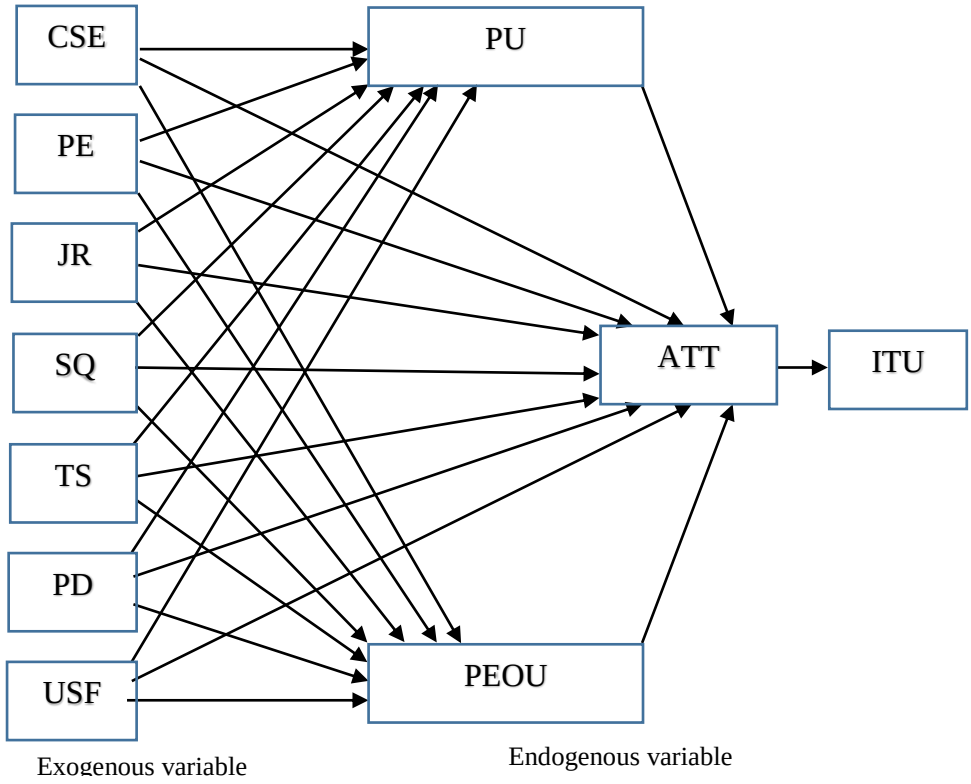

Figure 3.5 – Study Theoretical Model- Latent Variables

On the other hand, the observed variables are a set of variables, known as measured variables, and are used to deduce or to infer the latent variables. The observed variables in this study were the questionnaire items, measuring the 11 latent variables.

Furthermore, latent variables can be classified as either endogenous variables or exogenous variables. The endogenous variables are the dependent latent variables (i.e. Perceived usefulness, perceived ease of use, attitude, and intention to use), which are contained in the model, but which are influenced by other variables. The exogenous variables are the independent latent variables (i.e. Computer self-efficacy, prior experience, job relevance, professional development, university strategic focus, systems quality, and technical support), which are considered outside of the theoretical based model and which are not influenced by any other variable in the model.

According to Anderson and Gerbing (1988), Jöreskog & Sörbom, (1993), and Castaneda (1993), they recommend that there are two phases for applying the structural equation modelling procedure. First, a measurement model is represented by a factor analysis, which measures the relationships between observed variables and latent variables. In addition, it provides an assessment of reliability and validity of observed variables for each latent variable. Second, the structural model specified the relationships between latent variables (Schumacker and Lomax, 2004), with most fitting the sampled data.

There are three types of effects hypothesized between latent variables: First, the direct effect, which is a direct effect relationship that represents the hypothesized linear directional influences of one variable on another. Second, the indirect effects are the indirect effect relationships that represent hypothesized correlational associations among variables (MacCallum, 1995). Third, the total effect is direct effect, plus indirect effect(s). According to Asher (1983, p. 36), the total effect of one variable on another variable is the sum of the direct effect and the indirect effect. It is possible that the direct and the indirect effects can be positive or negative quantity. In addition, it is possible that the indirect effect exceeds the direct effect in magnitude.

3.9.1 Factor Analysis

Factor analysis, which was performed in this study, is a multivariate statistical technique that leads to the reduction of a large number of correlated variables to a lesser number of latent dimensions. The aim of factor analysis is to reach parsimony, by utilizing the minimum number of explanatory concepts (variables) to clarify the maximum sum of common variance, in a correlation matrix. In addition, factor analysis can be utilized to assess the reliability and validity of measurement scales (Carmines & Zeller, 1979). In brief, factor analysis was used in this study to meet the following objectives:

- To reduce dimensionality to a manageable set within the sampled data.
- To remove redundancy or duplication from a set of correlated variables.
- To reveal patterns within the data.

Exploratory and confirmatory analysis are the two major forms of factor analysis.

- **Exploratory factor analysis:** is usually implemented in the initial phases of the research analysis. The objective of it is to describe the relationships between variables without determining the extent to which the outcomes are fitting a specific model (Bryman & Cramer, 2001). This technique allows for the assessment of the validity of the items on the questionnaire, by demonstrating the extent to which they seem to be measuring the same concepts or variables. According to Field (2009), this analysis helps the research in three ways. Firstly, to recognize the structure of a group of variables. Secondly, to help in the construction of a questionnaire. Thirdly, to minimize a dataset to a more manageable size and retain the original information as much as possible.
- **Confirmatory factor analysis**: is generally implemented in the advanced phases of the research analysis to test latent variables, as part of the hypothesis (Tabachnick & Fidell, 2001; Kinnear & Gray, 2009). In confirmatory factor analysis, the items must be loaded exclusively on a particular factor to confirm a hypothesized factor structure in the data (Stevens, 2002), to see whether the data are consistent with the study hypotheses.

The outcome of the confirmatory factor analysis would be a final study model that was reduced from the earlier theoretical model, which was used to design the questionnaire. The final model presents the most reliable observed variables that contribute most in the strong

relationship between the latent variables. It is highly important in any study to maintain a high degree of reliability and validity in the analysis outcomes.

3.9.2 Study Fitted Model

To test the final model's fitness to the sampled data, two steps were performed. The first step was to estimate the values by determining their feasibility, which focused on whether the estimated values were in the admissible range or not (Byrne, 2001). The second step was the evaluation of the model, to assess its fitness. The LISREL programme usually provides a number of the Goodness-of-fit Indices; see Table 3.15 for criteria of accepted values.

Table 3.15 – Goodness-of-fit Indices of Structural Model

Fit Indices	Accepted Value
Absolute Fit Measures	
*Chi-square/df (X^2/df)	< 3
GFI (Goodness of Fit Index)	> 0.9
RMSEA (Root Mean Square Error of Approximation)	< 0.10
SRMR (Standardized RMR)	< 0.08
Incremental Fit Measures	
AGFI (Adjusted Goodness of Fit Index)	> 0.80
NFI (Normal Fit Index)	> 0.90
NNFI (Non-Normed Fit Index)	> 0.90
CFI (Comparative Fit Index)	> 0.90
IFI (Incremental Fit Index)	> 0.90
RFI (Relative Fit Index)	> 0.90
Parsimony Fit Measures	
PCFI (Parsimony Comparative of Fit Index)	> 0.50
PNFI (Parsimony Normal Fit Index)	> 0.50

*X^2 = (Chi-square), df = (Degrees of Freedom)

The definitions of these terms are presented below for reference:

- **Chi-square**: "the means of responses in independent groups of multiple variables. Chi-square test is sensitive to sample size, and if not large enough, other fit statistics are to be taken into account" (Kelloway, 1998, p. 26).
- **Goodness of Fit Index (GFI)**: is based "on a ratio of the sum of the squared discrepancies to the observed variances. GFI ranges from 0 to 1, with values exceeding .90 indicating a good fit to the data" (Kelloway, 1998, p. 27).
- **Root Mean Square Residual (RMSR)**: is the square root of the mean of the squared discrepancies between the implied and observed covariance matrices. Generally for this index, values less than .05 are interpreted as "indicating a good fit to the data" (Kelloway, 1998, p. 27).
- **Standardized RMR**: Standardized Root Mean Square Residual (SRMR) is the square root of the discrepancy between the sample covariance matrix and the model covariance matrix (Hooper, et al., 2008). SRMR ranges from 0 to 1, with a value of .08 or less being indicative of an acceptable model
- **Adjusted Goodness of Fit Index (AGFI)**: is a correction of GFI, which is affected by the number of indicators of each latent variable. A value of 0.90 is an indication of a good model fit.
- **Normed Fit Index (NFI)**: indicates the percentage improvement in fit over the baseline independence model. NFI ranges from 0 to 1, with values exceeding .90 indicating a good fit to the data (Kelloway, 1998, p. 30).
- **Non-Normed Fit Index (NNFI)**: numbers with a lower bound of 0 but an upper bound greater than 1; higher values of NNFI indicate a better fitting model, and "it is

common to apply the .90 rule as an indicator of a good fit to the data": (Kelloway, 1998, p. 31).

- **Comparative Fit Index (CFI)**: the comparative fit index is based on "the non-central chi-square distribution the CFI also ranges between 0 to 1 with values exceeding 0.90 indicating a good fit to the data" (Kelloway, 1998, p. 31).
- **Incremental Fit Index (IFI)**: the ratio of the difference values between the chi square of the independence model and the chi-square of the target model that is calculated (Bollen, 1990, pp. 256-259). Values that exceed 0.90 are considered a good fit to the data.
- **Relative Fit Index (RFI**): compare the chi-square for the hypothesized model to one from a "null", or "baseline" model (McDonald & Ho, 2002). Values that exceed 0.90 are considered a good fit.
- **Parsimony Normed Fit Index (PNFI)**: the PNFI adjusts for degrees of freedom based on the NFI (Mulaik, et al., 1989).

3.9.3 Correlation Structure between Different Constructs

Correlation measures the direction and the strength of the linear relationship between two variables, in other words, the extend of an association or dependence exist between two variables. The value of a correlation coefficient (r) can range from minus one to plus one, however, a value of zero means no relationship exists between the two variables. A negative value means an opposite relationship, if one variable goes up the other variable goes down. A positive correlation value means the variables move in the same direction, if one variable goes up the other variable goes up as well. A higher value of correlation coefficient verses a lower value means the association or the dependence relationship between the two variables

is more in the higher (r) value than the lower one. A value closer to zero means a weaker association between the two variables and they act more independent from each other.

3.9.4 Discriminant Validity

In this study, the degree to which any two sets of measurements in this study are able to discriminate between two different measures was examined. Discriminant Validity refers to "the extent to which the measure is indeed novel and not simply a reflection of some other variable" (Churchill, 1979, p. 70).

3.9.5 Composite Reliability and the Extracted Variance

The composite reliability is a measure of the consistency of the instrument in measuring the construct (see the formula below for reference). It is common practice for a composite reliability of 70% or more to be acceptable (Hair et al. (2010).

$$\text{Composite Reliability} = \frac{(\sum \text{Standardized loading})^2}{(\sum \text{Standardized loading})^2 + \sum |\text{error}|}$$

Another measure of internal reliability is the variance extracted; this measure evaluates the overall amount of explaining variations accounted for by the instruments. Variance extracted of 50% or more is considered adequate (Sharma, 1996; Hair, et al., 2010). The variance extracted is computed by the following formula:

$$\text{Variance Extracted} = \frac{(\sum \text{Standardized loading})^2}{\text{Number of loadings (n)}}$$

Coefficient of determination and denoted as R-square or (R^2), is another measure which indicates the extend of variation in the independent variables that are explained by the dependent variable. R^2 value is from 0 to 1 or in percentage. The higher value of R^2, the better is the dependent variable as a predictor of the variation in the independent variables.

3.9.6 Validation of Research Part 1 Hypotheses and Related Tests

In this section, several statistical testing procedures were conducted to assess whether different demographic groups have different attitudes toward the research dimensions. First, a Kolmogorov-Smirnov test was performed to validate the normality assumptions, which were required to apply the parametric tests. In case research constructs (dimensions) are not normally distributed, it is necessary to resort to the non-parametric statistical technique to verify whether significant differences exist between different demographic levels. In case of two independent groups, such as gender, the non-parametric Mann-Whitney test was applied, whereas for more than two groups, such as amount of experience, the Kruskal–Wallis test was implemented; the purpose of which was to compare the distributions of scores on a quantitative variable, obtained from two or more groups.

3.9.7 Validation of Research Part 2 Hypotheses by Path Analysis

Structural Equation Modelling (SEM) Path Analysis was considered in order to evaluate and validate the research hypotheses.

Path analysis is a statistical technique used to evaluate a set of simultaneous regression equations, and to move beyond the estimation of direct effects (Asher, 1983). It allows for the examination of the causal processes underlying the observed relationships, and the estimation of the relative importance of alternative paths of influence. In this study, path

analysis was considered the last tool in evaluating the study final model, after securing all required reliability and validity tests that determined the model as being fit for the data.

3.10 Qualitative Data Analysis: Coding and Themes

Qualitative data analysis procedures were used to analyse the participants' responses to open-end questions collected from the interview sessions. The analysis was non-mathematical in nature. According to (Kvale, 1996), the phrase 'qualitative analysis' refers to the process of separating the collected response into meaningful parts or elements. In other words, generating meaning from the recorded data. Moreover, Cohen et al. (2007, p. 282) states that

> the great tension in data analysis is between maintaining a sense of the holism of the interview and the tendency for analysis to atomize and fragment the data that separate them into constituent elements, and thereby losing the synergy of the whole. In interviews often the whole is greater than the sum of the parts

In this study, a manual method was used to organize the data through coding and themes. This approach allows more flexibility and arguably makes it easier to get a more holistic overview of the data.

The term 'Coding', as defined by Lofland and Lofland (1995), is the use of labels to help classify and assign meaning to pieces of information. In qualitative analysis, coding is an interpretive procedure that helps make sense of the responses to interview open-ended survey questions. Hence, the main purpose of coding is to organize the data in a way that helps with deducing quantitative results (Taylor and Gibbs, 2010). This study has followed the guiding steps of analysing qualitative data, of Taylor-Powell and Renner (2003), which are summarized as follows:

Step 1: Get to know the data: Careful reading of the data and recording of impressions made by the interviewees, if necessary, and explaining any limitations that exist. Decide on the level of analysis that is deemed appropriate.

Step 2: Focus the analysis: Determine the purpose of the evaluation and identify key questions required to be answered by the analysis. One approach would be to organize the data around the questions directed to the interviewees in order to review any consistencies and differences within the data.

Step 3: Categorise information: Coding or indexing the data to bring meaning to words. Identify themes or patterns, ideas, concepts, behaviours, interactions, incidents, terminologies, or phrases used. Organize them into coherent categories that summarize and bring meanings to the text.

Step 4: Identify pattern and connection within and between categories: Summarize the information pertaining to one theme or capture similarities or differences in responses within the category description, or identify the key idea being expressed. Categories may be combined into a larger category or a related category, with particular attention paid to, frequently appearing categories in the responses, the coexisting of the two or more categories together, or the cause and effect relationship between categories.

Step 5: Interpretation – Bring it all together: Develop a list of key points or important findings and conclude, evaluating what is learned, along with the major lessons and outcomes from the analysis. Present the findings effectively and use quotes and descriptive examples to report the outcomes. This qualitative analysis methodology was used in this study to analyse the data provided from the semi-structured interviews, unstructured interviews, and the focus groups. The process is best illustrated with an example (see Figure 3.6):

A quote from an interviewee statement to a question 'What do you believe Kuwait University could do to encourage instructors to participate in e-learning in the future?'

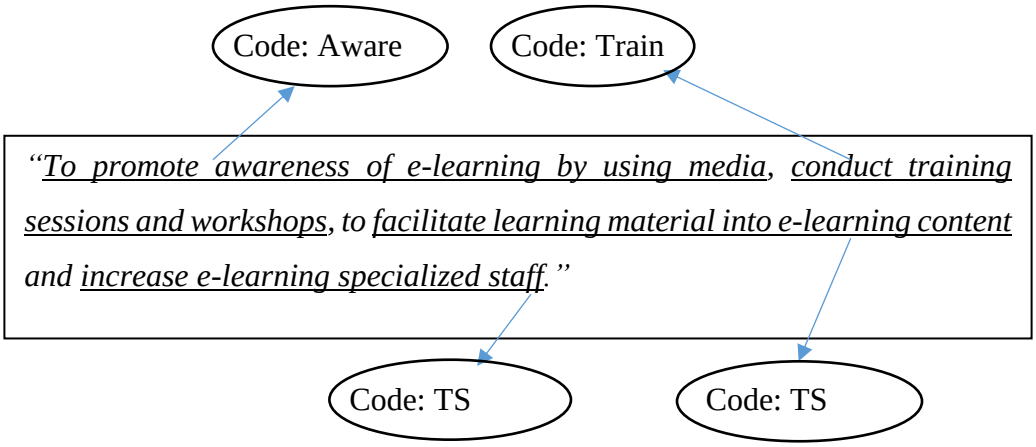

Figure 3.6 – Example of Coding Technique

The statement is segmented into sentences, phrases, or words that reflect individual themes. Accordingly, a spreadsheet is filled with the segments as related codes/themes (see Table 3.16).

Table 3.16 – Example of qualitative analysis using codes and themes

Q	Code	Theme	Segment
What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	Aware	Awareness of e-learning system	To promote awareness of e-learning by using the media
	Train	Training on e-learning	Conduct training sessions and workshops
	TS	Provide Technical Support	Facilitate learning material into e-learning content
			Increase e-learning specialized staff

3.11 Ethical Consideration and Committee Approval

The researcher seeks to balance between the demands of the study and the participants' rights (Cohen, el al., 2003), and to follow the research ethical consideration throughout the study. The ethical principles; non-maleficence, beneficence and autonomy have guided the design work of this study and reflected in every planned and executed step thereafter. The use of research tools such as questionnaires, interviews and focus group discussions present an intrusion into participants' life, on the prospective of time required to participate, the sensitivity of the information they reveal about their experience in the organization and the harm they could suffer as a result, in case their privacy is not preserved. The researcher has referred to Dublin City University, the Research Ethics Committee for guidance. Initially, a request to conduct this study, as well as the ethical form, was submitted to the committee. The project application was reviewed in order to confirm that it complied with the University's research ethics policies. In practice, the policies dictate that no harm comes to the participants as a result of their participation and their rights to withdraw are preserved. Directed by the guidelines and the self-ethical sense, the researcher maintained an informed consent in both verbal and written forms, to familiarize the participants to the research purpose, the responsibility of the researcher toward the collected data, participants privacy rights, the outlook of future benefit from using their opinions in the research, and the disposal of data thereafter the purpose is met. The participants were informed to refer to the DCU Ethics Committee as a neutral party in case they felt their privacy was not maintained or any harm was extended to them because of their participation.

DCU ethics committee approval was, subsequently, granted to begin collecting research data (see Appendix A6). In addition, the survey was conducted with the cooperation of the KU Department of Quantitative Methods & Information Systems, and a written permission to

conduct the research was granted to the researcher accordingly (see Appendix A7). This permission was to assure the participants that KU's responsible entity of surveys, was fully aware of the study, being conducted, and that the participants do not violate KU regulations.

Furthermore, the researcher obtained a permission from the KU Centre for Distance Learning, to use the information and statistics about KU e-learning utilization in the thesis (see Appendix A8).

Chapter Summary

In this chapter, the adopted research methodology based on pragmatic prospective and mixed method strategy of inquiry, which combined both quantitative and qualitative approaches, has been explained. The rationale behind the selected research paradigm has been presented, along with the research objective and research questions. Accordingly, the research design determining the required instruments, for both quantitative and qualitative, was clearly outlined. Furthermore, the research instrument design, the selected analysis tools, and the statistical analysis tests, for reliability and validity, were also discussed, in order to maintain a valid base to examine the research hypotheses. The chapter concluded with a clarification of the ethical considerations that were followed during the fieldwork.

In the following chapter, the outcomes of the study analysis are presented.

4 CHAPTER FOUR: ANALYSIS RESULTS

Chapter two concluded with the study theoretical model which consists of the TAM (Davis, 1989) and the external factors, drawn from the research environment. In turn, chapter three detailed how the theoretical model became the design base for the research instruments, mainly the questionnaire. In addition, the chapter explained how the reliability of questionnaire items was checked through the pilot study before final distribution to the target population. The collected data from 268 out of 300 KU instructors formed the database for rigorous analysis using SPSS and LISREL software packages, with the main objective being to reach the most reliable fit of the relationships between the theoretical model constructs to the collected data. As a result the research's final fitted, and most reliable, model is produced and, accordingly, research questions and hypotheses are formulated, which the final model will validate.

This chapter is divided into three parts; Part A includes the development of the research's final fitted model and the identification of research hypotheses; Part B presents the outcomes of the quantitative data analysis; and Part C presents the outcomes of the qualitative data analysis.

In part A the results of the model fitting process are presented. The fitting process is a collection of dimensionality reduction techniques. Initially, the Cronbach alpha analysis was conducted using SPSS software to ensure the internal reliability and consistency of the multi-scale questionnaire. The analysis resulted in an acceptable Cronbach's alpha value that was based on the most contributing and reduced number of observed variables (questionnaire items) that explain the construct. Furthermore, an exploratory factor analysis technique was conducted using SPSS software where the collected data were explored for the most loaded

and supported model constructs by the survey. Subsequently, the model fitting process concluded with the Structural Equation Modelling (SEM) goodness-to-fit indices checking technique, which was conducted using the LISREL version 8.4 software. As a result, the theoretical model constructs were reduced to fit the collected data. Initially the study theoretical model started with 11 constructs; PU, PEOU, ATT, ITU, CSE, PE, JR, PD, USF, SQ, and TS (see Figure 4.1). The fitting process produced the final fitted model, now consisting of six constructs; PU, PEOU, ATU, CSE, USF and TS (see Figure 4.2).

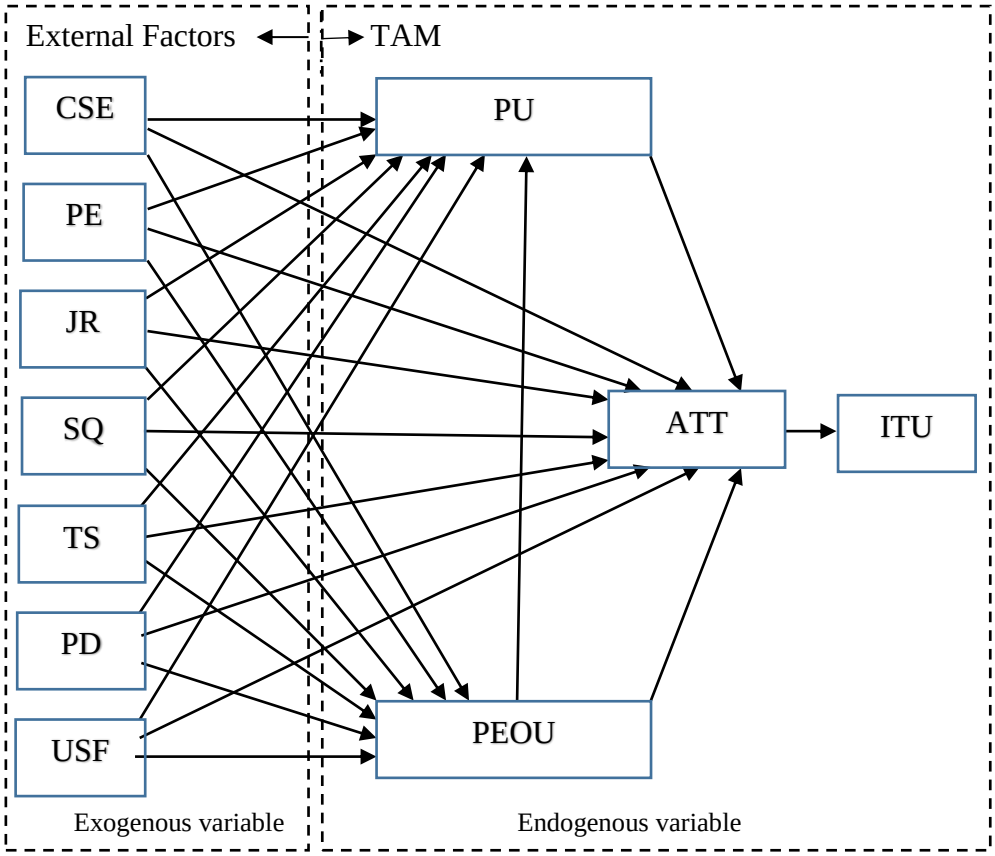

Figure 4.1 – Study Theoretical Model

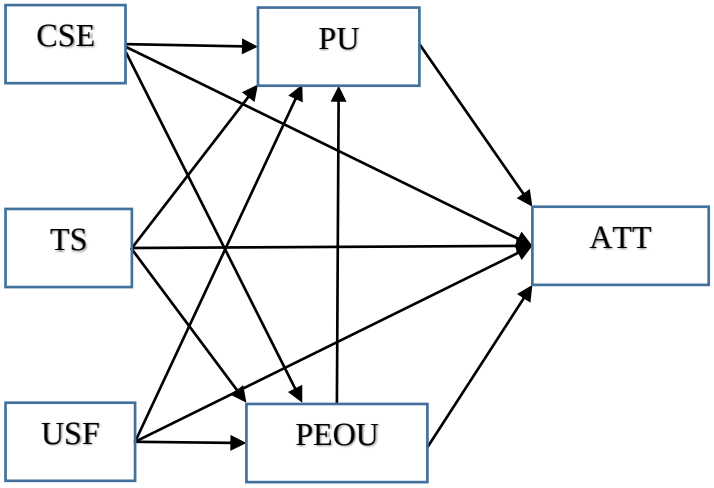

Figure 4.2 – Study Final Model

Part A elaborates further on various analysis techniques to test the reliability and validity of the final model; namely, the correlation matrix between constructs, the discriminant validity between constructs and the composed reliability and variance extracted. Once the final research fitted model is reached, and the exogenous and the endogenous variables are identified, research questions and research hypotheses are then finalized.

Part B initially outlines the demographic characteristic findings of the sample. It then discusses the Structural Equation Modelling (SEM) path analysis technique, which was used to determine the direct, indirect, and total effect relationships between constructs. Accordingly, the research hypotheses were then validated.

In part C, the qualitative data analysis technique, based on coding and themes, is explained. The analysis outcomes are presented, drawn from the collected data from semi-structured, un-structured interviews, and focus group discussions. Nine themes are produced, based on responses from KU administrative staff, instructors and the focus group sessions. The focus group sessions gathered eight KU instructors, among the e-learning system users along with five KU instructors who do not use the e-learning system at KU.

It is worth restating here that the population of interest of this study includes all instructors at KU, and the sample size was calculated using the formula, $= 1.96\% \times p \times (1-p)/e^2$, with a 95 % confidence rate in the resulted estimate, with a margin of error e=5%. The data were collected from 268 instructors, out of 300 distributed questionnaires, with a response rate of 89.3%, which falls within the acceptable research norms.

Part A: Research Final Model Development and Research Hypotheses

4.1 The Study Final Model

As explained in chapter three, and reiterated here, the study theoretical model formed the basis for designing the research survey instrument, with the sample data collected accordingly.

Initially, the analysis process started with a theoretical model that consisted of 11 constructs (see Figure 4.1 above), divided into two sets:

1. First, the endogenous variables (dependent latent variables), representing the TAM constructs, which are by definition, affected by other variables; these are PU, PEOU, ATT, ITU.
2. The second set is the exogenous variables (Independent latent variables), which are those outside of the TAM model, and which are not affected by any other variables; these are CSE, PE, JR, PD, USF, SQ, and TS.
3. After conducting several SEM analysis techniques, a process of testing and re-structuring the theoretical model occurred, rendering it into a model that more accurately and reliably fitted the sampled data. The fitting process resulted in a final model consisting of six constructs; these are PU, PEOU, ATT, CSE, USF, and TS (see Figure 4.2 above).

In the following sections the results of the statistical analysis techniques which were applied to produce the final study model, and which tested its reliability and validity, are presented, namely; Cronbach alpha and exploratory factor analysis, model Goodness-to-fit measures, composite reliability and the variance extracted, correlation measures between model constructs and discriminant validity. The presented techniques have collectively led to the confirmation of the accuracy of the study final model.

4.2 Model Fitting Process: Cronbach's Alpha and Exploratory Factor Analysis

The model fitting process started with the study theoretical model and ended with the final model that fitted the collected data. Initially, the fitting process checked the reliability of the survey instrument multi-item scales (questionnaire). The most commonly used reliability check is the Cronbach alpha analysis, which is a measure of the internal consistency between the items of the instrument. It 'provides a coefficient of inter-item correlations, that is, the correlation of each item with the sum of all the other items' (Creswell, 2003). In addition, the fitting process included the data exploratory factor analysis, which is a dimensionality reduction technique that aims to find the factors (model constructs) most supported by the data. Both Cronbach alpha and exploratory factor analysis were conducted using SPSS version 22. The analysis outcomes are presented, below, for the selected constructs.

Perceived Usefulness (PU)

The following, Table 4.1, is limited to the data that passed both the reliability and the exploratory factor checking analysis for PU. The table shows the explained variance, 89.559%, factor loading for the first statement is 0.895, the second statement is 0.930, the third statement is 0.862, and the Cronbach's reliability coefficient α is 94%, for the construct

in the study instrument. As displayed, the reliability is greater than 70%. From a statistical standpoint, the reliability and variances are within the accepted level.

Table 4.1 – Explained Variance, Reliability coefficient α for Perceived Usefulness

Questionnaire Items	Explained variance	Factor Loading	Cronbach's Reliability
Perceived Usefulness (PU)	89.559%		94%
Using the e-learning system in teaching improves my job performance.		.895	
Using the e-learning system in teaching enhances my job effectiveness.		.930	
Using the e-learning system in teaching increases my productivity.		.862	

Perceived Ease of Use (PEOU)

Table 4.2 displays both the reliability and the exploratory factor checking analysis for PEOU. The table shows the explained variance of 83.157%, the factor loading for first item is 0.833, second item is 0.852, the third item is 0.809, and the Cronbach's reliability coefficient α is 89.8%, for the construct in the study instrument. As displayed, the reliability is greater than 75.5%. From a statistical standpoint, the reliability and variances are within accepted levels.

Table 4.2 – Explained Variance, Reliability coefficient α for Perceived Ease of Use

Questionnaire Items	Explained variance	Factor Loading	Cronbach's Reliability
Perceived Ease of Use	83.157%		89.8%
Interacting with the e-learning system is clear and understandable.		.833	
Interacting with the e-learning system is not complicated.		.852	
The e-learning system is flexible to interact with.		.809	

Attitude (ATT)

Table 4.3 is limited to the data that passed both the reliability and the exploratory factor checking analysis for ATT. The table shows the explained variance at 86.570%, factor loading for the first statement at 0.881, the second statement at 0.862, the third statement at 0.854, and the Cronbach's reliability coefficient α at 92.2%, for the construct in the study instrument. As displayed, reliability is greater than 75.5%. From a statistical standpoint, the reliability and variances are within accepted levels. What is interesting to mention here is that the ATT items and the Intention to Use (ITU) e-learning system items were not separated into separate factors by the exploratory factor analysis but rather loaded on the ATT factor. As such, it eliminated ITU as playing a separate part in the subsequent analysis to come.

Table 4.3 – Explained Variance, Reliability coefficient α for Attitude

Questionnaire Items	Explained variance	Factor Loading	Cronbach's Reliability
Attitude (ATT)	86.570%		92.2%
Using the e-learning system makes my work more enjoyable.		.881	
I like using the e-learning system.		.862	
The e-learning system makes my work more interesting.		.854	

Computer Self-efficacy (CSE)

Table 4.4 displays both the reliability and the exploratory factor checking analysis for CSE. The table shows the explained variance at 67.634%, factor loading for first item at 0.810, second item at 0.876, third item at 0.778, and the Cronbach's reliability coefficient α at 75.7%, for the construct in the study instrument; as displayed, reliability is greater than 75.5%. From a statistical standpoint, the reliability and variances are within accepted levels.

Table 4.4 – Explained Variance, Reliability coefficient α for Computer Self-efficacy

Questionnaire Items	Explained variance	Factor Loading	Cronbach's Reliability
Computer Self-Efficacy (CSE)	67.634%		75.7%
I could complete e-learning tasks using computers if I were to see someone else doing it effectively.		.810	
I could complete e-learning tasks using computers if I had used a similar package before to do the same tasks.		.876	
I can complete e-learning tasks using computers if I have the system manual/ guidelines for reference.		.778	

University Strategic Focus (USF)

Table 4.5 is limited to the data that passed both the reliability and the exploratory factor checking analysis for USF. The table shows the explained variance at 76.104%, factor loading for the first statement at 0.721, the second statement at 0.818, the third statement at 0.744, and the Cronbach's reliability coefficient α at 83.9%, for the construct in the study instrument; as displayed, reliability is greater than 75.5%. From a statistical standpoint, the reliability and variances are within accepted levels.

Table 4.5 – Explained Variance, Reliability coefficient α for University Strategic Focus

Questionnaire Items	Explained variance	Factor Loading	Cronbach's Reliability
University Strategic Focus (USF)	76.104%		83.9%
I think a university policy exists to encourage the use of e-learning system.		.721	
Using e-learning system in my teaching complies with university policy.		.818	
Using e-learning system in my teaching justifies the funds spent by the university on the system.		.744	

Technical Support (TS)

Table 4.6 displays both the reliability and the exploratory factor checking analysis for TS. The table shows the explained variance at 92.860%, factor loading for first item at 0.927, second item at 0.937, third item at 0.922, and the Cronbach's reliability coefficient α at 96.2%, for the construct in the study instrument; as displayed, reliability is greater than 75.5%. From a statistical standpoint, the reliability and variances are within accepted levels.

Table 4.6 – Explained Variance, Reliability coefficient α for Technical Support

Questionnaire Items	Explained variance	Factor Loading	Cronbach's Reliability
Technical Support (TS)	92.860%		96.2%
E-learning system technical support offered by the university improves my teaching		.927	
E-learning system technical support offered by the university increases my productivity.		.937	
E-learning system technical support offered by the university makes e-learning system more effective.		.922	

In summary, in this subsection the research's final fitted model has been concluded, in which the selected constructs (factors) were reliably explained, based on the most contributing questionnaire items, with the constructs representing the strongest relationships, based on the data, identified. Hence, the identified model was deemed ready for further analysis to ensure other aspects of model reliability and validity were met, as explained in the following subsections.

4.3 Confirmatory Factor Analysis: Goodness-of-Fit Indices

Structural Equation Modelling (SEM) techniques were utilized to measure the reached model's goodness-of-fit indices against measurement criteria (see Table 3.15). Several measures of goodness-of-fit were determined, namely; Normed Fit Index (NFI) = 0.94, Non-Normed Fit Index (NNFI) = 0.94, Incremental Fit Index (IFI) = 0.95, Relative Fit Index (RFI)

= 0.92, Critical N (CN) = 82.83, Root Mean Square Residual (RMSR) = 0.052, Standardized RMR = 0.052, Goodness of Fit Index (GFI) = 0.90, Adjusted Goodness of Fit Index (AGFI) = 0.87, Parsimony Normed Fit Index (PNFI) = 0.74, and Comparative Fit Index (CFI) = 0.95. All measures of goodness-of-fit indicate that the final model is adequate in fitting the data. In particular, RMR = 0.052 (recommended 0.05 or less; Hair et al., 2010), GFI = 0.83, and AGFI = 0.76.

Accordingly, the tested model was found good-to-fit as a study model; however, further analysis needed to be conducted, as explained below.

4.4 Correlation Measures between Different Constructs

Correlation measures the direction and the strength of the linear relationship between two variables. As shown in Table 4.7 below, a strong positive and significant correlation exists between PU and PEOU (r=0.53, P=0.000) and ATT (r=0. 83, p=0. 000). By contrast, a weak positive correlation is noticed between PU and CSE (r=0.48, p=0.000) on the one hand, and USF (r=0.31, p=0,000) and TS (r=0.29, p=0.000), on the other hand. Means, although PU (dependent variable) is influenced by CSE, USF and TS (independent variables), the association and dependency relationship between them varies from one variable to another. In this case, PU is more associated in its relationship with CSE (r=0.48) than USF (r=0.31), and in turn, with TS (r=0.29). Other similar relationships can be seen from the data in Table 4.7.

Table 4.7 – Correlation Between the measured variables

	Square root of (AVE)	Perceived Usefulness	Perceived Ease of Use	Attitude	Computer Self-Efficacy	University Strategic Focus	Technical Support
Perceived Usefulness P-Value	0.9555	1.00					
Perceived Ease of Use P-Value	0.9084	0.53 (0.000)	1.00				
Attitude P-Value	0.9242	0.83 (0.000)	0.61 (0.000)	1.00			
Computer Efficacy P-Value	0.7798	0.48 (0.000)	0.36 (0.000)	0.49 (0.000)	1.00		
University Strategic Focus P-Value	0.8418	0.31 (0.000)	0.44 (0.000)	0.38 (0.000)	0.28 (0.000)	1.00	
Technical Support P-Value	0.9610	0.29 (0.000)	0.29 (0.000)	0.35 (0.000)	-0.03 (0.307)	0.51 (0.000)	1.00

4.5 Discriminant Validity

In this subsection, the discriminant validity tested the degree to which any two sets of model constructs were discriminately measuring two different aspects. According to Fornell & Larcher (1981), the square root of Average Variance Extracted (AVE) for each construct is required to be higher than its correlation with other constructs. Referring to Table 4.8 above,

for example, the square root of PU AVE is 0.9555, which is higher than the PU correlation with PEOU, which is 0.53, and similarly with ATT 0.83, CSE 0.48, USF 0.31 and TS 0.29. Table 4.8 indicates that all constructs are discriminately valid and that the respondents were distinguishing the questions from each other.

4.6 Composite Reliability and the Variance Extracted

The composite reliability is a measure of the consistency of the instrument in measuring the construct. The second column in Table 4.8 presents the values of the constructs composite reliability. Commonly, a composite reliability of 70% or more is acceptable (Hair, et al., 2010). As shown, all composite reliabilities are 82.02% and above, which is higher than the threshold given by Sharma (1996) and Hair et al. (2010).

Table 4.8 – The Composite Reliability Analysis Outcomes

Constructs	Composite Reliability	Average Variance Extracted (AVE)	R^2
Perceived Usefulness	96.92%	91.3%	42%
Perceived Ease of Use	93.41%	82.51%	27%
Attitude	95.03%	85.42%	78.5%
Computer Efficacy	82.02%	60.81%	
University Strategic Focus	87.91%	70.86%	
Technical Support	97.32%	92.36%	

Another measure of internal reliability is the variance extracted; the measure evaluates the overall amount of explaining variations accounted for by the instruments. Variance extracted

of 50% or more is considered adequate (Sharma, 1996; Hair et al., 2010). As shown in Table 4.8 above, all constructs have extracted variance much higher than 50%, the threshold given by Hair et, al. (2010).

Moreover, the coefficient of determination (R^2), indicates the extend of variation in the independent variables (CSE, USF and TS) that are explained by the dependent variable (PU or PEOU or ATT), when are evaluated individually. For example, R^2 value for PU is 42%, which means PU explain 42% of the variations in CSE, USF and TS variables that are loading up on it. Similarly, 27% is the extent of variation explained by PEOU. In this case, PU is a better predictor than PEOU of the variation of CSE, USF and TS. Also, ATT explains 78.5% of the variation in PU and PEOU, which is considered a good predictor of PU and PEOU. It is noticed that there are no R^2 values for CSE, USF and TS because they are independent variables, which are not influenced by other variables.

4.7 Path Analysis and Research Questions and Related Hypotheses

The outcome of the previous Structural Equation Modelling (SEM) process has produced the research's final model, which then has been analysed using SEM path analysis, using LISREL software version 8.5. Figure 4.3 illustrates the LISREL presentation of the research final model, indicating the six latent variables; namely, PU, PEOU, ATT, CSE, USF, and TS in ellipse shapes, and 18 observed variables in rectangular shapes, reflecting the questionnaire items that, most reliably, measure the related constructs.

It is worth mentioning here that the SEM path analysis postulates the causal relationship between two constructs in three types of effects; The direct effect between two constructs, if two pairs of constructs are directly related; The indirect effect, which transmits the effect of a given construct on other constructs via one or more constructs, indirectly; and the total

effect, which is a cumulative result of both the direct and the indirect effects of one construct on the other ones. In the following section, the research questions and related hypotheses are presented.

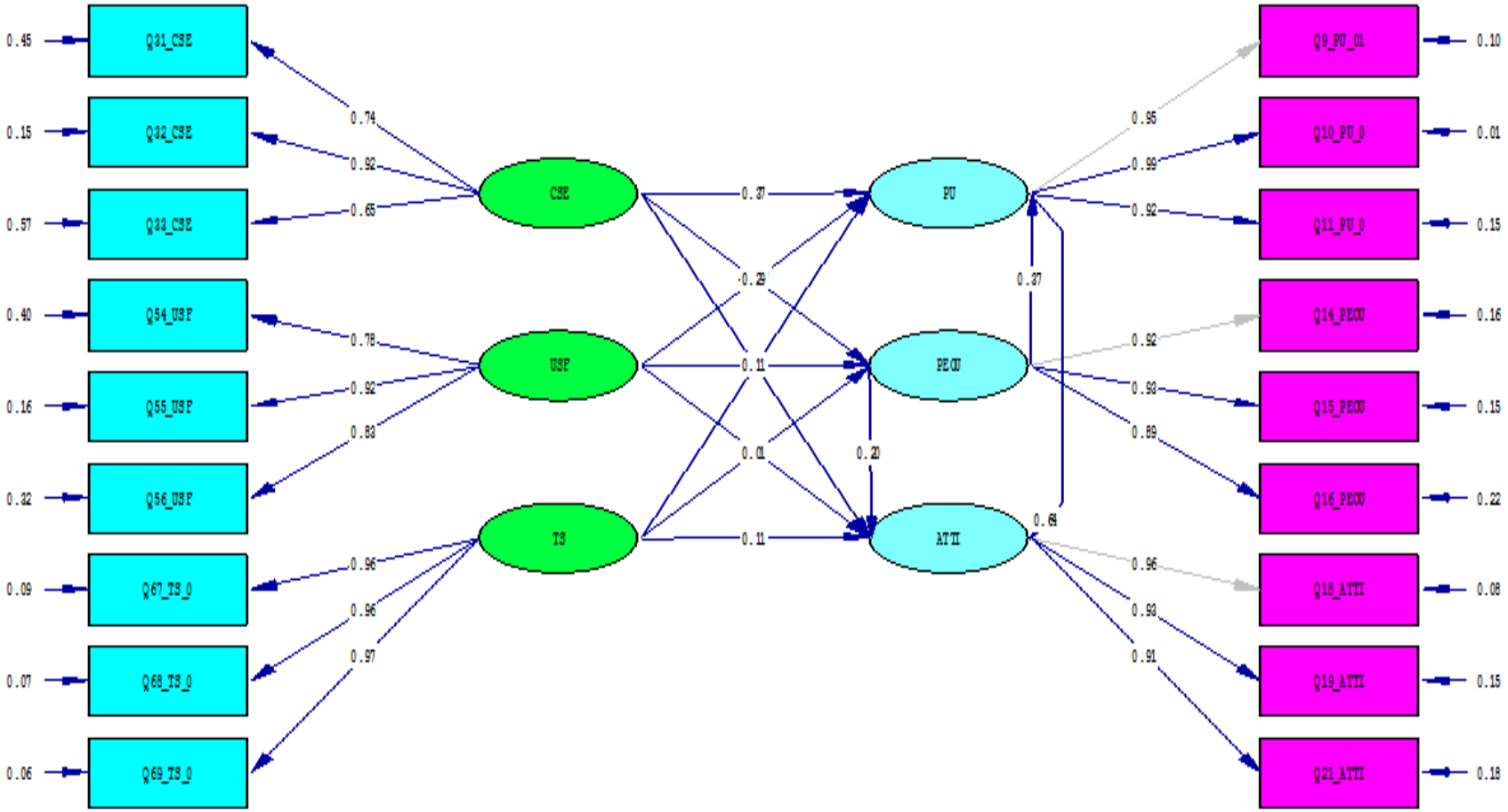

Figure 4.3 – Study Final Model presentation using LISREL software

At this stage, the research questions and research hypotheses are formulated.

Q1: How do a range of variables from instructors' backgrounds such as gender, age, type of college (Art or Science), academic position, teaching experience, different levels of use of the e-learning system, professional development of e-learning, the e-learning system being selected for use by the instructors - influence their perspectives on e-learning at KU?

There are seven hypotheses related to the instructor's demographic characteristics:

Ha1: Do instructors with different genders have different attitudes toward e-learning at KU?

Ha2: Do instructors of different ages have different attitudes toward e-learning at KU?

Ha3: Do instructors from different colleges have different attitude toward e-learning at KU?

Ha4: Do instructors with different academic position have different attitudes toward e-learning at KU?

Ha5: Do instructors with different levels of teaching experiences have different attitudes toward e-learning at KU?

Ha6: Do instructors with different levels of use of the e-learning system have different attitudes toward e-learning at KU?

Ha7: Do instructors who attended professional development sessions on e-learning system (attended and not attended) have different attitudes toward e-learning at KU?

Ha8: Do instructors with different e-learning system selected for use have different attitudes toward e-learning at KU?

Research Q1 related hypotheses are discussed and finalized, based on the outcome of statistical analysis (see section 4.9).

Q2. What are the instructors' perspectives on e-learning at KU?

The research final model identifies the external variables that influence the instructor's perspectives of e-learning systems. To examine the model and explain the relationships among different groups of the endogenous variables (dependent); Perceived Usefulness (PU), Perceived Ease of Use (PEOU) and Attitude (ATT), and the exogenous variables (independent); Computer Self-Efficacy (CSE), University Strategic Focus (USF) and Technical Support (TS), the following hypotheses have been formulated for Research Question 2:

Direct Effect of Exogenous on Endogenous Variables

(See Figure 4.4):

H_{b1}: CSE has a negative direct effect on the PU of the e-learning system.

H_{b2}: CSE has a negative direct effect on PEOU of the e-learning system.

H_{b3}: CSE has a negative direct effect on the ATT toward the use of the e-learning system.

H_{b4}: USF has a negative direct effect on the PU of the e-learning system.

H_{b5}: USF has a negative direct effect on PEOU of the e-learning system.

H_{b6}: USF has a negative direct effect on the ATT toward the use of the e-learning system.

H_{b7}: TS has a negative direct effect on the PU of the e-learning system.

H_{b8}: TS has a negative direct effect on PEOU of the e-learning system.

H_{b9}: TS has a negative direct effect on ATT toward the use of the e-learning system.

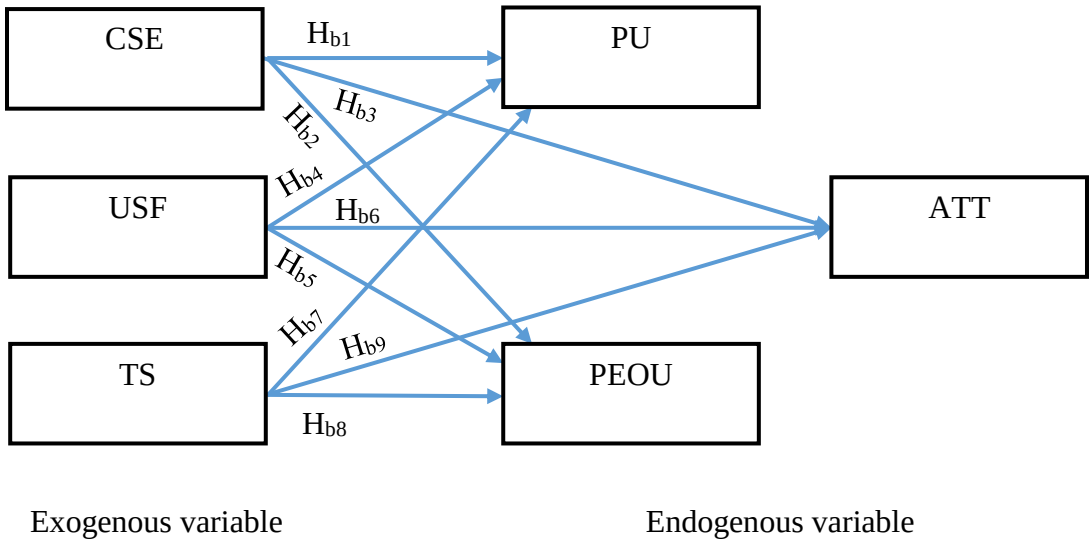

Figure 4.4 – Study Final Model – Direct Effect Hypotheses

Indirect Effect of Exogenous on Endogenous Variables

(See Figure 4.5):

H_{c1}: CSE has a negative indirect effect on the PU of the e-learning system.

H_{c2}: CSE has a negative indirect effect on the ATT toward the use of the e-learning system.

H_{c3}: USF has a negative indirect effect on the PU of the e-learning system.

H_{c4}: USF has a negative indirect effect on the ATT toward the use of the e-learning system.

H_{c5}: TS has a negative indirect effect on the PU of the e-learning system.

H_{c6}: TS has a negative indirect effect on the ATT toward the use of the e-learning system.

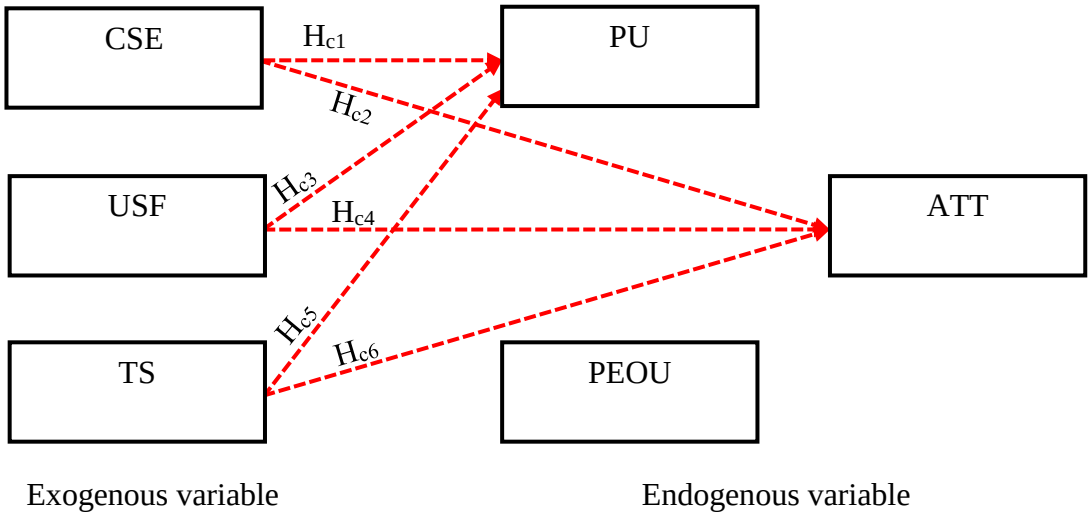

Figure 4.5 – Study Final Model – Indirect Effect Hypotheses

Total Effect of Exogenous on Endogenous Variables

(See Figure 4.6):

H_{d1}: CSE has a negative total effect on the PU of the e-learning system.

H_{d2}: CSE has a negative total effect on PEOU of the e-learning system.

H_{d3}: CSE has a negative total effect on the ATT toward the use of the e-learning system.

H_{d4}: USF has a negative total effect on the PU of the e-learning system.

H_{d5}: USF has a negative total effect on the PEOU of the e-learning system.

H_{d6}: USF has a negative total effect on the ATT toward the use of the e-learning system.

H_{d7}: TS has a negative total effect on the PU of the e-learning system.

H_{d8}: TS has a negative total effect on the PEOU of the e-learning system.

H_{d9}: TS has a negative total effect on the ATT toward the use of the e-learning system.

H_{d10}: PU has a negative total effect on the ATT toward the use of the e-learning system.

H_{d11}: PEOU has a negative total effect on the PU of use of the e-learning system.

H_{d12}: PEOU has a negative total effect on the ATT toward the use of the e-learning system.

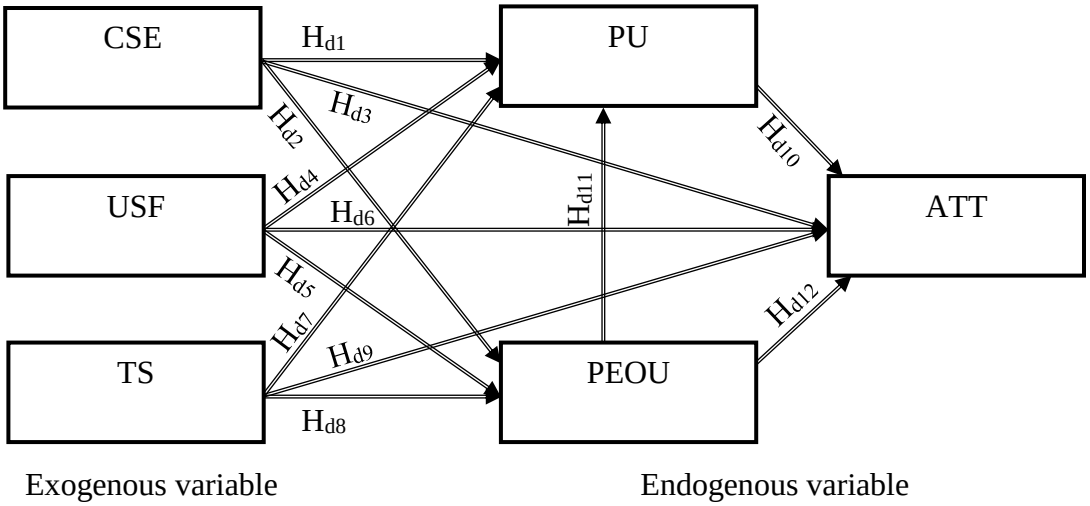

Figure 4.6 – Study Final Model –Total Effect Hypotheses

The research questions and associated hypotheses have been identified now. In Part B, of this chapter, the collected data, based on the final model is further analysed in order to validate the hypotheses.

Part B: Research Data Analysis and Results

Here, the research hypotheses are validated based on further analysis. It starts with section 4.8 on the demographic characteristics distribution of the sampled data. In section 4.9 the demographic characteristics effect of instructors' perspectives toward e-learning system and validation of their associated hypotheses are examined. Section 4.10 will then look at the causal effect between the research variables and validation of their associated hypotheses. The SPSS software version 22, as well as Structural Equation Modelling (SEM) path analysis technique, using the LISREL programme, version 8.5, have been employed for the purpose.

4.8 Demographic Characteristics of the Sample

The study instrument included several questions that outlined the demographic profile of the sampled population. In this section, several analyses are presented that discuss different demographic characteristic of the sample. The analysis of the survey revealed that 64.9%, 174 participants, of the samples were male instructors, and 35.1%, 94 participants, were female instructors (see Figure 4.7).

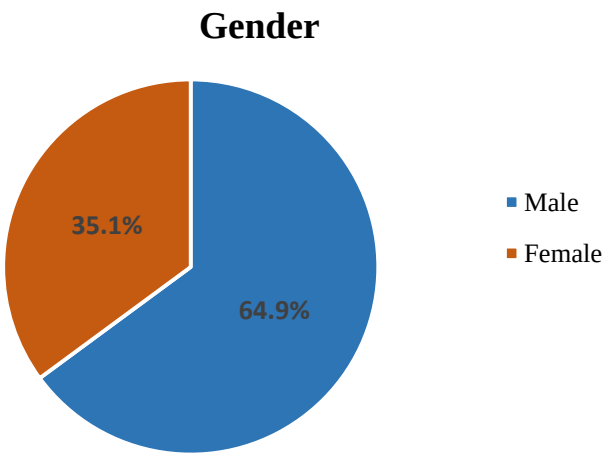

Figure 4.7 – Sample Gender Distribution Chart

Regarding respondents' age groups (see Figure 4.8), the study showed the following: 12.7%, 34 participants, were less than or equal to 35 years of age, 46.6%, 125 participants, were in the age group 36-45, 22%, 59 participants, were in the age group 46-55, and 18.7%, 50 participants, were 56 years and above.

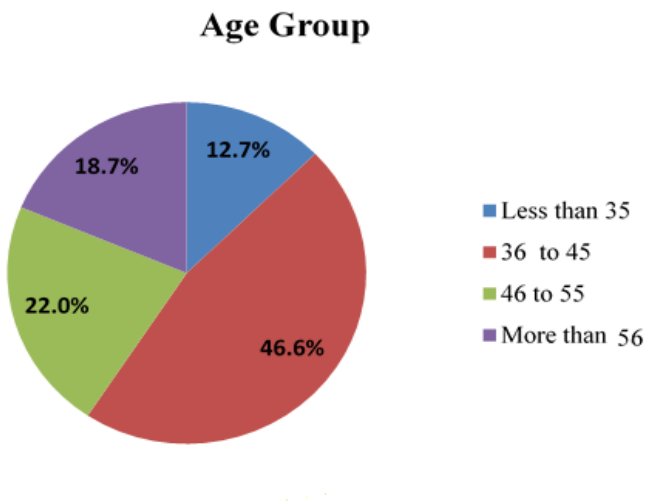

Figure 4.8 – Sample Age Group Distribution Chart

It also revealed that 42.9%, 115 participants, were in colleges of art major and 57.1%, 153 participants, were in colleges of a science major (see Figure 4.9).

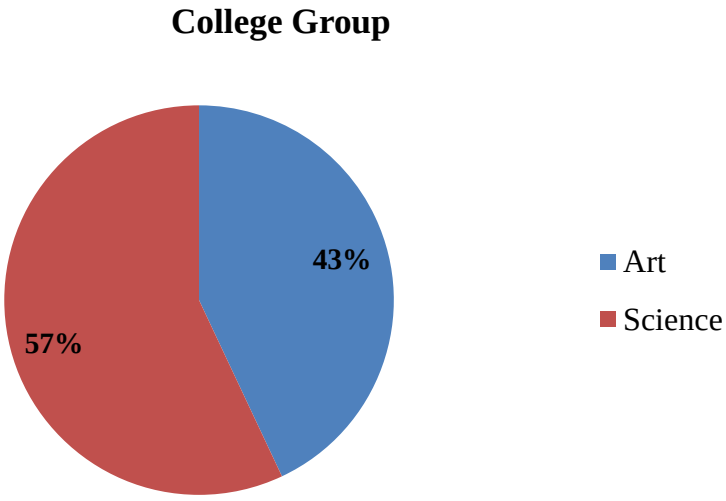

Figure 4.9 – Sample College Group Distribution Chart

Among the respondents (see Figure 4.10), 58.2%, 156 participants, were assistant professors, 30.2%, 81 participants, were associate professors, and 11.6%, 31 participants, were professors.

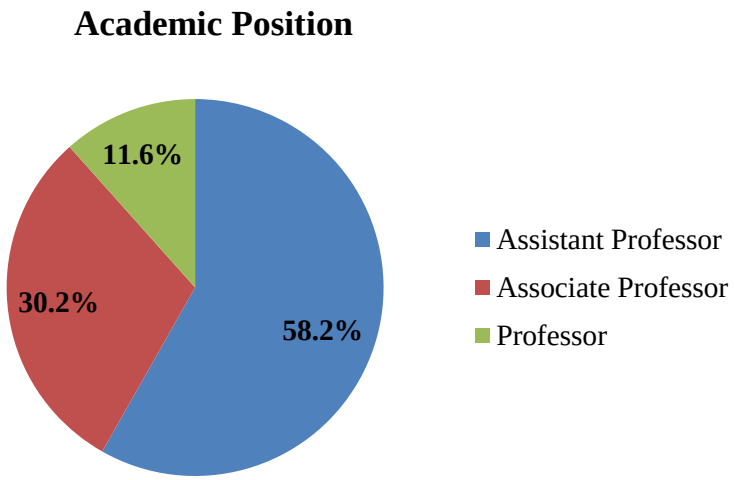

Figure 4.10 – Sample Academic Position Distribution Chart

Regarding the respondents' teaching experience (see Figure 4.11), 22%, 59 participants, had 1-5 years, 29.1%, 78 participants, had 6-10 years, 19.4%, 52 participants, had 11-15 years, and 29.5%, 79 participants, had 16 years and more.

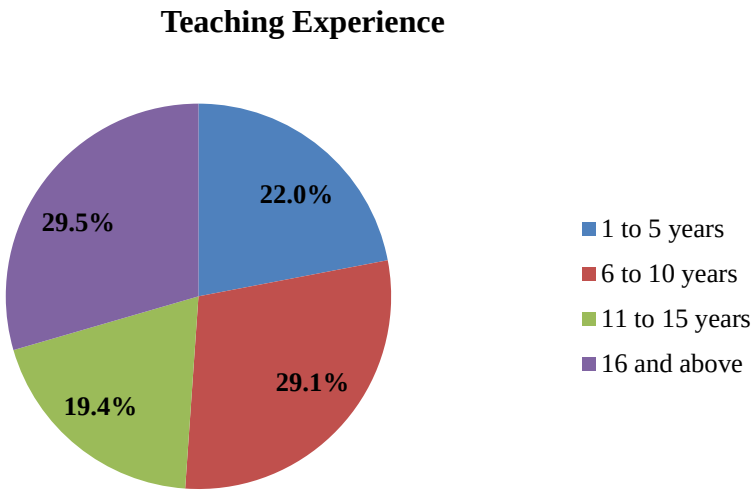

Figure 4.11 – Sample Teaching Experience Distribution Chart

The survey also addresses several questions to identify their levels of use of e-learning in teaching courses at KU (see Figure 4.12). A 31.3%, 84 participants, emphasized that they used e-learning in all their courses. 39.6%, 106 participants, indicated that they used it only in some courses, whereas 29.1%, 78 participants, never used e-learning in teaching.

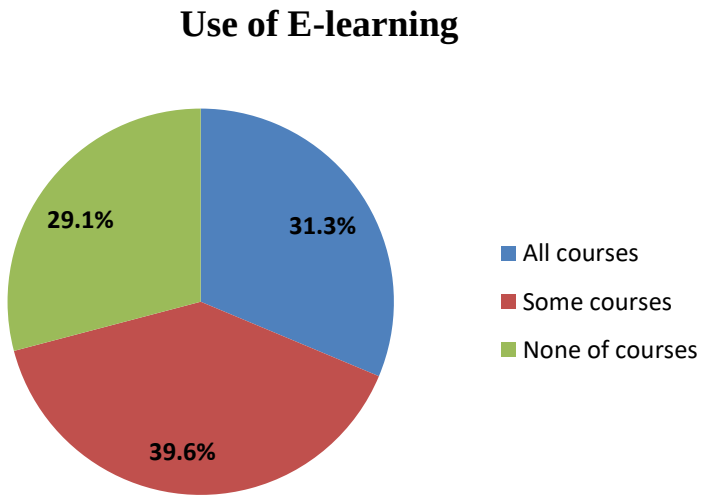

Figure 4.12 – Sample Levels of use of e-learning in teaching courses at KU

It is worth mentioning here that, this item reflects the extent of actual use of e-learning in KU. Therefore, it was deemed necessary to further analyse the demographic characteristic, with respect to the use of e-learning, as indicated in Tables 4.9 to 4.13.

Table 4.9 – Level of use of e-learning system at KU by gender

Gender	All of my courses	Some of my courses	None of my courses	Total
Male	52	74	48	174
%	19.4%	27.6%	17.9%	64.9%
Female	32	32	30	94
%	11.9%	11.9%	11.2%	35.1%
Total	84	106	78	268
%	31.3%	39.6%	29.1%	100.0%

Based on Table 4.9 above, 70.9% of the sampled population are instructors using e-learning system in either some or all of their courses and 29.1% do not use e-learning, while 47% of the instructors are male users and 23.8% are female users.

Table 4.10 – Level of use of e-learning system at KU by age

Age	All of my courses	Some of my courses	None of my courses	Total
35 and less	11	14	9	34
%	4.1%	5.2%	3.4%	12.7%
36 to 45	43	46	36	125
%	16.0%	17.2%	13.4%	46.6%
46 to 55	15	26	18	59
%	5.6%	9.7%	6.7%	22.0%
56 and above	15	20	15	50
%	5.6%	7.5%	5.6%	18.7%
Total	84	106	78	268
%	31.3%	39.6%	29.1%	100.0%

Similarly, Table 4.10 indicates that 9.3% of the instructors are e-learning users of 35 years and less in age, 33.2% are 36 to 45 of age, 15.3% are 46 to 55, and 13.1% are 55 years and above. If instructors, aged 45 and below, are considered the younger generation, they constitute 42.5% of the sampled population of KU instructors who are using e-learning in KU.

Table 4.11 – Level of use of e-learning system at KU by college type

College Type	All of my courses	Some of my courses	None of my courses	Total
Art	40	48	27	115
%	14.9%	17.9%	10.1%	42.9%
Science	44	58	51	153
%	16.4%	21.6%	19.0%	57.1%
Total	84	106	78	268
%	31.3%	39.6%	29.1%	100.0%

Meanwhile, Table 4.11 above indicates that 31.8% of the sampled instructors are e-learning users in art colleges and 38% are in science colleges.

Table 4.12 – Level of use of e-learning system at KU by academic position

Position	All of my courses	Some of my courses	None of my courses	Total
Assistant Professor	54	54	48	156
%	20.1%	20.1%	17.9%	58.2%
Associate Professor	24	32	25	81
%	9.0%	11.9%	9.3%	30.2%
Professor	6	20	5	31
%	2.2%	7.5%	1.9%	11.6%
Total	84	106	78	268
%	31.3%	39.6%	29.1%	100.0%

Also, Table 4.12 above indicates that 40.2% of the instructors are e-learning users with academic position of assistant professors, 20.9% are associate professors and 9.7% are full professors.

Table 4.13 – Level of use of e-learning system at KU by number of years teaching

Years of experience	All of my courses	Some of my courses	None of my courses	Total
1 to 5	19	29	11	59
%	7.1%	10.8%	4.1%	22.0%
6 to 10	23	21	34	78
%	8.6%	7.8%	12.7%	29.1%
11 to 15	22	19	11	52
%	8.2%	7.1%	4.1%	19.4%
16 and above	20	37	22	79
%	7.5%	13.8%	8.2%	29.5%
Total	84	106	78	268
%	31.3%	39.6%	29.1%	100.0%

In addition, Table 4.13 above indicates that 17.9% of the instructors are e-learning users in 1 to 5 years of experience at KU, 16.4% are 6 to 10 years, 15.3% are 11 to 15 years and 21.3 are 16 and above in years of experience at KU.

Moreover, in Figure 4.13, 43.7%, 117 participants, pointed out that they have had professional training on e-learning, while 56.3%, 151 participants, have not had any professional training.

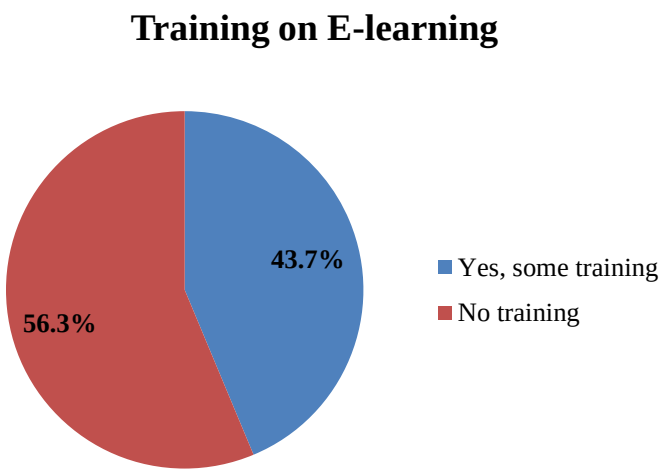

Figure 4.13 – Sample instructors' responses on acquisition of training on e-learning

Also, on participants' responses to the e-learning system being used in their teaching courses (see Figure 4.14), 48.1%, 125 participants, confirmed using the Blackboard system, which is KU's official e-learning system, whereas 51.9%, 135 participants, used other systems.

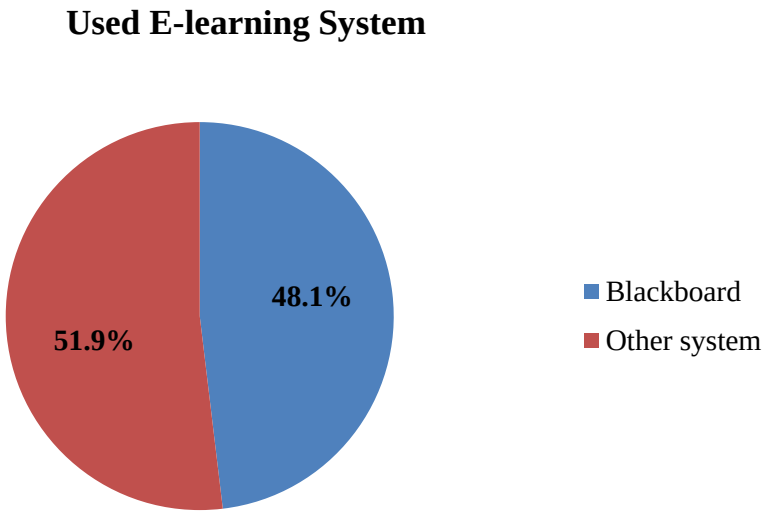

Figure 4.14 – Sample e-learning system used in teaching courses chart

4.9 Effect of Demographic Levels on Research Variables

In this section, several statistical testing procedures were conducted to investigate whether instructors with different levels of demographic characteristics had different attitudes toward the research dimensions. First, a Kolmogorov-Smirnov test was performed to validate the normality assumptions, which was required to find if parametric tests could be applied or not. As shown in Table 4.13 below, all six dimensions are not normally distributed. Therefore, it was necessary to resort to non-parametric statistical techniques to verify whether significant differences existed between different demographic levels. In the case of two independent groups such as gender, the non-parametric Mann-Whitney test was applied, whereas for more than two groups such as experience, the Kruskal–Wallis test was implemented.

Table 4.14 – The validity of Normality Assumptions

One-Sample Kolmogorov-Smirnov Test							
		PU	PEOU	ATT	CSE	USF	TS
N		268	268	268	268	268	268
Normal Parameters	Mean	4.0458	3.5373	3.8379	3.8629	3.4461	3.2846
	Std. Deviation	.89545	.85779	.91215	.76989	.95085	.98584
Most Extreme Differences	Absolute	.168	.157	.171	.113	.107	.161
	Positive	.143	.112	.101	.101	.062	.147
	Negative	-.168-	-.157-	-.171-	-.113-	-.107-	-.161-
Test Statistic		.168	.157	.171	.113	.107	.161
Asymp. Sig. (2-tailed)		.000	.000	.000	.000	.000	.000

4.9.1 Effect of Gender and the Assertion of the hypothesis H_{a1}

There were a number of hypotheses posed in research question 1 (see section 4.7). The first of these hypotheses was designated as follows: Do instructors with different genders have different attitudes toward e-learning at KU?

The results in Table 4.15 show the following:

For males, N=174 (PU mean 4.0334, Std. Deviation .88714), (PEOU mean 3.5803, Std. Deviation .80860), (ATT mean 3.8311, Std. Deviation .89811), (CSE mean 3.7840, Std. Deviation .74981), (USF mean 3.4231, Std. Deviation .95731) (TS mean 3.2239, Std. Deviation .96711),

For females, N=94 (PU mean 4.0687, Std. Deviation .91500), (PEOU mean 3.4579, Std. Deviation .94147), (ATT mean 3.8506, Std. Deviation .94232), (CSE mean. 4.0090, Std. Deviation .78908), (USF mean 3.4887, Std. Deviation .94239) (TS mean 3.3969, Std. Deviation 1.01525),

As illustrated in Table 4.15, both males and females have a positive attitude towards PU, PEOU, ATT, USF and TS, however, there are no significant differences between males and females' perceptions of the research dimensions, except for CSE. Although both males and females have a positive attitude toward CSE (p-value =0.012), females are more positive than males, which partially supports H_{a1} ; *Instructors with different genders have different attitudes toward e-learning at KU*.

Table 4.15 – Mann-Whitney Test for difference between gender levels

Mann Whitney Test For Gender							
Gender		PU	PEOU	ATT	CSE	USF	TS
Male	Mean	4.0334	3.5803	3.8311	3.7840	3.4231	3.2239
	N	174	174	174	174	174	174
	Std. Deviation	.88714	.80860	.89811	.74981	.95731	.96711
Female	Mean	4.0687	3.4579	3.8506	4.0090	3.4887	3.3969
	N	94	94	94	94	94	94
	Std. Deviation	.91500	.94147	.94232	.78908	.94239	1.01525
Total	Mean	4.0458	3.5373	3.8379	3.8629	3.4461	3.2846
	N	268	268	268	268	268	268
	Std. Deviation	.89545	.85779	.91215	.76989	.95085	.98584
P-value		.538	.421	.963	*.012	.604	.136

* Values < 0.05 are significant.

4.9.2 Effect of Age Group and the Assertion of the Hypothesis H_{a2}

The second hypothesis was posed as follows: Do instructors with different ages have different attitudes toward e-learning at KU?

The results in Table 4.16 are as follows:

Age 35 and less N=34 (PU mean 4.4034, Std. Deviation .69008), (PEOU mean 3.4998, Std. Deviation .91945), (ATT mean 4.0692, Std. Deviation .81966), (CSE mean 4.0070, Std. Deviation .66746), (USF mean 3.1397, Std. Deviation 1.20165) (TS mean 2.8334, Std. Deviation .91831),

Age 36 to 45 N=125 (PU mean 4.0786, Std. Deviation .86260), (PEOU mean 3.5894, Std. Deviation .78252), (ATT mean 3.9032, Std. Deviation .88466), (CSE mean 3.9178, Std.

Deviation .71599), (USF mean 3.4584, Std. .93622) (TS mean 3.2985, Std. Deviation 1.03075),

Age 46 to 55 N=59 (PU mean 3.8531, Std. Deviation 1.02046), (PEOU mean 3.4795, Std. Deviation .98139), (ATT mean 3.6491, Std. Deviation .99320), (CSE mean 3.8780, Std. Deviation .81365), (USF mean 3.5706, Std. Deviation .87005) (TS mean 3.4177, Std. Deviation .97999), and

Age 56 and above N=50 (PU mean 3.9479, Std. Deviation .88710), (PEOU mean 3.5010, Std. Deviation .85854), (ATT mean 3.7403, Std. Deviation .91232), (CSE mean 3.6097, Std. Deviation .87238), (USF mean 3.4767, Std. Deviation .86878) (TS mean 3.3994, Std. Deviation .85199).

Table 4.16 presents the results of the Kruskal–Wallis test of age group. Almost all groups had positive attitudes toward the research dimensions. There were no significant differences between their views on all dimensions, except for PU, which showed that younger faculty members had a more positive attitude toward the usefulness of e-learning than older faculty members (p-value= 0.039), thereby partially confirming H_{a2}; *instructors with different ages have different attitudes toward e-learning at KU*.

Table 4.16 – Kruskal-Wallis Test for difference between Instructors Age Groups

Kruskal–Wallis Test							
Age		PU	PEOU	ATT	CSE	USF	TS
35 and less	Mean	4.4034	3.4998	4.0692	4.0070	3.1397	2.8334
	N	34	34	34	34	34	34
	Std. Deviation	.69008	.91945	.81966	.66746	1.20165	.91831
36 to 45	Mean	4.0786	3.5894	3.9032	3.9178	3.4584	3.2985
	N	125	125	125	125	125	125
	Std. Deviation	.86260	.78252	.88466	.71599	.93622	1.03075
46 to 55	Mean	3.8531	3.4795	3.6491	3.8780	3.5706	3.4177
	N	59	59	59	59	59	59
	Std. Deviation	1.02046	.98139	.99320	.81365	.87005	.97999
56 and above	Mean	3.9479	3.5010	3.7403	3.6097	3.4767	3.3994
	N	50	50	50	50	50	50
	Std. Deviation	.88710	.85854	.91232	.87238	.86878	.85199
Total	Mean	4.0458	3.5373	3.8379	3.8629	3.4461	3.2846
	N	268	268	268	268	268	268
	Std. Deviation	.89545	.85779	.91215	.76989	.95085	.98584
P-value		*.039	.894	.195	.113	.504	.061

* Values < 0.05 are significant.

4.9.3 Effect of Type of Colleges and the Assertion of the Hypothesis H_{a3}

The next hypothesized question was: Were there significant differences in perceptions among faculty members with a different work place (art major college or science major college)?

The results in Table 4.17 show:

Art Major N= 115 (PU mean 4.0963, Std. Deviation .86258), (PEOU mean 3.4629, Std. Deviation .89183), (ATT mean 3.9181, Std. Deviation .91318), (CSE mean 3.8427, Std.

Deviation .78906), (USF mean 3.4262, Std. Deviation .94278), (TS mean 3.2984, Std. Deviation 1.03484)

Science Major N= 152 (PU mean 4.0145, Std. Deviation .91974), (PEOU mean 3.5948, Std. Deviation.83235), (ATT mean 3.7807, Std. Deviation .91195), (CSE mean 3.8860, Std. Deviation .75350), (USF mean 3.4640, Std. Deviation .96217), (TS mean 3.2760, Std. Deviation .95355)

This affirmed that there were no significant differences between art faculty and science faculty; both have positive perceptions of the research dimensions. This conclusion did not support H_{a3}; *Do instructors from different colleges have different attitude toward e-learning at KU?*

Table 4.17 – Mann-Whitney Test for difference between types of college

Mann- Whitney Test							
College		PU	PEOU	ATT	CSE	USF	TS
Art	Mean	4.0963	3.4629	3.9181	3.8427	3.4262	3.2984
	N	115	115	115	115	115	115
	Std. Deviation	.86258	.89183	.91318	.78906	.94278	1.03484
Science	Mean	4.0145	3.5948	3.7807	3.8860	3.4640	3.2760
	N	152	152	152	152	152	152
	Std. Deviation	.91974	.83235	.91195	.75350	.96217	.95355
Total	Mean	4.0458	3.5373	3.8379	3.8629	3.4461	3.2846
	N	268	268	268	268	268	268
	Std. Deviation	.89545	.85779	.91215	.76989	.95085	.98584
P-value		.526	.250	.188	.626	.997	.405

4.9.4 The effect of Academic Position and Assertion of the Hypothesis H_{a4}

The next hypothesized question was: Do instructors with different academic positions have different attitudes toward e-learning at KU?

The results in Table 4.18 show:

Assistant Professor N=156 (PU mean 4.1740, Std. Deviation .89612), (PEOU mean 3.5597, Std. Deviation .85004), (ATT mean 3.9250, Std. Deviation .91762), (CSE mean 3.9774, Std.

Deviation .73425), (USF mean 3.4155, Std. Deviation 1.00963) (TS mean 3.2519, Std. Deviation 1.05096),

Associate Professor N=81 (PU mean 3.8116, Std. Deviation .95168), (PEOU mean 3.4319, Std. Deviation .92129), (ATT mean 3.6367, Std. Deviation .97075), (CSE mean 3.7110, Std. Deviation .83224), (USF mean 3.4402, Std. Deviation.86171) (TS mean 3.3331, Std. Deviation .87243),

Full Professor N=29 (PU mean 4.0458, Std. Deviation .89545), (PEOU mean 3.5373, Std. Deviation .85779), (ATT mean 3.8379, Std. Deviation .91215), (CSE mean 3.8629, Std. Deviation .76989), (USF mean 3.4461, Std. Deviation .95085) (TS mean 3.4461, Std. Deviation .98584).

As indicated in Table 4.18, all three ranks (Full Professor, Associate Professor, and Assistant Professor) had a positive attitude towards research dimensions. However, no significant differences existed between their views on all dimensions, except for PU (p-value =0. 008) and CSE (p-value =0. 016). Here, both Full Professors and Assistant Professors had a more positive attitude than Associated Professors. Furthermore, Assistant and Associate Professor had a more positive perception of the role of CSE on e-learning than Full Professors, which partially supports H_{a4}; *Instructors with different academic positions have different attitudes toward e-learning at KU*.

Table 4.18 – Kruskal–Wallis Test for difference between Instructors Academic Position

Kruskal–Wallis Test							
Academic Position		PU	PEOU	ATT	CSE	USF	TS
Assistant prof	Mean	4.1740	3.5597	3.9250	3.9774	3.4155	3.2519
	N	156	156	156	156	156	156
	Std. Deviation	.89612	.85004	.91762	.73425	1.00963	1.05096
Associate prof	Mean	3.8116	3.4319	3.6367	3.7110	3.4402	3.3331
	N	81	81	81	81	81	81
	Std. Deviation	.95168	.92129	.97075	.83224	.86171	.87243
Full Prof	Mean	4.0132	3.7484	3.9317	3.6729	3.6567	3.3445
	N	29	29	29	29	29	29
	Std. Deviation	.60130	.64671	.64012	.71380	.70998	.94073
Total	Mean	4.0458	3.5373	3.8379	3.8629	3.4461	3.4461
	N	268	268	268	268	268	268
	Std. Deviation	.89545	.85779	.91215	.76989	.95085	.98584
P-value		.008*	.366	.131	.016*	.828	.907

* Values < 0.05 are significant.

4.9.5 Effect of Teaching Experience and Assertion of the Hypothesis H_{a5}

The next hypothesized question was: Do instructors with different levels of teaching experiences have different attitudes toward e-learning at KU?

The results in Table 4.19 show the total number of years in teaching,

1 to 5 years N=59 (PU mean 4.3461, Std. Deviation .73002), (PEOU mean 3.6096, Std. Deviation .80985), (ATT mean 4.1297, Std. Deviation .71632), (CSE mean 4.0174, Std.

Deviation .67520), (USF mean 3.3564, Std. Deviation 1.04046) (TS mean 3.0960, Std. Deviation 1.05604),

6 to 10 years N=78 (PU mean 3.9664, Std. Deviation 1.06679), (PEOU mean 3.3207, Std. Deviation .94694), (ATT mean 3.6579, Std. Deviation 1.06630), (CSE mean 3.9072, Std. Deviation .89147), (USF mean 3.4381, Std. Deviation 1.06102) (TS mean 3.1493, Std. Deviation 1.03442),

11 to 15 years N=52 (PU mean 3.9763, Std. Deviation .76828), (PEOU mean 3.6151, Std. Deviation .70492), (ATT mean 3.9219, Std. Deviation .86200), (CSE mean 3.8054, Std. Deviation .54606), (USF mean 3.2928, Std. Deviation .84133) (TS mean 3.4998, Std. Deviation .95988),

And, 16 years and above N=79 (PU mean 3.9456, Std. Deviation .86671), (PEOU mean 3.6462, Std. Deviation .86832), (ATT mean 3.7424, Std. Deviation .86457), (CSE mean 3.7415, Std. Deviation .82054), (USF mean 3.6218, Std. Deviation .81404) (TS mean 3.4173, Std. Deviation .86308).

As illustrated in Table 4.19, all levels of teaching experience were positive attitude towards research dimensions. Although there were no significant differences between the different levels of teaching experience, except for PU (p-value =0. 019)and TS (p-value = 0.031). Faculty in the 1-5 years category had a more positive attitude towards PU. On the other hand, faculty in the 11-15 years, as well as in the 16 and above categories had a more positive attitude and value TS more, which partially supports H_{a5}; *instructors with different teaching experiences have different attitudes toward e-learning at KU.*

Table 4.19 – Kruskal-Wallis test for difference between levels of teaching years

Kruskal–Wallis Test							
Total number of years in teaching		PU	PEOU	ATT	CSE	USF	TS
1 to 5	Mean	4.3461	3.6096	4.1297	4.0174	3.3564	3.0960
	N	59	59	59	59	59	59
	Std. Deviation	.73002	.80985	.71632	.67520	1.04046	1.05604
6 to 10	Mean	3.9664	3.3207	3.6579	3.9072	3.4381	3.1493
	N	78	78	78	78	78	78
	Std. Deviation	1.06679	.94694	1.06630	.89147	1.06102	1.03442
11 to 15	Mean	3.9763	3.6151	3.9219	3.8054	3.2928	3.4998
	N	52	52	52	52	52	52
	Std. Deviation	.76828	.70492	.86200	.54606	.84133	.95988
16 and above	Mean	3.9456	3.6462	3.7424	3.7415	3.6218	3.4173
	N	79	79	79	79	79	79
	Std. Deviation	.86671	.86832	.86457	.82054	.81404	.86308
Total	Mean	4.0458	3.5373	3.8379	3.8629	3.4461	3.2846
	N	268	268	268	268	268	268
	Std. Deviation	.89545	.85779	.91215	.76989	.95085	.98584
P-value		.019*	.118	.060	.096	.105	.031*

* Values < 0.05 are significant.

4.9.6 Effect of E-learning Usage and Assertion of the Hypothesis H_{a6}

The question posed was: Do instructors with different levels of use of the e-learning system have different attitudes toward e-learning at KU?

The results in Table 4.20 show three levels of use of the e-learning system at KU.

Use of e-learning in all of my courses N=84 (PU mean 4.4063, Std. Deviation .74401), (PEOU mean 3.8266, Std. Deviation .77956), (ATT mean 4.2139, Std. Deviation .79424), (CSE mean 3.9050, Std. Deviation .80148), (USF mean 3.5002, Std. Deviation .93761) (TS mean 3.5593, Std. Deviation .99141).

Use in some of my courses N=106 (PU mean 3.9663, Std. Deviation .69395), (PEOU mean 3.5721, Std. Deviation .72860), (ATT mean 3.7825, Std. Deviation .75956), (CSE mean 3.9318, Std. Deviation .61156), (USF mean 3.5297, Std. Deviation .86969) (TS mean 3.3300, Std. Deviation .93558).

None of my courses N=78 (PU mean 3.7656, Std. Deviation 1.13889), (PEOU mean 3.1785, Std. Deviation .97418), (ATT mean 3.5084, Std. Deviation 1.07234), (CSE mean 3.7239, Std. Deviation .90819), (USF mean 3.2742, Std. Deviation 1.05514) (TS mean 2.9270, Std. Deviation .94987).

As shown in Table 4.20, all levels of e-learning usage were positive toward the perceptions of research dimensions. Although no significant differences between different levels of e-learning usage were observed in perceptions of CSE and USF, there are significant differences between these different levels with respect to PU (p-value =0.000), PEOU (p-value = 0.000), ATT (p-value = 0.000) and TS (p-value = 0.000). As a general pattern, the more one uses e-learning, the more one values e-learning based on these dimensions, which supports H_{a6}; *Instructors with different levels of use of the e-learning system have different attitudes toward e-learning at KU*.

Table 4.20 – Kruskal-Wallis test for Difference between levels of e-learning usage

Kruskal–Wallis Test							
Level of use of the e-learning system at KU		PU	PEOU	ATT	CSE	USF	TS
All of my courses	Mean	4.4063	3.8266	4.2139	3.9050	3.5002	3.5593
	N	84	84	84	84	84	84
	Std. Deviation	.74401	.77956	.79424	.80148	.93761	.99141
Some of my courses	Mean	3.9663	3.5721	3.7825	3.9318	3.5297	3.3300
	N	106	106	106	106	106	106
	Std. Deviation	.69395	.72860	.75956	.61156	.86969	.93558
None of my courses	Mean	3.7656	3.1785	3.5084	3.7239	3.2742	2.9270
	N	78	78	78	78	78	78
	Std. Deviation	1.13889	.97418	1.07234	.90819	1.05514	.94987
Total	Mean	4.0458	3.5373	3.8379	3.8629	3.4461	3.2846
	N	268	268	268	268	268	268
	Std. Deviation	.89545	.85779	.91215	.76989	.95085	.98584
P-value		.000*	.000*	.000*	.201	.212	.000*

* Values < 0.05 are significant.

4.9.7 Effect of Professional Development Assertion of the Hypothesis H_{a7}

The next question was: Do instructors who attended professional development sessions on e-learning system (attended and not attended) have different attitudes toward e-learning at KU?

The results in Table 4.21 shows

The instructors that attended N= 117 (PU mean 4.0641, Std. Deviation .82951), (PEOU mean 3.5359, Std. Deviation .85100), (ATT mean 3.8232, Std. Deviation .88814), (CSE mean 3.8441, Std. Deviation .82164), (USF mean 3.5666, Std. Deviation .92446), (TS mean 3.2845, Std. Deviation .99086)

And, instructors that have not attended N= 150 (PU mean 4.0340, Std. Deviation .94861), (PEOU mean 3.5443, Std. Deviation.86577), (ATT mean 3.8527, Std. Deviation .93526), (CSE mean 3.8766, Std. Deviation .73210), (USF mean 3.3525, Std. Deviation .96672), (TS mean 3.2865, Std. Deviation .98826).

As presented in Table 4.21, although all perceptions are positive, no significant differences between respondents who attended and who did not attend courses in e-learning are noticed, which does not support H_{a7}; *instructors who attended professional development sessions on e-learning system (attended and not attended) have different attitudes toward e-learning at KU*.

Table 4.21 – Mann-Whitney test for effect of professional training

Mann Whitney Test							
Professional development sessions on e-learning system at KU		PU	PEOU	ATT	CSE	USF	TS
Yes	Mean	4.0641	3.5359	3.8232	3.8441	3.5666	3.2845
	N	117	117	117	117	117	117
	Std. Deviation	.82951	.85100	.88814	.82164	.92446	.99086
No	Mean	4.0340	3.5443	3.8527	3.8766	3.3525	3.2865
	N	150	150	150	150	150	150
	Std. Deviation	.94861	.86577	.93526	.73210	.96672	.98826
Total	Mean	4.0458	3.5373	3.8379	3.8629	3.4461	3.2846
	N	268	268	268	268	268	268
	Std. Deviation	.89545	.85779	.91215	.76989	.95085	.98584
P-value		.945	.867	.703	.869	.162	.688

4.9.8 Effect of E-learning System in Use and Assertion of the Hypothesis H_{a8}

The next question was: Do instructors with a different selection of e-learning system to use have different attitudes toward e-learning at KU?

The results in Table 4.22 show

Instructors that use KU's official e-learning system, Blackboard N= 125 (PU mean 4.1878, Std. Deviation .85528), (PEOU mean 3.5815, Std. Deviation .84271), (ATT mean 3.8825, Std. Deviation .89302), (CSE mean 3.9414, Std. Deviation .72321), (USF mean 3.5194, Std. Deviation .86136) (TS mean 3.2771, Std. Deviation .93880),

And, instructors who use other e-learning systems N=135 (PU mean 3.9270, Std. Deviation .92746), (PEOU mean 3.5209, Std. Deviation .86148), (ATT mean 3.7945, Std. Deviation .94405), (CSE mean. 3.8017, Std. Deviation .81463), (USF mean 3.3765, Std. Deviation 1.01557) (TS mean 3.2985, Std. Deviation 1.04800),

As illustrated in Table 4.22, both, instructors using Blackboard, and those using other systems, have a positive attitude towards research dimensions. Hence, there are no significant differences between instructors using the Blackboard e-learning system and instructors using other systems, except for PU (p-value =0.015). Although both instructor groups have a positive attitude toward PU, instructors using Blackboard are more positive than the others, which partially supports H_{a8}; *Instructors with different selection of e-learning system have different attitudes toward e-learning at KU*.

Table 4.22 – Mann-Whitney test for difference between e-learning System Selection

Mann Whitney Test For E-learning in use at KU							
What e-learning system have you used at KU?		PU	PEOU	ATT	CSE	USF	TS
Blackboard	Mean	4.1878	3.5815	3.8825	3.9414	3.5194	3.2771
	N	125	125	125	125	125	125
	Std. Deviation	.85528	.84271	.89302	.72321	.86136	.93880
Other Systems	Mean	3.9270	3.5209	3.7945	3.8017	3.3765	3.2985
	N	135	135	135	135	135	135
	Std. Deviation	.92746	.86148	.94405	.81463	1.01557	1.04800
Total	Mean	4.0458	3.5373	3.8379	3.8629	3.4461	3.2846
	N	268	268	268	268	268	268
	Std. Deviation	.89545	.85779	.91215	.76989	.95085	.98584
P-value		.015*	.609	.392	.196	.335	.670

* Values < 0.05 are significant.

In the following section, a discussion of the causal effect of the exogenous variables CSE, USF, and TS on the ATT via the mediation of the two beliefs PU and PEOU, are discussed.

4.10 Causal Effect between Research Variables

The following subsections present three tables that show the significance of all encountered hypotheses and signify the existence of different effects on research variables and, eventually, on the outcome variable (Attitude). The tables illustrate all possible paths of the direct effects (Table 4.23), the indirect effects (Table 4.24), and the total effects (Table 4.25) to each outcome, including the path coefficient, standard error, t-Value, p-Value, Significant, and the hypothesis associated with them.

4.10.1 Direct Effect and the Assertion of the Associated Hypotheses

As illustrated in Table 4.23 and Figure 4.14, a weak positive significant direct effect (37%, p = 0.000) of CSE on PU is noted, which confirms the hypothesis, H_{b1}. It is also evident that CSE has a weak positive and significant effect on PEOU (29%, p-value =0. 000), which justifies H_{b2}. Following the same argument, there is a weak positive and significant effect of CSE on the ATT towards the use of e-learning (11%, p-value = 0.008), which confirms H_{b3}. The analysis also indicates that the negative and weak direct effect of the University Strategy Focus (USF) on PU (-7%, p-value =0. 149), which does not support the hypothesis, H_{b4}. On the contrary, there is a weak and positive direct effect of USF on the PEOU (28%, p-value =0. 000), which supports H_{b5} , whereas the effect on ATT towards e-learning (1%, p-value 0.456) does not prove the hypothesis H_{b6}. The direct effect of the TS of PU (23%, p-value=0. 000) supports H_{b7}, while PEOU (16%, p-value=0.012) validates H_{b8}. Finally, the ATT (11%, p-value =0. 009) supports H_{b9}. Meanwhile, the analysis reflects the direct effect among the endogenous variables themselves. For example, there is a positive and strong direct effect of PU on ATT (64%, p-value =0.000). While, there is a positive and a weak direct effect of PEOU on ATT (20%, p-value=0.000), and, similarly, a positive direct effect of PEOU on PU (37%, p-value=0.000).

Table 4.23 – Path Analysis and the assertion of the proposed hypothesis for direct causal effect between research model constructs

Paths	Path Coefficient	Standard error	T-Value	P-value	Supporting or not	Hypothesis
Computer Self Efficacy →Perceived usefulness	0.37	0.06	6.06	0.000*	S	H_{b1}
Computer Self Efficacy → Perceived Ease of Use	0.29	0.07	4.39	0.000*	S	H_{b2}
Computer Self Efficacy → Attitude	0.11	0.05	2.42	0.008*	S	H_{b3}
University Strategy Focus→Perceived usefulness	-0.07	0.07	-1.04	0.149	NS	H_{b4}
University Strategy Focus→Perceived Ease of Use	0.28	0.08	3.64	0.000*	S	H_{b5}
University Strategy Focus→Attitude	0.01	0.05	0.11	0.456	NS	H_{b6}
Technical Support →Perceived usefulness	0.23	0.06	3.67	0.000*	S	H_{b7}
Technical Support →Perceived Ease of Use	0.16	0.07	2.25	0.012*	S	H_{b8}
Technical Support →Attitude	0.11	0.04	2.37	0.009*	S	H_{b9}
Perceived usefulness → Attitude	0.64	0.05	13.29	0.000	S	
Perceived Ease of Use → Attitude	0.20	0.05	4.27	0.000	S	
Perceived Ease of Use → Perceived usefulness	0.37	0.06	5.99	0.000	S	

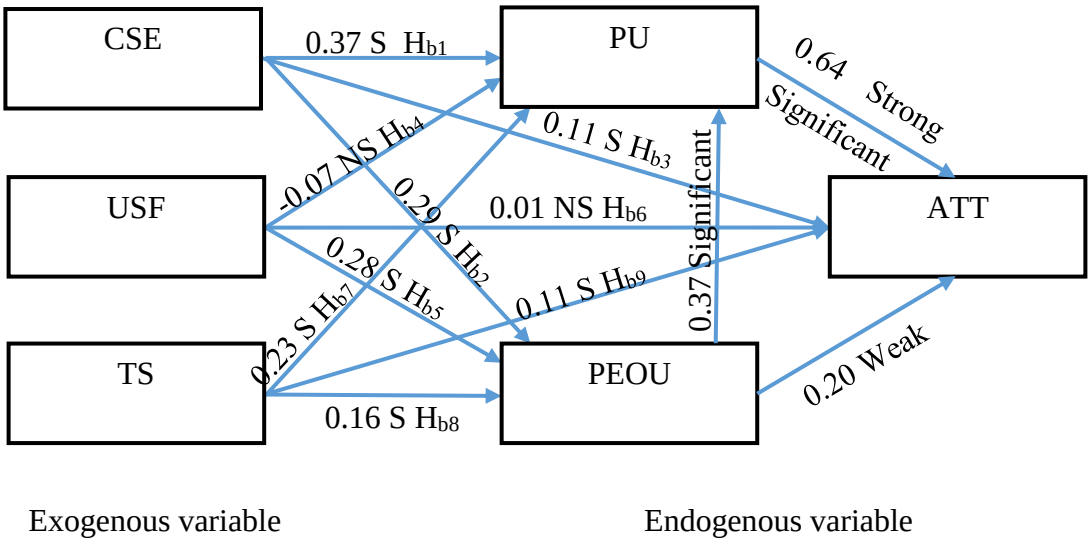

Figure 4.15 – Path analysis of direct effect among model constructs

4.10.2 Indirect Effect and the Assertion of the Associated Hypotheses

In Table 4.24 and Figure 4.15, it shows that CSE has an insignificant indirect effect on PU (11%, p-value= 0.245), which does not support H_{c1} of the study. On the contrary, it has a significant positive effect on ATT (36%, p-value=0. 000) that supports H_{c2}. The USF has a significant positive effect on PU (10%, p-value =0.001), which consolidate this study's assertion of H_{c3}, whereas it has an insignificant effect on ATT (7%, p-value =0. 087), and fails to consolidate the claim in H_{c4}. Finally, TS has a significant positive indirect effect on PU (6%, p-value= 0.016) and proves this study's hypothesis, H_{c5}. It also has a significant positive effect on ATT (21%, p-value = 0.000), which supports H_{c6}.

Table 4.24 – Path Analysis and the Assertion of the Proposed Hypothesis for Indirect Effect of Exogenous On Endogenous Variables

Paths	Path Coefficient	Standard error	T-Value	P-value	Supporting or not	Hypothesis
Computer Self Efficacy → Perceived Usefulness	0.11	0.03	0.69	0.245	NS	H_{c1}
Computer Self Efficacy → Attitude	0.36	0.05	7.07	0.000*	S	H_{c2}
University Strategy Focus→ Perceived Usefulness	0.10	0.03	3.07	0.001*	S	H_{c3}
University Strategy Focus → Attitude	0.07	0.05	1.36	0.087	NS	H_{c4}
Technical Support → Perceived usefulness	0.06	0.03	2.14	0.016*	S	H_{c5}
Technical Support → Attitude	0.21	0.05	4.21	0.000*	S	H_{c6}

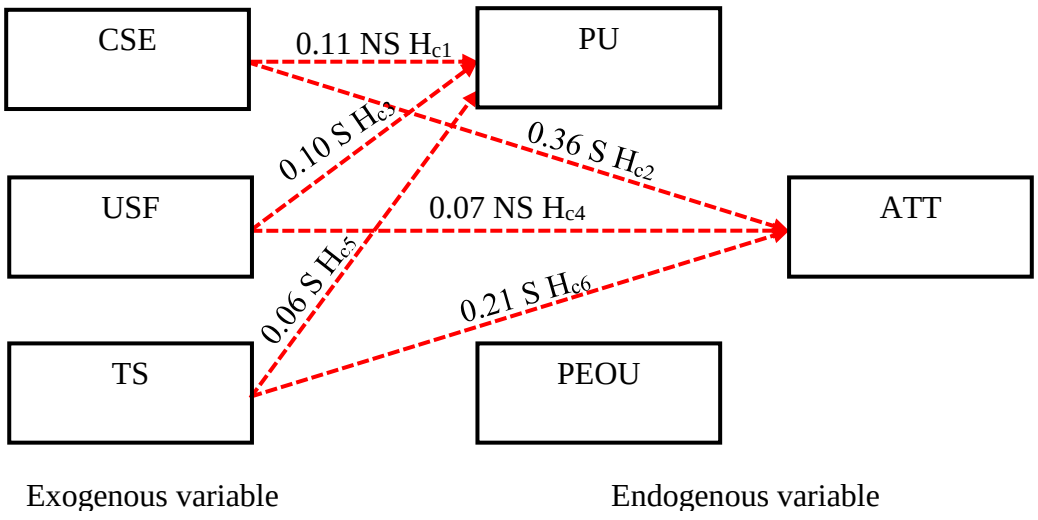

Figure 4.16 – Path analysis of indirect effect among model constructs

4.10.3 Total Effect and the Assertion of the Associated Hypotheses

Table 4.25 and Figure 4.16 show that CSE has a significant positive total effect on PU (48%, p-value =0.000), which validates the assertion H_{d1}. It has a significant positive effect on PEOU (29%, p-value =0. 000) that supports H_{d2} and has a significant positive total effect on ATT (47%, p-value 0.000), thereby confirming $H_{d3.}$

The USF has an insignificant effect on PU (3%, p-value 0.334), which does not support the claim of H_{d4} . It has a significant positive total effect on PEOU (28%, p-value = 0.000), which approves H_{d5} , and an insignificant total effect on ATT (8%, p-value = 0.129), which fails to support H_{d6} .

TS has a significant positive total effect on PU (29%, p-value=0.000) that supports H_{d7} , as well as on PEOU (16%, p-value =0. 012), which supports H_{d8} . It also has a significant positive total effect on ATT (32%, p-vale =0. 000), which proves H_{d9} .

Among the endogenous variables, PU has a significant positive total effect on ATT (64%, p-value =0.000), which supports H_{d10}. PEOU has a significant positive total effect on PU (37%, p-value =0.000), which supports H_{d11}. Finally, PEOU has a significant positive total effect on ATT (43%, p-value =0.000), which demonstrates H_{d12} .

Table 4.25 – Path Analysis and the Assertion of the Proposed Hypothesis for Total Effects of Exogenous On Endogenous Variables

Paths	Path Coefficient	Standard error	T-Value	P-value	Supporting or not	Hypothesis
Computer Self Efficacy →Perceived usefulness	0.48	0.06	7.46	0.000	S	H_{d1}
Computer Self Efficacy→ Perceived Ease of Use	0.29	0.07	4.39	0.000	S	H_{d2}
Computer Self Efficacy →Attitude	0.47	0.06	7.55	0.000	S	H_{d3}
University Strategy Focus →Perceived usefulness	0.03	0.07	0.43	0.334	NS	H_{d4}
University Strategy Focus→ Perceived Ease of Use	0.28	0.08	3.64	0.000	S	H_{d5}
University Strategy Focus → Attitude	0.08	0.07	1.13	0.129	NS	H_{d6}
Technical Support →Perceived usefulness	0.29	0.07	4.29	0.000	S	H_{d7}
Technical Support →Perceived Ease of Use	0.16	0.07	2.25	0.012	S	H_{d8}
Technical Support →Attitude	0.32	0.07	4.86	0.000	S	H_{d9}
Perceived Usefulness →Attitude	0.64	0.05	13.29	0.000	S	H_{d10}
Perceived Ease of Use→Perceived Usefulness	0.37	0.06	5.99	0.000	S	H_{d11}
Perceived Ease of Use→Attitude	0.43	0.06	7.36	0.000	S	H_{d12}

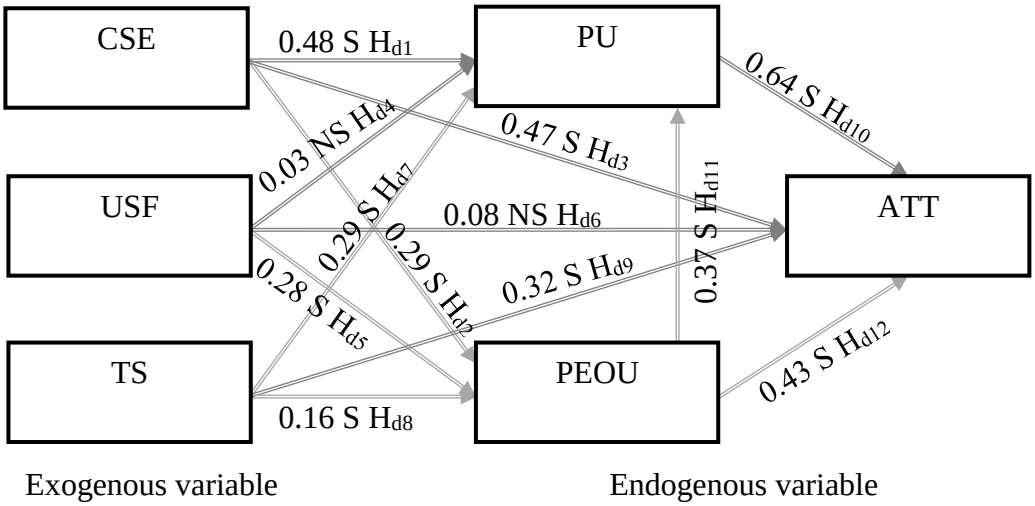

Figure 4.17 – Path Analysis of Total Effect among Model Constructs

The causal relationship, explained by the path analysis, will constitute a starting point for the discussion of findings in the next chapter, with the full implications of the data analysis used to develop the recommendations thereafter.

Next, in Part C of this chapter, the qualitative data analysis will be discussed and will add an overall understanding of quantitative analysis outcomes.

Part C: Qualitative Data Analysis

In order to develop a comprehensive understanding of the core research questions, a series of qualitative data collection methods were applied – including semi-structured interviews, un-structured interviews, and focus groups. The interview-based surveys have been conducted to support the research outcomes, with a qualitative data analysis based on coding process and themes. The following sections will outline the data generated.

4.11 Semi-Structured Interviews

The researcher conducted individual interviews with 12 individuals from KU Assistant Deans and Heads of Departments. The interviewees were given nine open-ended questions to answer on non-compulsory basis. The answers were collected, coded into themes, and then analysed. The purpose behind the interviews was to understand the position of key KU administrative staff on e-learning implementation, and to draw conclusions to add to the outcomes from the quantitative analysis of the survey with the instructors. As discussed in Chapter 3, from a theoretical perspective, the sequential approach suggested by Creswell (2003), regarding mixed method research, has been adopted to support the study objective.

The interviews were recorded and the data were entered in a Microsoft Excel spreadsheet (see a sample Figure 4.18) and individual responses were coded and analysed (see Appendix A3 for full records), to generate a list of themes (see Table 4.26).

Qualitative Data Analysis - Semi-Structured Interviews Appendix - A3

Interviewee: **Chair of Department of English Administration, Kuwait University**

Interview Questions	Response	Code	Theme
What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	Because the option to use the e-learning is left to the instructor, the usage of the system is low. So I think **"Kuwait University need to make this usage compulsory in order to increase system utilization".**	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	No		
What is Kuwait University strategic policy on the introduction of eLearning?	I don't think there is a clear strategic policy and if they have it an issue of completing KU image as promotor of new technology such as e-learning.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
What Kuwait University can do to encourage more e-learning participation from instructors?	Kuwait University must provide incentives promotional and give financial incentive for using e-learning	Reward	Theme 3: Reward system
5. Please list any factors that would motivate your instructors to participate in e-learning	providing training and workshops to motivate the instructors to use the system.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	1- The age, the older, less use the system from the youth one. 2- The subject it is not taught in electronic way.	Age	Theme 5: Instructor age
		Subject	Theme 9: Attitude toward e-learning

Figure 4.18 – Sample of Analysis of Semi-Structure Interview Response

Table 4.26 – Qualitative Analysis Themes

Theme	Description
Theme 1	KU Strategy and the Applied E-learning Policy
Theme 2	Awareness sessions, workshops and training on e-learning
Theme 3	Implement a reward system
Theme 4	Technical Support for e-learning system
Theme 5	Instructor age as a factor
Theme 6	E-learning system design
Theme 7	Instructor workload
Theme 8	Instructor's Technology readiness
Theme 9	Attitude toward e-learning

In the subsections to come, individual themes are discussed.

Theme 1: KU Strategy and the Applied E-learning Policy

KU, as a higher educational organization, built its strategy on e-learning to achieve its pre-determined goals. How this strategy is viewed and communicated, participants' responses on KU strategy, as well as its policy, have been collected, analysed and illustrated below.

KU has identified the Centre for Distance Learning (CDL) as the entity that rolls out the university's policy on e-learning. KU's current policy regarding the use of the e-learning system is that it is an optional choice left to instructors to take. However, 33% of the interviewees have expressed their opinion that it might be better to have a compulsory enforcement of the e-learning system as a means to result in more utilization of the system,

"Because the option to use the e-learning is left to the instructor, the usage of the system is low. So I think KU need to make this usage compulsory in order to increase system utilization".

"KU high administration should enforce e-learning as a mandatory mean of teaching.",

"The e-learning system must be compulsory",

"They have to force the instructors to use it".

KU's policy on e-learning was covered in a separate question (Q3); 92% of the interviewees revealed that, apparently, no clear strategic policy on the use of e-learning existed or was communicated to KU faculty,

"I don't think there is a clear strategic policy and if they have, it is an issue of completing KU image as a promoter of new technology such as e-learning."

Although the Dean of Computer Science Department conveyed a positive attitude toward the use of e-learning by the instructors in his department, he also expressed a similar position on KU policy on e-learning.

"I don't think there is a clear strategic policy on the introduction of e-learning by KU. At least, I don't know if they do have one".

Interestingly, this is even shared by the Supervisor at CDL,

"There is no clear policy for e-learning"

Some interviewees called for the promotion of such a policy and outlined what it should contain

"KU strategic policy should be to expand implementation of e-learning, encourage instructors to use it, create labs and provide suitable new equipment".

"For new instructors, the Dean or the head of the department must tell them about the importance of the e-learning."

In general, the lack of a clear policy may have affected the environment surrounding the system within KU, as expressed by one of the interviewees,

> *"The environment at KU is not qualified to use such system"*

<u>Theme 2</u>: Awareness sessions, workshops and training on e-learning

Although organizing awareness sessions and workshops and conducting necessary training are part of the implementation plan, and should be covered clearly in the e-learning policy, these activities are considered under a separate theme. Conducting awareness campaigns and workshops about the e-learning system, and how such technology potentially contributes in improving the educational process, is considered to be a crucial part of the initial implementation work of e-learning systems in any organisation. They should also run on a continuous basis, at least for newcomers or as refreshment sessions to maintain focus within the target population in the organization. Almost all interviewees stressed the requirement of e-learning awareness and training as part of the KU role to encourage instructors' participation in e-learning. A variety of modes were suggested, some through the usage of media and social media, and others by conducting awareness workshops, seminars and conferences, and the suggestion to use them as venues to stress the benefits and advantages of the system. For example, the chairperson of the Department of Health Information Administration said,

> *"they need … Publicity and Marketing for the e-learning concept through different Media such as Websites, TV, Instagram, etc., .. Give workshops to introduce e-learning to instructors,.. The Centre for Distance Learning (CDL) needs to visit each college on a regular basis and provide them with workshops, seminars, lectures, etc. regarding e-learning,.. The benefits and advantages of using e-learning must be stressed by the KU administration".*

The Dean of the Engineering Department extended the awareness to both instructors and students,

".. KU should promote e-learning system in social media for instructors and students to use it", and he stressed that his department is doing so, and that other KU colleges should adopt the same. Another interviewee, the head of Computer Science Department, even specified that (CDL) staff should be responsible for conducting the awareness campaign. Some of the interviewees expressed the need to share experiences on the use of e-learning among instructors,

> *"Use the Instructors who currently use e-learning to share their experience with non-users"*,
>
> *".. In our department, we share experience among instructors and often conduct workshops to increase awareness.."*.

Although the venue for such an exchange is not specified, awareness sessions are always considered as points to exchange views and experiences of system users. The need for training on e-learning, at an early stage of the implementation process, is stressed by several interviewees; one suggested it to be on a non-compulsory basis, to reduce resistance to the system,

> *".. KU should conduct training courses on e-learning for instructors to attend on non-compulsory basis"*

Others expressed the view that training was a means to cope with new technology and to be conducted by CDL.

> *"KU should encourage instructors to use the e-learning by giving them the right training at the beginning. CDL should do the training and conduct workshops and conferences regarding the latest e-learning technology.."*

Another interviewee indicated training is seen as an optional choice for the instructors,

"It's not very clear, we have some e-learning classes, but I think it depends on the instructor if he likes to take part in it."

Some interviewees responded to the question on motivating factors (Q5), that training on the system will make it easier to handle,

"Easiness of using the e-learning technology will motivate the instructors to use the system. The easier the system to use, more instructors will be willing to use it.", also

"Provide the workshop that explains to the instructors how to use the system. The easier the system to use, more instructors will be willing to use it."

<u>Theme 3</u>: Implement a reward system

"Instructors participating in e-learning should be rewarded", was an argument that was pointed out by several interviewees. As mentioned earlier, instructors' usage of the e-learning system in teaching is considered optional by the KU administration. This reality appears to be responsible for some of the instructors' mind-set that such participation is considered an extra effort that should be rewarded. Such notions are indicated in several answers by heads of departments. An award system of some kind was seen to be necessary by almost all the interviewees to encourage participation in e-learning,

"Use a reward system for Instructors who are currently using the e-learning system"

Others expressed it as part of the career improvement,

"KU to provide a mechanism for an academic incentive when e-learning is used by the instructors",

".. to be included among the evaluation criteria for career promotion".

Others expressed it as a means of recognition of the instructor,

"It is important that instructors should be recognized for their contribution in e-learning culture within the department"

Others expressed it as a recognition of the department that promotes e-learning,

"KU should recognize the departments at the KU level for their use of e-learning."

The requirement of an award system was included in a separate question (Q8). Most of the interviewees reacted positively to the need to have such a system in KU. Some expressed it as mean to create a competitive environment,

"I think they should have such a system. A Reward system always provides a competitive environment among Instructors and encourage them to use e-learning",

They justified the usage of the e-learning system as extra work that required more time and effort to prepare than usual,

"Teaching by using technology takes lots of time of preparation and effort, therefore, having a reward system would really be appreciated".

Some interviewees even expressed the reward frequency, *"KU should throw a yearly reward for best use of e-learning"* or set the awarding criteria as, *"Our department rewards the instructor that has all his courses online and we put his name in our department as the best of our faculty"* and *"A reward for the best user for system"*.

Meanwhile, a supervisor in the Centre for Distance Learning (CDL) was against having a separate reward system that distinguishes the instructors just for using the e-learning system. When answering Q5, he stated that *"No, they shouldn't be awarded, the e-learning system should be part of the learning process"*, but rather suggested *"KU to provide a mechanism for an academic incentive when e-learning is used by the instructors"* and be part of their career evaluation criteria. It was interesting to see the same person stating that *"the*

instructors don't see the e-learning, supporting the learning process therefore, they do not consider it important" and *"there is no clear policy for e-learning",* while CDL is the responsible entity tasked with rolling out policy and bringing instructors more closer to recognize the importance of e-learning to the learning process.

In response to question 5, on the motivation factors on e-learning, 33% of interviewees were of the opinion that a reward system of some kind would motivate and encourage greater use of the e-learning system in teaching.

<u>Theme 4</u>: Technical Support for e-learning system

The level of technical support for the e-learning system is a prominent element of interviewees' answers. Some interviewees saw it as a key element of preparing the learning material in e-learning content as a means to encourage more use of the system,

"..to facilitate learning material into e-learning content.." or to develop more specialized staff to handle the system requirements, *"..and increase e-learning specialized staff."*

Some identified the IT Department as the entity to handle the function,

> *"KU IT department should support the system more effectively, otherwise it would be difficult for the instructor to cope with it"*
>
> *".. In each college, they have to be one or two technical staff in the e-learning system (know how it works, how to use it, and must have an account as an administrator to help college instructors) to encourage them."*

Responding to question five, on the motivating factors for e-learning participation, 33% of the interviewees expressed the requirement of proper technical support in the form of a help desk,

> *"Providing Hotline for help, to help the users with immediate instructions, maintenance, and troubleshooting… provide qualified e-learning technicians"*

When identifying inhibiting factors (Q6), the lack of technical help, when needed, was seen as one of the possible inhibitors,

> *"No Helpline for the instructors at their convenient timing. Maybe the Helpline is available but not after working hours."*

The rigidity and lack of choice in the system's infrastructure was also highlighted by some of the interviewees,

> *"I think KU should support any type of e-learning systems available. For example, the KU are forcing the use of a blackboard system. However, because all faculties are using it through one server which cause the server to be slow and always busy. The KU should provide each college with their own server supported with Blackboard to relieve the congestion of using the Central server"*

> *"The KU must upgrade their system and makes a plan to avail all the factors that lead to the success of the system"*

<u>Theme 5</u>: Instructor age as a factor

The association of instructor age and lack of e-learning utilization was expressed in interviewees' answers to question two. One expressed it as,

> *".. there are a considerable number of instructors with high number of years on the job and too old to feel enthusiastic toward implementing such technological initiative and consider it as complicated."*

And, in response to question six, on the inhibiting factors, one expressed,

> *"The age, the older the instructor, the less his/her use of the system compared to the younger one."*

With another expressing,

> *"I think the age of the instructor is a main issue, The instructors over 50 usually like their traditional way of teaching rather than the using e-learning and they see it difficult to use or to learn."*

Theme 6: E-learning system design

The system design plays an important role in how the system is viewed by the users. This opinion was expressed by several interviewees in their answers to the questions. For example, 50% of interviewees highlighted the importance of the system's ease of use, as part of the motivation factors (Question 5) or to promote more utilization of the e-learning system, through the improvement of the system user interface and system features,

> *"Easiness of using the e-learning technology will motivate the instructors to use the system. The easier the system to use, the more instructors will be willing to use it"*, or
>
> *"Interface attraction, feature attraction, and a technical team in in all the colleges that work only for e-learning system."*

While in an equal percentage of instructors' responses to question six, system complexity was expressed among the inhibiting factors preventing instructors from using the e-learning, especially when it was associated with older instructors,

> *"Complexity of the e-learning system will push instructor away from using the technology"*,
>
> *"The instructors have no ability to use the backboard in their teaching because they have difficulty in dealing with such system"*

Alternatively, when it is related to confidentiality or privacy of data,

> *"The fear of putting their teaching material such as lectures, slides, etc…., they are afraid that their material will be abused by other users. There is no privacy."*

Theme 7: Instructor workload

The workload was an issue highlighted by the interviewees as an impediment to instructors' participation in e-learning, especially when they considered the use of the system as being

extra work added to their duties. Several interviewees expressed it as an issue that needed to be dealt with before they can take up the use of the system,

> *"Yes, because of the workload. I need more time to focus on the online courses and to activate them, they take effort and extra time."*

Other expressed workload as an inhibitor of use,

> *"Instructor's High Teaching Load which makes him very stressed teaching than being creative in teaching style. He will be worried about his teaching load and not on the quality of teaching."*

<u>Theme 8</u>: Instructor's Technology readiness

Some interviewees consider instructor readiness to accept new technology or his/her ability to handle new technological tools, as an issue affecting the use of e-learning.

> *"Not having Technical knowledge on how to use e-learning and afraid of being recognized that they don't know about technology",*

> *"Some of the instructors don't have computer skills"*

In the following section, on unstructured interviews, a similar analysis applies to the interviews conducted with the instructors.

4.12 Unstructured Interviews

The unstructured interviews were conducted with the instructors at a later stage to the semi-structured interviews. It was found necessary to obtain instructors' impulsive opinions, which emerged once exposed to the research survey and the subject in question - 'e-learning at Kuwait University', and 'what do you think about e-learning system at Kuwait University?'.

A total of 24 interview responses were recorded by handwriting, and then filled into a Microsoft Excel spreadsheet, where the response number, gender, number of years teaching, and the question, formed column headings, while the interviewees' answers formed the rows

(see a sample, Figure 4.19). The answers were analysed to obtain extracts to form additional themes to the ones identified in the semi-structured interviews (see Appendix A4 for full records).

Quantitative Data Analysis - Unstructured Interviews

No.	Gender	Years of experience	College	Question: What do you think about e-learning system at Kuwait University?	Code	Theme
1	Female	3-5 yrs.	Art	I use e-learning in all my classes. I have no difficulty using it due to my previous experience during my PHD study in USA. I encourage the use of e-learning (Blackboard) system and find it supporting my work. Some of the students face difficulty using the system, however there is a general acceptance among them, may be because my subject is English Language.	attitude	Theme 9: Attitude toward e-learning
2	Female	6-10 Yrs.	Art	I use Moodle e-learning system rather than blackboard, because I find it more suitable for the material and easy to use, and I do not have to call IT to upload the material or students' names. IT do not answer my calls which makes it difficult to deal with them. I encourage using e-learning but I wish the Blackboard be more flexible to use.	TS	Theme 9: Attitude toward e-learning
3	male	5 -10 yrs.	Art	I have experience using e-learning from USA and I think we should deal with the system, however I have a problem with the students. They have no experience with e-learning and the subject being 'History', it does not motivate the use of e-learning. I use Blackboard system to help me with the material and for my use only, however I would like Kuwait University to make the use of e-learning mandatory.	Policy	Theme 9: Attitude toward e-learning
4	male	5 - 10 yrs.	Art	I use Blackboard e-learning system to prepare my material only. I find the student face difficulty using it due to their limited experience with the technology which narrowed their use. I wish Kuwait University enforce the use of e-learning on both instructors and students.	Policy	Theme 9: Attitude toward e-learning
5	Male	25 - 30 yrs.	Art	I do not see e-learning effective in Art subjects because they depends on books and instructor explanation. I believe the use of e-learning in my subject would make it difficult and un-beneficial to both the instructor and the student.	design	Theme 6: E-learning system design

Figure 4.19 – Unstructured Interviews Response Analysis

Accordingly, the outcome of the interviews analysis has contributed further to the earlier formulated themes (Theme 1 and 4), and added Theme 9, as explained below.

Theme 1: KU Strategy and Applied Policy on e-learning

KU's policy on e-learning has its place in instructors' opinion. 25% of the interviewees confirmed what was earlier stated - that the optional use of e-learning might have contributed in limiting instructors' participation. For example,

> *".. I use the Blackboard system to help me with the material and for my use only, however I would like KU to make the use of e-learning mandatory.",*
>
> *".. I wish KU enforce the use of e-learning on both instructors and students.",*
>
> *".. e-learning is suitable for my work and makes it easier. However, since KU does not mandate the use of e-learning in teaching, I use it for preparing the material only and not in teaching…",*
>
> *"I believe the use of the system should be mandatory."*

Theme 4: Technical support of e-learning at KU

In general, 33% of the interviewees have focused their opinions on IT technical support as the influencing factor that shapes their positions toward KU e-learning system. Although 25% of the interviewees have selected Blackboard, the official e-learning system at KU, they have experienced some kind of difficulty in handling it due to difficulty in communicating with IT support staff or because of network problems. For example,

> *".. I find dealing with IT difficult and hard to communicate with them…",*
>
> *".. I use Blackboard. However, sometimes I find difficulty using it due to lack of system maintenance and network problems…"*

Other interviewees found the selection of other system a better option to eliminate dependency on IT,

"I use Moodle e-learning system rather than blackboard, because I find it more suitable for the material and easy to use, and I do not have to call IT to upload the material or students' names. IT does not answer my calls which makes it difficult to deal with them."

However, some found the IT support sufficient,

".. Sometimes the network goes down, which affect the use of the system, however I find IT response to my calls adequate.."

In summary, 42% of the participants, in their responses, expressed their thoughts on IT support to the e-learning system at KU, and it was mostly negative, which requires further review by the university.

<u>Theme 9</u>: Attitude toward e-learning

Most of the interviewees expressed a positive attitude toward the use of the e-learning system, despite the variety of types of system used, Blackboard, the official e-learning system at KU, or other systems,

"I use e-learning in all my classes..",

"I use Moodle e-learning system rather than blackboard,….",

"I use Blackboard e-learning system to prepare my material only.."

In some interviewees' responses, such an attitude was associated with previous experience with the system,

"I have no difficulty using it due to my previous experience during my PhD study in USA…",

"I have experience using e-learning from USA", or "I support the use of e-learning and the Blackboard system. I used it in the USA during my PhD study, and found it easy to use".

Often, such attitudes were found in young instructors who joined KU within the last 10 years. However, other interviewees expressed difficulty in utilizing e-learning due to the KU students' readiness to the technology,

> *".. I think we should deal with the system, however I have a problem with the students. They have no experience with e-learning..",*
>
> *".. I find the student face difficulty using it due to their limited experience with the technology which narrowed their use..",*
>
> *"and the level of the students enrolled in KU which limit the use of e-learning."*

Meanwhile, the subject of teaching was expressed as another reason limiting the use of e-learning,

> *"..and the subject being 'History', it does not motivate the use of e-learning..",*
>
> *"I do not see e-learning effective in Art subjects because they depends on books and instructor's explanation. I believe the use of e-learning in my subject would make it difficult and un-beneficial to both the instructor and the student.".*
>
> *"I think e-learning does not serve the learning material (Law), and it is hard to convert it to electronic material."*

It is worth mentioning here that, in the opinion of some interviewees, attitudes toward e-learning are associated with its contribution to the teaching work,

> *".. I encourage the use of e-learning (Blackboard) system and find it supporting my work..",*
>
> *"... I think using e-learning is suitable for my work and makes it easier..",*

Or to benefit the student,

> *"... The students use system and it helps them with the learning material..", and ".. I find the students very cooperative and benefitting from the learning material on the system.",*

".. My students use it and they find no difficulty using it. I communicate with them over the system.".

In summary, positive attitudes were associated with using any e-learning system, either, for instructors' self-organization of work or when it contributed to the learning process and effected students learning. In addition, a positive attitude was expressed because of previous experience during PhD study, which was associated with young instructors. Meanwhile, a negative attitude toward e-learning was expressed in relation to students' lack of readiness to use the technology or to the teaching subject and the incompatibility of the material to e-learning technology or the insufficient level of IT to support the Blackboard e-learning system. A change in KU policy to mandate the use of the e-learning system by all instructors and students, was expressed as a means to increase the use of e-learning systems at KU.

4.13 Focus Groups

Two focus group sessions were conducted. The first session contained eight instructors who often use the e-learning system in their teaching process, and the second one contained five instructors who do not use e-learning. The objective behind conducting the focus group discussions is to confront groups of KU instructors with some of quantitative analysis findings and record their responses to it. This approach completed the triangulation approach of studying KU instructors' perspectives toward e-learning. Open-ended questions were used in the discussion and, accordingly, responses from the participants were collected, organized in codes and themes, and analysed (see Appendix A5 for full records).

The analysis of instructors' responses has contributed to earlier formulated themes (theme 1, 3, 4, 5, 8, and 9), as explained below.

<u>Theme 1</u>: KU Strategy and Applied Policy on e-learning

Both focus groups conveyed a similar view towards KU's strategy and prevailing policy on e-learning, which is neither formally written nor clearly and properly communicated. For example, participants in e-learning users' group said,

> *"I wonder does KU have a policy on anything?",*
> *"KU strategy for e-learning is not clear",*
> *"I do not think a lot of us have read KU strategy, however I read the mission statement and some of the processes that KU promote the faculty to use state of the art technology to enable their teaching. So on paper it is written but not communicated or at least not clearly".*

While the non-users group responded,

> *"the strategy is not clear, one time they emphasise it, then they don't facilitate it and make it easy to use",*
> *"we do not have any administration or learning strategy by KU. I doubt you would find a document on KU strategy".*

Some participants related e-learning's unpopularity in KU to administration's limited involvement and their unclear role,

> *"I feel there is no involvement of KU high administration, and better alignment should be made between what we do with e-learning and KU strategy, including the training requirement".*
> *"e-learning started as a buzz word, KU purchased it, created a division to handle it. they had the software and the money but did not know how to promote it. This is the situation now".*
> *"KU have rushed into getting the e-learning system without adequate preparation for it, similar to the other system KU have enrolled".*

Similarly, the non-users group responded,

"the intention was good, but KU did not do a good job in promoting it or to have the right environment to use it".

One of the respondents explained that,

"I believe it is not only KU problem, even in corporate level, when technology is pushed as a strategy into operation. It results in confusion and disturbance are added. It should be the other way around, as an organization, a strategy should be set first and then define the tools to serve the strategy. This approach is missed at KU as well as on commercial corporate level".

Another elaborated on an even a lesser brighter future for e-learning,

"from what I have seen in KU future IT plan, KU e-learning system takes a back seat among other IT requirements".

One of the respondents explained an experience of another university with e-learning system,

"they restricted the instructors to get certain services through Bb system only and the instructors are evaluated and awarded based on their use of the system".

Mandatory enforcement of KU policy was discussed and responded,

"nothing is mandatory at KU. Faculty chooses what they want".

There was a genuine need for a clear policy illustrated by both groups. The policy should resolve the problem of overlap in responsibility between KUCIS and CDL in supporting e-learning users' requirements, as pointed out,

"KU Centre of Distance Learning supports e-learning system functions while the KU Centre of Information System handles system's problems which sometimes create a problematic situation of overlap responsibility and to whom to call. It is better to have one department to handle all aspects of the e-learning".

In addition, the policy should support the decision making process under CDL, with respect to system support, communication with users, and training requirements, as mentioned,

"KU have the package such as Blackboard (Bb) but not properly supported, or communicated to the instructors or covered by proper training".

This is necessary if KU would attract more users among the instructors, as pointed out by an instructor, a non-user of the system,

> *"the use of e-learning depends on what comes after the initial stage. If they don't support it, promote it and encourage on using it, nobody will use it".*

<u>Theme 2</u>: Awareness sessions, workshops and training on e-learning

Both groups, the system users and the non-users, agreed that CDL needs to do more, for example, a user responded that,

> *"The Centre for Distance Learning is unknown to us, they do not have any activities to increase awareness or provide necessary training to instructors".*

Another respondent highlighted the lack of training,

> *"I am not sure I have seen any training given"*

This indicates a genuine requirement for revision of KU's strategic plan. Although they valued the importance of training - *"early training is effective"* - internal communication through memos or circulars on training is one reason behind the lack of training.

> *"I know training is provided by KU if you ask for it, but it is not communicated properly".*

It is evidenced from focus group 2, the non-users of the system, that a lack of adequate training may have contributed to them not using the system, either because the training was not communicated, *"last time I heard about training on Blackboard was 4-5 years ago"*, or because it was not given properly,

> *"once a person from the Centre of Distance Learning gave us a training session and kept talking and showing windows of the system on the projector, but never gave any training material or manual we can refer to later".*

> *"training should be a continuous process and given to every newcomer to KU",*

"if they provide a simple manual, an easy step by step on how to use system, that will encourage using it".

<u>Theme 4</u>: Technical support of e-learning at KU

Technical support given by KU's IT department has been given attention by both focus groups. One participant illustrated the IT staff's lack of competency as being a reason for the problem,

"sometimes I face a problem that IT find it difficult to solve it due to staff lack of competency",

Or the extent of their service,

"integration between different packages that I use is very important to me and IT cannot help me on that".

A point of view to technical support was highlighted by one system user in focus group 1, in response to Q4: *Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU*? He referred it to technology adoption stages

"I think it is to do with earlier adopters and later adopters of technology. Usually during system implementation adopters depend on IT support more and later on, such dependency becomes less with time".

This notion may reflect that the more experienced instructors might be considered late adopters of the e-learning technology, thus, they find IT support more crucial to them.

On the hand, the non-user group considered IT technical support to be one of the factors affecting e-learning system usage also, as one responded, *"technical support is critical and because of them I'm not using the e-learning system".*

Others even extend the complaint on technical support to a lack of fulfilling other instructors' crucial requirements of important computer software packages, *"KU do not provide the software packages we need such as Minitab"*, due to budget as pointed out *"technical support have limited budget"*.

<u>Theme 5</u>: Instructor age as a factor

The instructor's age has been brought into the argument for the reasons behind why female instructors or assistant professors were more positive towards the use of e-learning system. The answer was simply because they were younger,

> *"I think this might be due to female instructors enrolled in the KU in later years, which make them part of the younger generation who perceive a benefit from computer technology more than the older generation"*,
>
> *"for the females I don't see why would they be more positive, may be because they are newcomers"*,
>
> *"I think new comers are more associated with being young and exposed to new technology"*.

Similarly, in response to the relationship between years of experience and perceived need of technical support, *"this is because the more experienced instructors are older and require more attention from IT people"* and *"because assistant and associate professors on the average are younger"*.

Age was also considered a reason for not having any impact on the college type (art or science)

> *"maybe it is because of the college, some colleges are newly added to KU and therefore their instructors are younger and technology-oriented which may have contributed in the study finding"*.

Theme 6: E-learning system design

E-learning system design and its features were perceived differently between the two focus groups. In the case of focus group 1, the users group, the e-learning system features were objectively evaluated positively, as one responded

> *"in comparison to other system used by some of the instructors Blackboard preserves the privacy and confidentiality required in an e-learning system",*

Or, negatively, as another participant pointed out

> *"I think the e-learning system we have is limited and important software features or options were not purchased by KU, that's why sometimes we have problems".*

On the other hand, for the non-user group, e-learning is generally considered an activity demanding more effort and time without apparent justification, as one vehemently pointed out

> *"I hate it, I tried to learn it, but it is tedious and consumes a lot of time",*

Another participant said

> *"Blackboard e-learning system has a lot of features, but it is the setup cost, it is time consuming to learn it".*

KU CDL needs to review the system process on how an e-learning system can be connected to other systems, such as the student registration system, in order to make courses and students enrolment in e-learning easier. This problem has affected the use of the system, as highlighted by a non-user participant

> *"every semester I have to enrol the students and assign the course and so on… because of the process I do not use it".*

In spite of the system not being used, another participant justified its non-use to the number of students,

> *"for great number of students it might be feasible to use it to make quizzes and grade them, but for 30 students, I prefer to do it myself and outside the system".*

In general, the system design and the features it holds is considered an important aspect in deciding the effective use of the system.

Theme 8: Instructor's Technology readiness

Technology, in general, was viewed by both focus groups in similar ways, however, technology was associated with the instructor's age. The dominant position was that young instructors are more ready to accept technology, while *"older instructors are reluctant to handle technology"*

As mentioned by one of the participants, drawing from the discussion outcomes of both groups, the main explanation behind such a stance is that

> *"maybe because the younger generation feels more comfortable with trial-and-error approach in solving problems with the system while older ones do not",*
>
> *"young generation instructors are familiar with today's software interface features such as a gear icon which probably what they need to edit a setting page. While the older generation instructors might call IT staff to help, they do it".*

The previous experience with technology and, specifically, an e-learning system usage during the PhD study was agreed upon as a common reason for younger instructors' readiness to handle technology

> *"Because of previous experience during my PhD study I used WebCT, which became Blackboard later on. So KU blackboard was not different to me".*

Although the second group, the non-user, had young instructors among them, instructors young age continued to be considered by the group as the main factor in deciding the instructors' readiness for technology; as pointed out *"the newcomers are more technology savvy and have no problem dealing with it", or "because they are experienced with the use of technology"*, they are more willing to use it or they are *"expected to use new technology"*.

A female participant noted “female flexibility” as a factor for technology readiness among female instructors, *“I think it may be different for female instructors because I believe they are more flexible than male instructors”*.

An observation was recorded during the second focus group. Although the older instructors were not using e-learning systems, they did not want to appear to be against the technology and discussed using the technology, of their time, in college, the punch card computers, and how technology served them back then; however, they think today’s technology is far too complicated and time consuming for them to handle, or learn sufficiently.

<u>Theme 9</u>: Attitude toward e-learning

Drawing on the discussion of both focus groups, it can be concluded that a generally positive attitude toward e-learning system exists among group 1, the system users, but less so for the second group. For example,

> *“e-learning is vital to me, I cannot do my courses without it”*, or *“the most important component of e-learning is the communication. In my courses I value most the communication, in addition to the course notification to students”*.

One of the participants indicated this, “recently, e-learning served me well. It acted as a repository of all my work when I needed to submit it to get an award. Also, I often use the journal feature of Bb”.

When Q12: *Why do you think instructors using Blackboard perceive e-learning usefulness more than instructors using other systems do at KU*?, was asked, participants’ responses came to support the finding

> *“although KU didn’t install all options available under Blackboard however the available features support my work”*.

"previously, I used social media packages to communicate with the students but I stopped. I don't want to share my private contacts information. KU e-learning can do it with jeopardizing my privacy".

One of the participants among the system users anticipate a future recognition of the KU system as becoming a default and seamless system, used by all instructors and students,

"what I see e-learning is becoming more of a default system in universities around the world. It is part of KU whether we like it or not", while others think differently, *"from what I have seen in KU future IT plan, KU e-learning system takes a back seat among other IT requirements".*

Another participant explained

"..there is an intention in Kuwait to create what it is called a Virtual University."

Another aspect extracted from the user focus group, when discussing the survey analysis findings, with respect to the instructors' actual use and the perceived usefulness of the system, its ease of use, and attitudes toward the use of the e-learning system at KU, was a general agreement that instructors who find e-learning useful and easy to use would have a better attitude toward using it.

The second focus group expressed a negative attitude toward the use of e-learning and tried to attribute the non-use of the system to teaching subject incompatibility to the e-learning technology,

"implementing e-learning depends on the subject of teaching"

And expressed as,

"I am surprised that it would be the same for art and science colleges".

However, the survey analysis finding on the type of the college (Art of Science) was found not to have an impact on the perception of e-learning usefulness.

The user focus group reflected on this particular issue with a justification such as,

> *"There should not be any difference between the colleges in perception toward e-learning usefulness. For instance the use of the communication feature of e-learning does not matter whether in science or art colleges"*.

Chapter Summary

In this chapter, three parts were presented. Part A outlined the Structural Equation Modelling (SEM) techniques, namely, Cronbach's alpha reliability analysis, along with exploratory factor analysis, goodness-to-fit fitting process, and, subsequently, various reliability analysis, which has resulted in reducing the study theoretical model, with 11 constructs, to the final and fitted model, of 6 constructs: PU, PEOU, ATT, CSE, USF, and TS. Accordingly, the research questions and research hypotheses were identified.

Part B presented the demographic characteristics of the sample, and the results of various SEM analyses that examined and validated the research hypotheses.

Part C then covered the analysis of collecting data from the unstructured interviews of 24 KU instructors. The analysis produced nine themes. In addition, the outcomes of data analysis that examined the recorded literature of two focus groups; group one of KU instructors, who use an e-learning system at KU, and group two, KU instructors who do not use an e-learning system at KU.

The next chapter will discuss the research findings, limitations, recommendations, and future research opportunities.

5 CHAPTER FIVE: DISCUSSIONS AND CONCLUSIONS

This chapter presents the discussion of the findings, which is addressed in three parts. First, the applicability of the adopted TAM model as an acceptable model for predicting the instructors' perspectives toward the use of the e-learning system at KU. Second, whether the study reveals any significant differences between the demographic characteristics of the respondent, gender, age group, college type (science major, art major), respondent's academic position (Assistant, Associate, or Full Professor), levels of respondent's years of experience, the selected e-learning system in use, in their effects on the research variables, which are: PU, PEOU, ATT, CSE, USF, and TS, and formulating instructors' perspectives toward the use of e-learning. Third, it discusses the causal nature of the relationship between the exogenous variables (CSE, USF, and TS) and both the endogenous (PU, PEOU) and the outcome ATU based on the analysis outcomes of the research survey, interview data, and focus group discussions. The chapter then puts forward a conclusion, with recommendations, before concluding with future research opportunities.

5.1 Discussion of Findings

The discussion of the findings is divided into three parts. Part one discusses the applicability of TAM, in the case of KU's e-learning system, from the instructors' perspective. Part two details the discussion of instructors' perspectives of the e-learning system at KU based on the demographic characteristics of the sample. Finally, Part three will lay out the study findings based on the research final model and the effects of the exogenous variables on TAM's endogenous constructs.

5.1.1 TAM Applicability on KU E-learning System

TAM is a well-established acceptance model for information technology and has been validated in several previous studies. It's useful to find the extent of TAM's applicability to cover KU's e-learning system, with an intention to investigate the external factors drawn from KU's environment and possible to conclude with adding new factors or elaborate with further views on the factors were drawn from the literature.

TAM constructs, consisting of PU, PEOU, ATT and Intention to Use (ITU), were included in the study's theoretical model, however, during the exploratory factor analysis of the data as part of the fitting process (see section 4.2), ITU was excluded in the study's final fitted model. This may suggest that ATT, as a cognitive process, and ITU, as a decision taken by the system user (Davis, 1986), would not be distinguished from one another when the study took place, post the e-learning initial implementation at KU, by a considerable period (12 years). According to Davis (1986), an assumption that ITU would be too quick a decision to make when obtained immediately after an illustration of the system's benefits was made to the users and hence ITU was eliminated in Davis' (1986) model. However, this notion considers the study subjects who were exposed to the system for a considerable period, to the point that the cognitive process (ATT) and decision-making (ITU) were already processed and mixed in their minds, to form a perspective toward the use of the system. In this case, ATT would present the instructors' perspective toward the use of e-learning at KU, in the analysis of the causal relationship between PU toward ATT, and PEOU toward ATT. In addition, instructors' perspectives would be further addressed, with every effect exerted by the background variables, as well as the external variables, on the two beliefs PU and PEOU, and the outcome ATT.

Based on the study results it was found that PU and PEOU were statistically distinct dimensions, in line with other studies (Hauser & Shugan, 1980, Larcker & Lessig, 1980, cited by Davis, et al., 1989). In addition, PU had a positive and strong total effect on instructors' ATT toward the use of e-learning and such an effect was built, in total, on the direct relationship of PU on ATT. This finding validates TAM's applicability in the case of KU's e-learning system.

In addition, PEOU had a significant and positive total effect on PU and such an effect was, in total, based on the direct relationship of PEOU on PU which supports the outcomes of previous studies on TAM and revalidate its applicability.

PEOU had a significant effect on ATT, based on majority, on the indirect relationship through PU. This tallied with the outcomes of many previous studies and presented a known and consistent outcome of TAM, and, hence, revalidates its applicability for KU's e-learning system.

Accordingly, TAM stands as a valid and robust model to be applied in the case of KU's e-learning and conformed with previously explored analysis in the literature, such as that of King and He's (2006) meta-analysis of previous TAM related studies.

In the subsection to come, the effects of the demographic characteristics on the research model constructs are explained, in light of the statistical analysis outcomes, along with the possible supporting explanations from the qualitative data. Subsequently, in a similar approach, the effect of the external factors on TAM constructs PU, PEOU, and the formulated ATT, is presented.

5.1.2 The Effect of Demographic Characteristics

Studying the effect of demographic characteristics on the respondents' perceptions to research variables (PU, PEOU, ATT, CSE, TS, and USF) may subdivide the university-targeted population into small segments, where the instructors' perspectives toward e-learning can be recognized. Generally speaking, respondents perceive all research variables positively. This result agrees with the research findings of Alajmi (2010). However, significant differences in perception between demographic levels are discussed further below.

The results indicate that the instructors' perspectives toward the use of e-learning in KU, based on their perceptions of all research variables, are positive irrespective of their gender. Interestingly the research also concludes that females are more positive than males toward CSE. Adams (2002) supports the conclusion that females have higher levels of technology integration than males. Reasons drawn from the focus group discussion indicate that female instructors are of a younger generation who tend to be more receptive to technology and the use of computer skills. In addition a self-identified 'female flexibility' is considered as another reason.

Regarding the difference in age groups, no significant differences are observed with respect to research variables, except for PU, in which younger instructors perceive e-learning's usefulness more positively than older instructors, which have influenced their attitude toward the use of e-learning and actual use it (42.5% of the instructors are younger instructors who use e-learning system in KU). This difference may be seen by the fact that some older instructors may resist a change to their traditional methods of teaching or to adopting new technology (Venkatesh, et al., 2003). This argument is also supported by the results of the interviews and focus group discussions, where participants expressed reasons, such as

resistance to change and reluctance to handle technology, or even viewing e-learning as an overly complicated technological initiative. On the other hand younger instructors' recent exposure to technology and familiarity with a range of software interface tools, such as the gear icon, or being receptive to trial-and-error technique puts them in a better position to deal with e-learning and made them more enthusiastic to try out new technology in the classroom (Angelides, 2004).

Furthermore, the analysis shows that instructors from different colleges, be it art or science major, has no effect on their view on the use of e-learning, which validates the null hypothesis. This means that instructors from any of the KU colleges value e-learning equally, regardless of their academic background or their teaching subject. This finding was supported by the focus group discussions which argues that any instructor, despite his or her college, can use e-learning features such as the communication and the notification tools.

The analysis shows that all instructors with different academic positions view the PU of e-learning positively, however, both assistant professors and professors are found to be more positive than associate professors. In the case of the associate professors it is argued that due to their heavily involvement in research for reasons of advancement, they have limited time to develop their courses through the e-learning system. However, assistant professors are less loaded with research and are mostly younger and more used to technology and hence are more positively perceive e-learning usefulness. Although, the full professors are usually older and expected to be less enthusiastic toward technology, however, they still positively perceive e-learning usefulness. The result may be explained by the notion that, although some professors undermine the use of an e-learning system in practice they would like to maintain an image of pro-technology. An observation is drawn from the second focus group discussion when older instructors, who are not using e-learning, reflected on how they used to be

knowledgeable and accepting of technology in their day using, for example, punch cards and older computer systems. However, they indicated that they felt that today's technologies are overly complicated. Despite this they suggested that they must be seen to be receptive to technology in their jobs and for this reason an element of peer pressure may explain the professors' positive perception toward the PU of e-learning. As indicated above, workload as a result of research work or extra administrative duties, is found associated with less receptive to e-learning PU as the case of associate professors. It has been argued in the qualitative input that workload is considered as one of the inhibiting factors against the effective utilization of e-learning. It was even suggested to have a reward system to overcome this problem of limited system use; most of the participants believe a reward system would be a motivating factor that KU should adopt. As a matter of fact a reward system and a change in KU policy from voluntary to mandatory use of e-learning system, are considered the most important measures that should be taken on board by the university to increase e-learning utilization at KU.

Another aspect of the results indicates that, as instructors academic positions rise, their perception of CSE decreases, which might be due to instructors' lack of readiness to accept new technology. Age is viewed as a readiness inhibiting factor, which evidenced from the focus group discussion. Age is associated with some instructors' views of today's technology, being complex, difficult to handle, or time consuming. Moreover, some instructors limited computer knowledge may decrease their readiness and create a fear of peer view of incompetency by other instructors, which affect their participation in new technological initiatives such as e-learning. Hence, instructors with higher academic position are usually older and might be more attached to their traditional methods of teaching. Further, as the methods of teaching may vary in reference to the level of the course and the capacity of the

classrooms, assistant professors usually teach lower level courses with a higher number of students registered. Their frequent use of e-learning may be the reason as to why their rating of CSE is higher than both associate and full professors, respectively.

The results point out that respondents have positive perceptions to all research variables, as stated earlier. However, there are significant differences between respondents, based on their levels of years of experience toward PU, and TS. To further elaborate, as years of experience go up, PU consistently declines, while TS goes up with years of experience. This result supports the fact that young instructors, with limited years of experience, are active in using e-learning more than instructors with more years of experience. These results agree with the Adams' study (2002), who found that less experienced teachers had higher levels of technology utilization.

Furthermore, with respect to the differences between the levels of teaching experience, the PU of e-learning is highest among those with teaching experience of 1-5 years. A possible reason for this might be their exposure to e-learning during their graduate studies abroad, mainly in US and UK universities, and their understanding of the benefits of e-learning to the learning process in motivating them to implement it in their teaching practice. It has been expressed in several interview responses and focus group discussion that prior experience in using an e-learning system during graduate studies has contributed in an increased number of system users among the young instructors at KU. However, those with more than 6 years of teaching experience record a lower frequency. This might be explained by KU's environment surrounding the e-learning system. There were a number of aspects expressed in the group discussions that described KU's existing situation with e-learning system. To elaborate further, the system is not updated frequently with new attractive features that take advantage of today's technological advances. In addition management's limited support,

unclear policies, and inadequate training were among the factors that impacted negatively on the instructors' opinions on the use of the e-learning system. Alkharang and Ghinea (2013) argue that management's lack of awareness of e-learning benefits is felt when the absence of clear training and learning policies aiming to develop the knowledge and the skills of their staff. In line with this argument, those with more than 16 years of teaching experience have the lowest frequencies because of their long exposure to the environmental effects; generational differences, and reluctance toward technology, are other reasons. The effect of system problems on their outlook perceptions is clearly reflected in their increasing reliance on TS, which is higher for those with the longest experience and years in college. Young instructors still tend to use trial-and-error practice to solve their system problems while the more experienced instructors may be too busy and prefer to call TS staff. Young instructors also adopt technology at an earlier stage of their exposure and rely less and less on TS as their experience increases on handling the technical activities. This view assumes that some of the more experienced and older instructors are actually late adopters of the technology, who just started to get acquainted with the e-learning system and require the most attention from TS. Meanwhile, since they are still in the lower part of the learning curve toward the e-learning system, it may explain their lower perception of PU towards e-learning. This notion is supported by (Delone & McLean, 2003), in that, some of more experienced and older instructors would not realize the benefits of the system, thus increasing PU, until they adequately learn and actually use the system. This point is further elaborated below.

It is observed from the analysis of the results that a significant difference exists between the instructors who use e-learning in all courses, the ones who use it in some of the courses, and the ones who do not use e-learning in any of their courses. These results indicate that a higher utilization of e-learning would lead to a higher PU and PEOU of e-learning, along with TS.

The more e-learning is utilized, the more benefits are realized (Delone and McLean, 2003) and the system becomes easier to handle. On the other hand dependency on TS is expected to increase due to their important role in maintaining the system, especially if KU and other colleges are to continuously update and move with the times. This result agrees with other studies (Al-alak and Almnawas, 2011; Al-Furaydi, 2013), which demonstrate that instructors with more experience of technology are more willing to continue using it.

The analysis of the results validates the null hypothesis on the effect of professional development, which indicates that no significant differences exist between those who have attended training courses on e-learning and those who are less trained or have not been trained at all. The results show that all research variables (PU, PEOU, ATT, CSE, USF, and TS) are not affected by the training given by KU, which confirms that the training given was either not effective or not adequately provided. The result is in line with some scholars' findings that in many cases, professional development and training is neither provided to a high standard (Borko, 2004), nor does it prepare the instructors for a new pedagogical approach (Barnett, 2002). Referring to the outcome of the qualitative analysis, several reasons are put forward:

- No clear policy on the training requirement is provided.
- Training provider is not adequately identified, whether the KU Centre for Information Systems (KUCIS) or the Centre for Distance Learning (CDL).
- Training is not communicated properly.
- If training was provided, it was not effective, either because it was given by incompetent people, or because training material was not provided.

This result is in line with (Alkharang and Ghinea, 2013), and reflects KU's unsuccessful strategic approach and the lack of effectiveness of efforts to prepare the instructors to

recognize and overcome barriers preventing them from adopting the new technology (Kopcha, 2012) or to provide them with technical knowledge that encouraged them to accept the supplied technology (Al-Senaidi, et al., 2009).

Moreover, another result has ascertained the effect that different selected e-learning systems, whether its Blackboard the official e-learning system at KU, or any other e-learning system selected by the instructors, have on research variables. Different selection options are found to have a significant effect on PU only. Although both options have a positive effect, the selection of Blackboard is found to be higher with regards to PU. This is supported by the extracted data from the focus group discussions which suggested that Blackboard is considered an adequate system. Essentially, it is argued that while it has the bare minimum of features it meets the requirements of the instructors. Others preferred Blackboard because it maintains confidentiality (Al Mousa, 2007) and provides content security (Leem & Lim, 2007), often considered important to instructors. In addition, Blackboard acted for some instructors as a repository of all work provided over a considerable period. Because other systems are not integrated into KU, and because of a lack of adequate TS, IT staff could not extend their help to the instructors. Although the number of Blackboard e-learning system users is less than the users of other systems, and although it requires an update and new features to cope with advances in technology, it is still considered the better option in KU although there is an acknowledgement that it needs to be reviewed and fixed.

5.1.3 The Causal Relationship between the Research Variables

The analysis of the fitted model has pointed out several facts regarding the nature of the relationship between the exogenous variables CSE, USF, and TS; and the endogenous variables PU, PEOU, and ATU. Initially the study theoretical model included seven external variables, namely, CSE, PE, JR, SQ, TS, PD, and USF. However, during the fitting process,

four variables were excluded in the study final model, but some of those variables did find a way to surface under the considered variables, CSE, TS and USF as a result of the qualitative analysis undertaken. For example, PE with e-learning during graduate studies, has been expressed by a number of respondents to be a positive contributory factor to their ease of use regarding e-learning in teaching, which can be viewed as a computer skills covered under CSE. Another example, PD and training, constitute an integral part of any organizational plan when implementing a technical initiative such as an e-learning system, therefore it would be specified in the organization's policy toward the system in question and covered under USF. Accordingly, the effects of CSE, TS, and USF on the endogenous variables are explained below, while the relationship of other variables will be explored as they occur.

CSE, by definition, is an individual's perceived ability to use previous computer skills and capabilities to navigate e-learning, in both PU and PEOU, formulating KU instructors' ATT towards e-learning. On the one hand, this finding is in line with previous studies that external variables exert major effects on the ATT indirectly through the two beliefs, PU and PEOU, which revalidate Davis, et al.'s (1989) assumption. On the other hand, CSE specifically, exerts a direct effect on PU and PEOU (Ferdousi, 2009; Waheed & Hussain Farooq, 2010; Gong, et al., 2004).

The qualitative analysis has revealed several aspects of CSE that are important. Although statistically there were no significant differences between the instructors' views of different age groups on CSE, interview responses and focus group discussions have found an association between CSE and instructors' age. Under theme five, young instructors were found to be technology-ready based on their recent graduate studies exposure to computer technology in general and e-learning more specifically. As mentioned earlier, this shows a prior experience with computer skills and its effect under CSE. On the other hand older

instructors may be considered less enthusiastic toward technology and computer utilization in teaching. In addition, CSE was found to be associated with gender, wherein, female instructors were more positive toward their previous computer skills and capabilities, and this translated into them having a better view towards e-learning's usefulness. Furthermore CSE was effective in formulating an instructors' stance when a lack of computer skills would be an obstacle against their readiness for new technology.

In discussing the effect of the external variables on TAM constructs, TS was found to be among the important factors that influence an instructors' stance on the use of the e-learning system at KU. Again, TS has a direct effect on PU and PEOU and an indirect effect of ATT, which revalidates Davis, et al.'s (1989) assumption. Furthermore, TS was found to be among the environmental factors surrounding the e-learning system at KU that affected the instructor's attitude toward its usage, as expressed by some of the interviewees. To have a proper e-learning system in place, TS was viewed as an important aspect to be maintained, which confirms the findings of Cheung & Vogel (2013). TS was seen as an effective element in reducing PU and PEOU towards e-learning, when the e-learning electronic contents are not developed by professional staff, or when the system's availability was affected by problems in the infrastructure network or the server, or by the incompetence of the staff handling the system. Respondents have also stressed system security and maintaining a high level of content confidentiality, in line with previous findings (Al Mousa, 2007; Leem & Lim, 2007). To maintain a high system quality is an integral part of the role played by the technical support unit. This is a crucial aspect of KU's organizational structure when it comes to the support required for the e-learning system. KU has two units that support the e-learning system, one is the Centre for Distance Learning (CDL) and the second one is the Centre for Information Systems (KUCIS). Lack of clarity as to their precise roles have contributed to

increasing confusion among respondents toward the support required, which is considered another element that reduced the effect of TS in relation to e-learning's PU and PEOU.

KU's USF is the last external variable analysed as having an effect on the two beliefs, PU and PEOU, and on the outcome ATT toward the use of e-learning system. USF was found significantly affecting PEOU of e-learning. This is due to the fact that organizational strategy and the governing policy should aim to integrate technology within the learning process and develop the instructors knowledge and skills to handle the system. However, KU effort was not successful enough and USF was found to be insignificantly affecting PU of e-learning, which in turn, has not contributed much in formulating instructors' ATT toward the e-learning system. This factor is conceived to be a major effect on the negative instructors' perspectives toward the use of e-learning at KU. The reasons drawn from the participants' responses in the interviews and the group discussions can be summarized under three issues: Policy setting, motivation measures, and effective training.

The strategic setting by KU higher administration appeared to be vague to the instructors, as to how e-learning should serve them with or the position e-learning should play in the learning process. KU's policy on e-learning was pointed out as not being clear and not communicated properly by a number of the interviewees and based on further discussions at the focus group sessions, policy setting did not seem to be a general practice at KU on similar initiatives. E-learning was optionally provided to instructors, however, as was often pointed out the respondents wanted this changed from optional use to mandatory use. Such a direction appeared to have never been discussed with the instructors. There was a confusion about the role played by CDL and KUCIS in supporting e-learning functions and system operation, or for future refinement and upgrades. There was no cyclical review of e-learning performance, except for a yearly statistical report produced by CDL on the number of e-learning courses

provided online by different colleges and the number of students who attended those courses. E-learning has taken a back seat in future IT plans. This was expressed in focus group discussion. As a result policy setting and enforcement should be brought to the attention of decision makers at KU.

Motivating instructors to use the e-learning system has been commented on by several interviewees; a reward system was one suggestion. Others suggested a system design change to allow the system to serve the instructors' functional requirements, which could also monitor their usage for performance evaluation purposes. Such an issue should be discussed and finalized by KU decision-makers.

Another aspect of the strategic setting related to the e-learning system was the training requirement. It appears that no clear training policy was put in place. It was not clear who receives training: when, how, and by whom. Some of the respondents have attended training on the system, but it seemed un-productive and lacked trainer competency or training material. Providing proper training, conducting a workshop, and promoting awareness were often mentioned as ways to get the instructors to effectively use the e-learning system.

According to Titthasiri's (2014) strategic decision-making framework, setting e-learning strategic objectives, policies and training requirements should be finalised during the implementation process. In a review of KU's history (see chapter 2), KU seemed to have performed the necessary steps when it launched the system at the beginning. However, after a considerable period of time (12 years) the e-learning system requires a closer review by the KU administration in order to fix the problems mentioned above.

5.2 Conclusions

KU, a leading public HEI at the State of Kuwait, implemented an e-learning system in 2004. In light of the increasing number of high school graduates and as a result of political pressure e-learning system was viewed as an important initiative to allow KU accommodate the increasingly overwhelming work load. The e-learning system utilization in terms of the number of students and courses, needed to be increased, as well as the level of system adoption by KU colleges, needed to be balanced. KU have exerted an effort to implement e-learning system in line with the applicable implementation framework, however it seems that the organizational strategies at KU have deviated from meeting its intended objectives, which might be due to instructors' perspective toward the use of e-learning in the educational process.

This study investigates instructors' views on the use of e-learning since they are the most important human element in the learning process. The study adopts TAM (Davis, 1989), to investigate the instructors' acceptance of e-learning in KU's education organizational setting. This was done when three external factors drawn from the environment, namely, CSE, TS, and USF, their effects on the two TAM beliefs PU, PEOU, and the formulated instructors' ATT toward the use of e-learning in the teaching process, were examined. USF was a factor seldom investigated and being considered as an external variable effecting TAM construct is a new dimension added to TAM application on a computer system, in general, and e-learning, in specific.

The study adopted the mixed theoretical stances of postpositivism, social-constructivism and pragmatism in viewing the social phenomena surrounding KU instructors and, in turn, selected a mixture of quantitative and qualitative approaches, in a triangulated formation of

data collection. This was done through a questionnaire, semi-structured and unstructured interviews, and focus group discussions.

A sample of 300 out of a total population of 1560 KU professor, were targeted and 268 instructors responded to the questionnaire, forming a response rate of 89.5%. In addition, 12 interview responses from assistant Deans, department heads and e-learning administration staff, 24 instructors' interview responses, and 2 focus group discussion notes were collected to form the qualitative data base.

Based on the analysis outcomes it is found that TAM as a model is valid and applicable in the case of KU's e-learning system, in which PU directly affects ATT and in less magnitude PEOU on ATT indirectly through PEOU on PU. In addition, CSE has a significant effect on PU, but less so on PEOU and, indirectly, on ATT, as well as a significant effect of TS on PU and in less magnitude on PEOU and indirectly on ATT. USF is found to have an insignificant effect on PU and a weak effect on PEOU, formulating the most adverse attitude toward the use of e-learning at KU instructors. The most supported reasoning extracted from the narrative data outlines three causes affecting USF: Poor policy setting, lack of motivation measures, and ineffective training.

Accordingly, the research model was valid in predicting instructors' acceptance of e-learning system and it adds to the TAM model a new dimension that benefits the scientific community in the fields of education, information technology, social psychology, and management.

5.3 Limitations

KU houses a considerable number of non-Kuwaiti citizens who bring into the environment different cultural and social stances toward work, organization, discipline, and ethics. The

study did not consider the social differences that may exist, but rather, considered the organization will force its own cultural values that influence everybody.

In addition, some of the KU instructors may have developed an attitude toward the use of e-learning based on their previous experiences in other organizations. The study considered that instructor's responses were based on their experiences with systems available or used at KU. This was clearly expressed in the questionnaire forms and explained to the participants.

5.4 Recommendations Based on the Study Results

This study recommends the following:

- The e-learning system should be part of the university strategic plan if it is to continue to serve the community of learners by providing structured education.
- The e-learning system should be set out in a clear policy that links it to a strategic objective, through a set of key performance indicators that determine its success.
- The policy should draw adequate attention to the e-learning system through proper communication to all stakeholders and made known by means of awareness campaigns, through visual, written, and verbal messages conveyed to everybody.
- The policy should outline the roles of all departments that are responsible for supporting the system and to ensure its success in achieving set targets. These departments should translate their commitment toward the policy into internal procedures that should outline what to do, and when and how doing it. All procedures should be approved by the highest authority in the organization and communicated clearly to concerned people.

- The policy and related procedure should outline the training requirement in terms of frequency and to whom it should be addressed. In addition, all training should be monitored for quality and effectiveness.
- The e-learning system should be integrated into the organization's main stream of systems, handling everyday work, conducted by the instructors, administrators, IT staff and students. The integration should serve the system function. In addition, a frequent review of system features should be built in the handling procedures and done effectively by an authorized and knowledgeable staff. System infrastructure should be monitored for any deficiencies that affect system performance. Stakeholders, including, and most importantly the instructors, should be approached to identify their wants and needs regarding the system.
- Competent staff should be employed to develop e-learning contents and to help the instructors do their work. A sharing of experiences of e-learning among instructors should be encouraged.
- Competent staff should be employed to support the system and solve its problems.
- A reward system should be put in place to recognize high achievers through system utilization and those who exceed their set targets.

5.5 Future Research Opportunities

a- The research model consists of CSE, TS, USF, PU, PEOU, and ATT, however, during the fitting process the behavioural Intention to Use (ITU) was joined with ATT in one factor. Hence, ATT, as a cognitive process, and ITU, as a decision-making process, can jointly formulate, what can be named, a Perspective to Use (PTU). The questionnaire items for measuring the perspective on e-learning could be mixed items, covering both attitude and intention to use (see Table 5.1). Accordingly, the

model will consist of CSE, TS, USF, PU, PEOU, and PTU (see Figure 5.1). This model can be incorporated in studies of systems that have existed for a considerable period, where the users are acquainted with the system and the focus is directed on their behaviour toward the system.

Table 5.1 – Questionnaire Items on Perspective on E-learning

Q No.	Question	Element
1	Using the e-learning system makes my work more enjoyable.	Attitude
2	I like using the e-learning system.	Attitude
3	The e-learning system makes my work more interesting.	Attitude
4	I intend to use the e-learning system in my teaching	Intention to use

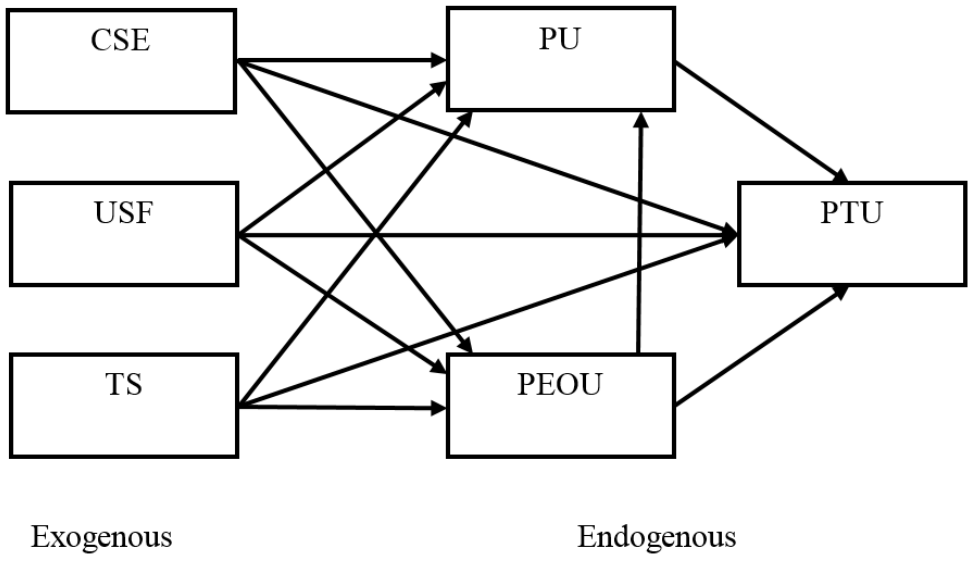

Figure 5.1 – Proposed Future Research Model

b- TAM has been successfully adopted in this study to gather the instructors' perspectives. Another study could benefit from gathering students' perspectives using TAM.

c- If KU follows the recommendations and implements the changes, another study, post the changes, could benefit the research community on how such changes, as outlined above, can make a difference.

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Appendix - A1 – Research Questionnaire Form – in English Language

An investigation of the application of the Technology Acceptance Model (TAM) to evaluate Instructors' Perspectives on E-Learning at Kuwait University.

A study conducted on the faculty of Kuwait University in all colleges.

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This study investigates the instructors' perspectives on the use of e-learning at Kuwait University (KU), and applying the Technology Acceptance Model (TAM) (Davis 1989) as a base of the research model. TAM is a social psychological model, and has been widely adopted in studies on technology acceptance. Based on Davis (1986), E-learning is a technological innovation that associates technology with learning, and influences a person's behaviour and how they perform their work. Users' attitude toward the use of e-learning is formulated based on their Perceived Usefulness (PU) of the technology and their Perceived Ease of Use (PEOU) of that technology. The attitude is evolved into a stand on the intention to use the technology, which in turn materialized into actual use of the technology. There are many factors that influence (PU) and (PEOU), which are drawn from the research environment. The results from the study will be used to inform the scientific community on the applicability of TAM in the case of KU e-learning system and benefit KU with recommendations to improve e-learning utilization.

Participants are requested to answer research questionnaire based on his/ her experience with e-learning at KU. The survey will take approximately (10 to 15 minutes) of your time. The participant response shall be anonymous and no data shall link to any specific participant in any way. The participant will suffer no adverse effects from involvement in the study and may benefit from the study in improving KU e-learning experience. The data collected through the survey shall be kept in safe custody by the researcher and shall not be released to any party. Upon completion of the research, the data shall be disposed in line with governing procedure at Dublin City University. The participant is free to withdraw from participation at any time before or during the study. If participant has concerns about this study and wish to contact an independent person, please contact:

The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000

Dear Kuwait University Faculty Member

Initially, we would like to thank you to choose to participate in our survey. Your participation is important to us. Please tell us about yourself:

Gender: ☐ Male ☐ Female

Age: ☐ 35 & less ☐ 36 to 45 ☐ 46 to 55 ☐ 55 & above

Your college:

☐ Law	☐ Medicine
☐ Art	☐ Pharmacy
☐ Business Administration	☐ Dentistry
☐ Social Sciences	☐ Science
☐ Life Sciences	☐ Engineering and Petroleum
☐ Women	☐ Architecture
☐ Education	☐ Computer Science & Engineering
☐ Sharia and Islamic Studies	☐ Allied Health Science

Classification:

☐ Assistant Professor ☐ Associate Professor ☐ Professor

Total number of years in teaching: ☐1 to 5 ☐ 6 To 10 ☐ 11 To 15 ☐16 & above

Instructions:

Please indicate your response based on your perceptions on the use of e-learning system as explained above.

1. Please indicate your current level of use of the e-learning system at Kuwait University

☐ All of my courses

☐ Some of my courses

☐ None of my courses

2. Have you attended any professional development sessions on an e - learning system in Kuwait University?

☐ Yes ☐ No

3. What e-learning system have you used at Kuwait University?

☐ Blackboard

☐ Other System / Technology. If so, please provide details: ----------

Please use the following rating scale to indicate your response.

5 = Strongly Agree with the intended meaning.
4 = Agree with the intended meaning.
3 = Neither Agree or Disagree with the intended meaning.
2 = Disagree with the intended meaning.
1 = Strongly Disagree with the intended meaning.

No	Item	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
	Perceived Usefulness					
4	Using the e-learning system in teaching improves my job performance.	5	4	3	2	1
5	Using the e-learning system in teaching enhances my job effectiveness.	5	4	3	2	1
6	Using the e-learning system in teaching increases my productivity.	5	4	3	2	1
7	Using the e-learning system in teaching makes it easier to do my job.	5	4	3	2	1
	Perceived Ease of Use					
8	I find it easy to get the e-learning system to do what I want it to do.	5	4	3	2	1
9	Interacting with the e-learning system is clear and understandable.	5	4	3	2	1
10	Interacting with the e-learning system is not complicated.	5	4	3	2	1

No	Item	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
11	The e-learning system is flexible to interact with.	5	4	3	2	1
12	I find the e-learning system easy to use.	5	4	3	2	1
	Attitude					
13	Using the e-learning system makes my work more enjoyable.	5	4	3	2	1
14	I like using the e-learning system.	5	4	3	2	1
15	The e-learning system is beneficial.	5	4	3	2	1
16	The e-learning system makes my work more interesting.	5	4	3	2	1
17	I look forward to those aspects of my job that require me to use the e-learning system.	5	4	3	2	1
	Intention to use					
18	I intend to use the e-learning system in my teaching	5	4	3	2	1
19	It is worth using the e-learning system.	5	4	3	2	1
20	I plan not to use the e-learning system in any of my courses	5	4	3	2	1
21	I plan to use the e-learning system in some of my courses.	5	4	3	2	1
22	I plan to use e-learning system in all of my courses	5	4	3	2	1
23	I intend to use e-learning system to improve my teaching.	5	4	3	2	1
24	In the future, I intend to increase the use of the e-learning system in my teaching.	5	4	3	2	1
	Computer Self-efficacy					
25	I feel comfortable using computers to do my e-learning tasks.	5	4	3	2	1
26	I could complete e-learning tasks using computers if I were to see someone else doing it effectively.	5	4	3	2	1
27	I could complete e-learning tasks using computers if I had used a similar package before to do the same tasks.	5	4	3	2	1
28	I can complete e-learning tasks using computers if I have the system manual/ guidelines for reference.	5	4	3	2	1
29	I can complete e-learning tasks using computers even if I have not used a system like it before.	5	4	3	2	1
	Prior Experience					
30	I have had good experiences in using the e-learning system for teaching purposes.	5	4	3	2	1

No	Item	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
31	I have good experience in using general application software (e.g. word processors, spreadsheets, presentation) that make the e-learning system easy to use	5	4	3	2	1
32	I have had good experiences that made the e-learning system easy to use.	5	4	3	2	1
33	I have had good experiences using the e-learning system that improved my work quality.	5	4	3	2	1
34	I have had good experiences using the e-learning system that have increased my productivity	5	4	3	2	1
35	I have had good experiences using the e-learning system that has improved my career status.	5	4	3	2	1
	Job relevance					
36	I consider the e-learning system to be important to my job.	5	4	3	2	1
37	I consider the e-learning system to be needed to my job.	5	4	3	2	1
38	I consider the e-learning system to be fundamental to my job.	5	4	3	2	1
39	I consider the e-learning system matters to my job.	5	4	3	2	1
40	The use of the e-learning system increases the level of challenge in my job.	5	4	3	2	1
41	The usage of the e-learning system makes my job easy.	5	4	3	2	1
	Professional Development					
42	The training I received could be easily applied in my classes.	5	4	3	2	1
43	I feel adequately trained in the skills needed to use the e-learning system.	5	4	3	2	1
44	I had enough opportunity to share technology lessons with other instructors.	5	4	3	2	1
45	The training I received on the e-learning system enhances my professional capacity to complete relevant instructional tasks.	5	4	3	2	1
46	The training I received on the e-learning system increases variety in my job.	5	4	3	2	1
47	The training I received on the e-learning system increases my job security.	5	4	3	2	1

No	Item	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
	University Strategic Focus					
48	The university should require that all instructors should use e-learning in the future.	5	4	3	2	1
49	I think a university policy exists to encourage the use of e-learning system.	5	4	3	2	1
50	Using e-learning system in my teaching complies with university policy.	5	4	3	2	1
51	Using e-learning system in my teaching justifies the funds spent by the university on the system.	5	4	3	2	1
	System Quality					
52	The e-learning system allows me the control over my teaching activities.	5	4	3	2	1
53	The e-learning system offers flexibility as to time and place of use.	5	4	3	2	1
54	The e-learning system provides the functions I need to conduct my teaching activities successfully.	5	4	3	2	1
55	I have appropriate and sufficient software and hardware on my personal computer to use e-learning system.	5	4	3	2	1
56	I can easily access the e-learning system anytime I need to use it.	5	4	3	2	1
57	The e-learning system has well-designed user interfaces.	5	4	3	2	1
58	The e-learning system is reliable.	5	4	3	2	1
	Technical Support					
59	A help desk is available to me when I face a technical problem.	5	4	3	2	1
60	I have access to e-learning system technical support when I need it.	5	4	3	2	1
61	I believe e-learning system support staffs are highly qualified to solve technical problems.	5	4	3	2	1
62	E-learning system technical support offered by the university improves my teaching.	5	4	3	2	1
63	E-learning system technical support offered by the university increases my productivity.	5	4	3	2	1
64	E-learning system technical support offered by the university makes e-learning system more effective.	5	4	3	2	1

Thank you for your contribution to the study.

Appendix - A2 – Research Questionnaire Form – in Arabic Language

التحقيق في وجهات نظر أساتذة جامعة الكويت نحو التعلم الإلكتروني باستخدام نموذج TAM

دراسة ميدانية على الهيئة التدريسية في كليات جامعة الكويت.

سيدتي الفاضلة / سيدي الفاضل

نود أن نشكرك على مشاركتك في هذا الاستبيان والذي سوف يأخذ منك 10 إلى 15 دقيقة لإكماله. سوف تبقى إجابتك مجهولة وستكون الأسئلة حول تجربتك وموقفك نحو استخدام نظام التعلم الإلكتروني في تجربتك الأكاديمية في جامعة الكويت. إجابتك مهمة لنا. ليست هناك إجابات صحيحة أو خاطئة؛ ولكن نطلب إجابتك بكل صدق ما استطعت.

عاليه أشكناني
جامعة مدينة دبلن (DCU)

alia.ashkanani2@mail.dcu.ie

في البداية، من فضلك حدد لنا ما يناسب من معلوماتك:

الجنس: ☐ ذكر ☐ أنثى

العمر : ☐ 35 وما اقل ☐ 36 الى 45 ☐ 46 الى 55 ☐ 56 وما فوق

إختار/اختاري الكلية:

☐ الحقوق	☐ العلوم
☐ الآداب	☐ الصيدلة
☐ العلوم الاجتماعية	☐ طب الأسنان
☐ العلوم الحياتية	☐ الطب
☐ العلوم الإدارية	☐ العلوم الطبية المساعدة
☐ البنات	☐ العمارة
☐ التربية	☐علوم وهندسة الحاسوب
☐ الشريعة والدراسات الإسلامية	☐ الهندسة والبترول

إختاري/اختار التصنيف:

☐ بروفيسور ☐ أستاذ مشارك ☐ أستاذ مساعد

مجموع عدد سنوات التدريس: ☐ 1 الى 5 ☐ 6 الى 11 ☐ 11 الى 15 ☐ 16 فما فوق

تعليمات:

الرجاء ان تحدد إجابتك بناء على التصورات الخاصة بك من استخدام نظام التعلم الإلكتروني كما هو موضح أعلاه.

1- يرجى اختيار المستوى الحالي الذي يعكس مدى استخدامك لنظام التعلم الإلكتروني في جامعة الكويت.

- أستخدمه في كل موادي التدريسية ☐
- أستخدمه في بعض موادي التدريسية ☐
- لا أستخدمه في اي من موادي التدريسية ☐

2- هل التحقت باي دورات في التطوير المهني على نظام التعلم الإلكتروني في جامعة الكويت؟

☐ نعم ☐ لا

3- ماذا تستخدم كنظام للتعليم الإلكتروني في جامعة الكويت؟

☐ بلاك بورد ☐ نظام / تقنية اخرى، حدد تفاصيل ذلك: .....

الرجاء استخدام مقياس التصنيف التالي للإشارة إلى ردكم:

5 = أوافق بشدة مع المعنى المقصود
4 = أوافق مع المعنى المقصود.
3 = لا أتفق أو أختلف مع المعنى المقصود (محايد)
2 = لا أوافق مع المعنى المقصود.
1 = لا أوافق بشدة مع المعنى المقصود

رقم	السؤال	5 أوافق بشدة	4 أوافق	3 محايد	2 لا أوافق	1 لا أوافق بشدة
	إدراك الفائدة					
4	إن استخدام نظام التعلم الإلكتروني في التدريس يحسن من أداء وظيفتي	5	4	3	2	1
5	إن استخدام نظام التعلم الإلكتروني في التدريس يعزز فعالية وظيفتي	5	4	3	2	1
6	إن استخدام نظام التعلم الإلكتروني في التدريس يزيد من إنتاجيتي	5	4	3	2	1
7	إن استخدام نظام التعلم الإلكتروني في التدريس يسهل قيامي بعملي .	5	4	3	2	1
	إدراك سهولة الاستخدام					
8	أجد من السهل جعل نظام التعلم الإلكتروني ان يفعل ما اريده أن يفعل	5	4	3	2	1
9	التفاعل مع نظام التعلم الإلكتروني واضح ومفهوم	5	4	3	2	1
10	التفاعل مع نظام التعلم الإلكتروني غير معقد	5	4	3	2	1
11	إن نظام التعليم الإلكتروني مرن في التفاعل معه	5	4	3	2	1
12	أجد نظام التعليم الإلكتروني سهل الاستخدام.	5	4	3	2	1

رقم	السؤال	5 أوافق بشدة	4 أوافق	3 محايد	2 لا أوافق	1 لا أوافق بشدة
	الموقف من التعليم الإلكتروني					
13	إن استخدام نظام التعلم الإلكتروني يجعل عملي ممتع	5	4	3	2	1
14	أنا أحب استخدام نظام التعلم الإلكتروني.	5	4	3	2	1
15	نظام التعليم الإلكتروني مفيد.	5	4	3	2	1
16	نظام التعليم الإلكتروني يجعل عملي أكثر إثارة للاهتمام .	5	4	3	2	1
17	إني أتتطلع إلى تلك الجوانب من وظيفتي التي تتطلب مني استخدام نظام التعلم الإلكتروني.	5	4	3	2	1
	العزم على الاستخدام					
18	إني أنوي استخدام نظام التعلم الإلكتروني في التدريس.	5	4	3	2	1
19	إن نظام التعلم الإلكتروني جدير بالاستخدام.	5	4	3	2	1
20	أخطط لعدم إستخدام نظام التعلم الإلكتروني في أي من مواد تدريسي	5	4	3	2	1
21	أخطط لاستخدام نظام التعلم الإلكتروني في بعض من مواد تدريسي.	5	4	3	2	1
22	أخطط لاستخدام نظام التعلم الإلكتروني في جميع مواد تدريسي.	5	4	3	2	1
23	أنوي استخدام نظام التعلم الإلكتروني لتحسين تدريسي	5	4	3	2	1
24	في المستقبل، أعتزم أن أزيد من استخدام نظام التعلم الإلكتروني في التدريس.	5	4	3	2	1
	الكفاءة الذاتية لاستخدام الكمبيوتر					
25	اشعر بالراحة عند استخدام أجهزة الكمبيوتر لعمل مهام التعليم الإلكتروني.	5	4	3	2	1
26	أتمكن من إكمال مهام التعلم الإلكتروني باستخدام أجهزة الكمبيوتر عند رؤية شخص آخر يقوم بنفس المهام بشكل فعال.	5	4	3	2	1
27	أتمكن من إكمال مهام التعلم الإلكتروني باستخدام أجهزة الكمبيوتر لو أني استخدمت نظام مماثل من قبل للقيام بنفس المهام.	5	4	3	2	1
28	يمكنني إكمال مهام التعلم الإلكتروني باستخدام أجهزة الكمبيوتر إذا كان لدي دليل النظام / التعليمات التوجيهية كمرجع.	5	4	3	2	1
29	يمكنني إكمال مهام التعلم الإلكتروني باستخدام أجهزة الكمبيوتر حتى لو لم استخدم نظام مثيل من قبل .	5	4	3	2	1
	الخبرة السابقة					
30	لقد كانت لي تجارب جيدة في استخدام نظام التعلم الإلكتروني لأغراض التدريس	5	4	3	2	1
31	إن لدي خبرة جيدة في استخدام برامج عامة (مثل برنامج معالج الكلمات , برنامج جداول البيانات ، وبرنامج العرض) مما يجعل نظام التعلم الإلكتروني سهل الاستخدام.	5	4	3	2	1
32	إن لدي تجارب جيدة جعلت من نظام التعلم الإلكتروني سهل الاستخدام.	5	4	3	2	1
33	إن لدي تجارب جيدة في استخدام نظام التعلم الإلكتروني مما حسن من جودة عملي.	5	4	3	2	1
34	إن لدي تجارب جيدة في استخدام نظام التعلم الإلكتروني مما زاد من انتاجيتي.	5	4	3	2	1

رقم	السؤال	5 أوافق بشدة	4 أوافق	3 محايد	2 لا أوافق	1 لا أوافق بشدة
35	إن لدي تجارب جيدة في استخدام نظام التعلم الإلكتروني مما حسن من مستوي الوظيفتي.	5	4	3	2	1

العلاقة مع الوظيفة

36	أنا أعتبر نظام التعلم الإلكتروني مهم لوظيفتي.	5	4	3	2	1
37	أنا أعتبرأن هناك حاجة لنظام التعلم الإلكتروني ضمن وظيفتي.	5	4	3	2	1
38	أنا أعتبر نظام التعلم الإلكتروني جزء اساسي من وظيفتي.	5	4	3	2	1
39	أنا أعتبر نظام التعليم الإلكتروني ضروري لوظيفتي.	5	4	3	2	1
40	إن استخدام نظام التعليم الإلكتروني يزيد من مستوى التحدي في وظيفتي.	5	4	3	2	1
41	إن استخدام نظام التعلم الإلكتروني يجعل وظيفتي سهلة.	5	4	3	2	1

التطوير الوظيفي

42	إن التدريب الذي تلقيته من السهل تطبيقه في فصولي.	5	4	3	2	1
43	أشعر بأني تدربت بشكل كافي على المهارات الضرورية لاستخدام نظام التعليم الإلكتروني.	5	4	3	2	1
44	لقد كانت لدي الفرصة الكافية لمشاركة دروس في التكنولوجيا مع زملائي المعلمين.	5	4	3	2	1
45	إن التدريب الذي تلقيته على نظام التعليم الإلكتروني يعزز من قدرتي المهنية لاكمال المهام التعليمية ذات الصلة.	5	4	3	2	1
46	إن التدريب الذي تلقيته على نظام التعليم الإلكتروني يزيد التنوع في وظيفتي.	5	4	3	2	1
47	إن التدريب الذي تلقيته على نظام التعليم الإلكتروني يزيد لي الأمان الوظيفي.	5	4	3	2	1

التركيز الاستراتيجي للجامعة

48	أن الجامعة قد تطلب من جميع المعلمين استخدام نظام التعليم الإلكتروني في المستقبل.	5	4	3	2	1
49	أنا أعتقد أن هناك سياسة للجامعة لتشجيع استخدام نظام التعلم الإلكتروني.	5	4	3	2	1
50	إن استخدام نظام التعلم الإلكتروني في تدريسي يتوافق مع سياسة الجامعة.	5	4	3	2	1
51	إن استخدام نظام التعلم الإلكتروني في تدريسي يبرر الأموال التي تنفقها الجامعة على النظام.	5	4	3	2	1

جودة النظام

52	يسمح لي نظام التعليم الإلكتروني السيطرة على أنشطتي التدريسية.	5	4	3	2	1
53	يوفر نظام التعليم الإلكتروني المرونة فيما يتعلق بزمان ومكان الاستخدام.	5	4	3	2	1
54	يوفر نظام التعلم الإلكتروني الوظائف التي احتاجها للقيام بأنشطة التدريس بنجاح.	5	4	3	2	1
55	إن لدي البرمجيات والامكانيات المناسبة والكافية على جهاز الكمبيوتر الشخصي لاستخدام نظام التعلم الإلكتروني.	5	4	3	2	1

رقم	السؤال	5 أوافق بشدة	4 أوافق	3 محايد	2 لا أوافق	1 لا أوافق بشدة
56	يمكنني الدخول بسهولة إلى نظام التعلم الإلكتروني في أي وقت احتاج لاستخدامه.	5	4	3	2	1
57	إن واجهة المستخدم لدى نظام التعلم الإلكتروني مصممة تصميما جيدا.	5	4	3	2	1
58	إن نظام التعلم الإلكتروني جدير بالثقة.	5	4	3	2	1

الدعم الفني

59	يوجد مكتب المساعدة متاح لي عندما أواجه مشكلة تقنية.	5	4	3	2	1
60	يمكنني الوصول إلى الدعم الفني لنظام لتعلم الإلكتروني عندما أحتاج إليه.	5	4	3	2	1
61	أنا أعتقد بأن موظفي الدعم الفني لنظام لتعلم الإلكتروني مؤهلين تأهيلاً عالياً في حل المشاكل التقنية .	5	4	3	2	1
62	أن الدعم التقني لنظام التعلم الإلكتروني الذي تقدمه الجامعة يحسن من تدريسي.	5	4	3	2	1
63	أن الدعم التقني لنظام التعلم الإلكتروني الذي تقدمه الجامعة يزيد من انتاجيتي.	5	4	3	2	1
64	أن الدعم التقني لنظام التعلم الإلكتروني الذي تقدمه الجامعة يجعل النظام أكثر فاعلية.	5	4	3	2	1

شكراً لمساهمتك في انجاح هذا العمل

Appendix - A3 – Semi-Structured Interview Records

Qualitative Data Analysis - Semi-Structured Interviews

Appendix - A3

Interview Questions	Responses		Code	Theme
Interviewee 1: **Department of English Administration, Kuwait University**				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	Because the option to use the e-learning is left to the instructor, the usage of the system is low. So I think **"Kuwait University need to make this usage compulsory in order to increase system utilization".**	"Kuwait University need to make this usage **compulsory** in order to increase system utilization"	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	No	No pressure to use e-learning	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	I don't think there is a clear strategic policy and if they have it an issue of completing KU image as promotor of new technology such as e-learning.	I don't think there is a **clear** strategic policy	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
4. What Kuwait University can do to encourage more e-learning participation from instructors?	Kuwait University must provide incentives promotional and give financial incentive for using e-learning	Kuwait University must provide incentives promotional and give financial incentive for using e-learning	Reward	Theme 3: Reward system
5. Please list any factors that would motivate your instructors to participate in e-learning	providing training and workshops to motivate the instructors to use the system.	providing **training and workshops to motivate** the instructors to use the system	Train	Theme 2: Awareness sessions, workshops and training on e-learning
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	1- The age, the older are less to use the system from the young ones. 2- The subject if it is not taught in electronic way.	The age, the older are less to use the system from the young ones	Age	Theme 5: Instructor age
		The subject if it is not taught in electronic way	Subject	Theme 9: Attitude toward e-learning
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	Yes, there is.	Yes, there is a plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University	Train	Theme 2: Awareness sessions, workshops and training on e-learning

Interview Questions	Responses		Code	Theme
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	Yes. They should	Yes. KU should reward faculty differently based on their involvement with e-learning	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	No			
Interviewee 2: **Department of Health Information Administration, Faculty of Allied Health Sciences, Kuwait University**. A user of e-learning since 2006, using Moodle System.				
What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	I think Kuwait University need to encourage instructors to use the latest technology such as e-learning for students. To do that, they need to do the following: • Explain more clearly the international trends toward using e-learning in Modern Education	Publicity and **Marketing** for the **e-learning concept** through the different **Media** such as Websites, TV, Instagram, etc.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		Give **workshops to introduce e-learning** to instructors	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		The CDL department need to visit each college on regular basis and provide them with workshops, seminars, lectures, etc. regarding e-learning	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		The benefits and advantages of using e-learning must be stressed by the KU administration	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		Use a reward system for Instructors who are currently using the e-learning system	Reward	Theme 3: Reward system
		Use the Instructors who currently use e-learning to share their experience with none users	Train	Theme 2: Awareness sessions, workshops and training on e-learning

Interview Questions	Responses		Code	Theme
Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	• There is no pressure on instructors to use e-learning. • I think this is why e-learning is not popular among our instructors, because there is no pressure of using it.	no pressure to use e-learning system	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	I don't think there is a clear strategic policy on introduction of e-learning by Kuwait University. As least, I don't know if they do have one.	I don't think there is a **clear** strategic policy on introduction of e-learning by Kuwait University. As least, I don't know if they do have one.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
4. What Kuwait University can do to encourage more e-learning participation from instructors?	• Talk about advantages of using e-learning • Discuss e-learning on a larger scale to all faculties • Put a clear plan with a target date to make using e-learning as part of the instructors' activities. • Provide incentives to use e-learning, give more credit to those who use e-learning than those who doesn't. For example, for those who use e-learning, they may have a priority for research funds, or a priority to go on scientific missions, or even give financial incentive.	Discuss e-learning on a larger scale to all faculties	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		Put a clear plan with a target date to make using e-learning as part of the instructors' activities	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
		Provide incentives to use e-learning, give more credit to those who use e-learning than those who doesn't. For example, for those who use e-learning, they may have a priority for research funds, or a priority to go on scientific missions, or even give financial incentive.	Reward	Theme 3: Reward system
5. Please list any factors that would motivate your instructors to participate in e-learning	• Providing Hotline for help, to help the users with immediate instructions, maintenance, and trouble shooting. • Explaining the benefits of e-learning for educators with providing also hands-on training. • Easiness of using the e-learning technology will motivate the instructors to use the system. The easier the system to use, more instructors will be willing to use it.	Providing Hotline for help, to help the users with immediate instructions, maintenance, and trouble shooting.	TS	Theme 4: Technical Support for e-learning system
		Explaining the benefits of e-learning for educators with providing also hands-on training.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		Easiness of using the e-learning technology will motivate the instructors to use the system. The easier the system to use, more instructors will be willing to use it.	Design	Theme 6: E-learning system design

Interview Questions	Responses		Code	Theme
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	• Instructor's High Teaching Load which makes him very stressed teaching than being creative in teaching style. He will be worried about his teaching load and not on the quality of teaching. • Complexity of the e-learning system will push instructor away from using the technology • Not having Technical knowledge on how to use e-learning and afraid of being recognized that they don't know about technology • The fear of putting their teaching material such as lectures, slides, etc...., they are afraid that their material will be abused by other users. • Privacy and confidentiality are issues that the instructors will be worried about. • No Help-line for the instructors at their comfort time. Maybe the Helpline is available but not after working hours.	Instructor's High Teaching Load which makes him very stressed teaching than being creative in teaching style. He will be worried about his teaching load and not on the quality of teaching.	Load	Theme 7: Instructor workload
		Complexity of the e-learning system will push instructor away from using the technology	Design	Theme 6: E-learning system design
		Not having Technical knowledge on how to use e-learning and afraid of being recognized that they don't know about technology	Readiness	Theme 8: Instructor's Technology readiness
		The fear of putting their teaching material such as lectures, slides, etc...., they are afraid that their material will be abused by other users. Privacy and confidentiality are issues that the instructors will be worried about	Design	Theme 6: E-learning system design
		No Help-line for the instructors at their comfort time. Maybe the Helpline is available but not after working hours	TS	Theme 4: Technical Support for e-learning system
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	I have no idea. But 4 years ago, there were seminars given by the CDL department at KU to encourage using the Blackboard, but I don't know if they still have CDL.	I have no idea. But 4 years ago, there were seminars given by the CDL department at KU to encourage using the Blackboard, but I don't know if they still have CDL.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	• I think they should have such system. A Reward system always provides competitive environment among Instructors and encourage them to use e-learning. • Teaching by using technology takes lots of time of preparation, therefore, having a reward system would really be appreciated. • Traditional teaching, although it needs preparation, but not as much as teaching using e-learning.	• I think they should have such system. A Reward system always provides competitive environment among Instructors and encourage them to use e-learning. • Teaching by using technology takes lots of time of preparation, therefore, having a reward system would really be appreciated. • Traditional teaching, although it needs preparation, but not as much as teaching using e-learning.	Reward	Theme 3: Reward system

Interview Questions	Responses		Code	Theme
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	• I think Kuwait University should support any type of e-learning systems available. For example, the KU are forcing the use of a blackboard system. However, because all faculties are using it through one server which cause the server to be slow and always busy, • The KU should provide each college with their own server supported with Blackboard to relieve the congestion of using the Central server.	• I think Kuwait University should support any type of e-learning systems available. For example, the KU are forcing the use of a blackboard system. However, because all faculties are using it through one server which cause the server to be slow and always busy, • The KU should provide each college with their own server supported with Blackboard to relieve the congestion of using the Central server.	Design	Theme 6: E-learning system design
Interviewee 3: **Department of social sciences Administration**.				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	It is needed to make evolution in the concept of the new education level, to be as a model used for university.	It is needed to make evolution in the concept of the new education level, to be as a model used for university.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	No	no load	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	It's not very clear, we have some e-learning classes, but I think it depend on the instructor if he likes to take part in it.	It's not very **clear**, we have some e-learning classes, but I think it depend on the instructor if he likes to take part in it.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
4. What Kuwait University can do to encourage more e-learning participation from instructors?	• The culture of e-learning need to be a part of the education system, as Amman part of this process. • Reduce the load work from the instructor to have time to be part of it • Sent the instructor to attend a classes and workshop in e-learning and then they must apply what they learn in their classes	The culture of e-learning need to be a part of the education system, as Amman part of this process	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
		Reduce the load work from the instructor to have time to be part of it	Load	Theme 7: Instructor workload
		Sent the instructor to attend a classes and workshop in e-learning and then they must apply what they learn in their classes	Train	Theme 2: Awareness sessions, workshops and training on e-learning

Qualitative Data Analysis - Semi-Structured Interviews

Appendix - A3

Interview Questions	Responses		Code	Theme
5. Please list any factors that would motivate your instructors to participate in e-learning	Using e-learning is a part of promoting the instructors Reward the instructors that used the e-learning system.	Using e-learning is a part of promoting the instructors Reward the instructors that used the e-learning system.	Reward	Theme 3: Reward system
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	The e-learning system is diffecult for the instructors learn it, the system must be easy to encourage the instructors to use it.	The e-learning system is diffecult for the instructors learn it, the system must be easy to encourage the instructors to use it.	Design	Theme 6: E-learning system design
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	In our department, we have a number of workshops for our instructors.	In our department, we have a number of workshops for our instructors.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	Yes, they should		Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	No			
Interviewee 4: **Department Education and Practical Centre of education college**				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	Kuwait University should conduct training courses on e-learning for instructors to attend on non-compulsory basis. Also, KU to conduct awareness sessions to introduce e-learning to instructors.	Kuwait University should conduct training courses on e-learning for instructors to attend on non-compulsory basis. Also, KU to conduct awareness sessions to introduce e-learning to instructors.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	The answer is Yes, there is a pressure from the working environment which does not allow instructors to be involved in e-learning more positively. Also, there are a considerable number of instructors with high number of years on the job and too old to feel enthusiastic toward implementing such technological initiative and consider it as complicated.	Yes, there is a pressure on the instructor from the working environment which does not allow instructors to be involved in e-learning more positively	Load	Theme 7: Instructor workload
		there are a considerable number of instructors with high number of years on the job and too old to feel enthusiastic toward implementing such technological initiative and consider it as complicated	Age	Theme 5: Instructor age

Qualitative Data Analysis - Semi-Structured Interviews

Appendix - A3

Interview Questions	Responses		Code	Theme
3. What is Kuwait University strategic policy on the introduction of eLearning?	KU considers e-learning as a mean and as a support to provide a distinguished education. However, KU has outdated classrooms which can not accommodate e-learning, beside limited servers that can support the infrastructure required by e-learning.	KU considers e-learning as a mean and as a support to provide a distinguished education	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
		However, KU has outdated classrooms which can not accommodate e-learning, beside limited servers that can support the infrastructure required by e-learning	TS	Theme 4: Technical Support for e-learning system
4. What Kuwait University can do to encourage more e-learning participation from instructors?	There should be motivations to encourage instructors to use e-learning. Also, minimum technological knowledge should be part of mandatory requirement to employ instructors, as well to have workshops to explain e-learning technology.	There should be motivations to encourage instructors to use e-learning	Reward	Theme 3: Reward system
		minimum technological knowledge should be part of mandatory requirement to employ instructors	Readiness	Theme 8: Instructor's Technology readiness
		to have workshops to explain e-learning technology	Train	Theme 2: Awareness sessions, workshops and training on e-learning
5. Please list any factors that would motivate your instructors to participate in e-learning	• A Reward system always provides competitive environment among Instructors motivated them to use e-learning • Use the Instructors who currently use e-learning to share their experience with none users. • those who use e-learning, they may have a priority for research funds, or a priority to go on scientific missions, or even give financial incentive.	A Reward system always provides competitive environment among Instructors motivated them to use e-learning, ..., those who use e-learning, they may have a priority for research funds, or a priority to go on scientific missions, or even give financial incentive.	Reward	Theme 3: Reward system
		Use the Instructors who currently use e-learning to share their experience with none users	Train	Theme 2: Awareness sessions, workshops and training on e-learning
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	• The continues of using the traditional teaching without allowing the involve the technology in teaching • IT support with e-learning system.	lack of IT support with e-learning system could inhibit instructor's participation	TS	Theme 4: Technical Support for e-learning system
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	CDL department at KU to encourage using the Blackboard, there is seminars but I don't think CDL's not enough for encouraging the instructor to using the system.	CDL department at KU to encourage using the Blackboard, there is seminars but I don't think CDL's not enough for encouraging the instructor to using the system.	Train	Theme 2: Awareness sessions, workshops and training on e-learning

Interview Questions	Responses		Code	Theme
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	• A Reward system must provide among the Instructors for encouraging them to use e-learning. • a reward for the best user for system.	• A Reward system must be provided to the Instructors for encouraging them to use e-learning. • a reward for the best user for system.	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	No			
Interviewee 5: **Department of Training Consultancies, Kuwait University**.				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	To promote awareness of e-learning by using media, conduct training sessions and workshops, to facilitate learning material into e-learning content and increase e-learning specialized staff.	To promote awareness of e-learning by using media, conduct training sessions and workshops	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		to facilitate learning material into e-learning content and increase e-learning specialized staff	TS	Theme 4: Technical Support for e-learning system
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	No	no pressure to use the system	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	There should be a policy, however it should be clear. KU strategy policy should be to expand implementation of e-learning, encourage instructors to use it, create labs and provide suitable new equipment.	There should be a policy, however it should be **clear**. KU strategy policy should be to expand implementation of e-learning, encourage instructors to use it, create labs and provide suitable new equipment.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
4. What Kuwait University can do to encourage more e-learning participation from instructors?	to explain the advantages and benefit of using e-learning to instructors, such as: □ It saves the time in exams correction. □ Reducing the possibility of cheating in the exams. □ Facilitate the process of attendance and the absent □ Save instructor's effort.	awareness campaign to explain the advantages and benefit of using e-learning to instructors	Train	Theme 2: Awareness sessions, workshops and training on e-learning

Interview Questions	Responses		Code	Theme
5. Please list any factors that would motivate your instructors to participate in e-learning	• Providing Hotline for help, to help the users with immediate instructions, maintenance, and trouble shooting. • priority in promotion is given to instructors using e-learning • provide qualified e-learning technicians • Explaining the benefits of e-learning for instructors by providing hands-on training. • Easiness of using the e-learning technology will motivate the instructors to use the system. The easier the system to use, more instructors will be willing to use it.	Providing Hotline for help, to help the users with immediate instructions, maintenance, and trouble shooting, ..., provide qualified e-learning technicians	TS	Theme 4: Technical Support for e-learning system
		priority in promotion is given to instructors using e-learning	Reward	Theme 3: Reward system
		Explaining the benefits of e-learning for instructors by providing hands-on training.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		Easiness of using the e-learning technology will motivate the instructors to use the system. The easier the system to use, more instructors will be willing to use it	Design	Theme 6: E-learning system design
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	• Instructor's High Teaching Load which makes him very stressed teaching than being creative in teaching style. He will be worried about his teaching load and not on the quality of teaching. • Complexity of the e-learning system will push instructor away from using the technology • Not having Technical knowledge on how to use e-learning and afraid of being recognized that they don't know about technology • The fear of putting their teaching material such as lectures, slides, etc…., they are afraid that their material will be abused by other users. • Privacy and confidentiality are issues that the instructors will be worried about. • No Help-line for the instructors at their comfort time. Maybe the Helpline is available but not after working hours.	Instructor's High Teaching Load which makes him very stressed teaching than being creative in teaching style. He will be worried about his teaching load and not on the quality of teaching.	Load	Theme 7: Instructor workload
		Complexity of the e-learning system will push instructor away from using the technology. The fear of putting their teaching material such as lectures, slides, etc...., they are afraid that their material will be abused by other users. Privacy and confidentiality are issues that the instructors will be worried about	Design	Theme 6: E-learning system design
		Not having Technical knowledge on how to use e-learning and afraid of being recognized that they don't know about technology	Readiness	Theme 8: Instructor's Technology readiness
		No Help-line for the instructors at their comfort time. Maybe the Helpline is available but not after working hours	TS	Theme 4: Technical Support for e-learning system
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	I have no idea. But 4 years ago, there were seminars given by the CDL department at KU to encourage using the Blackboard, but I don't know if they still have CDL.	I have no idea. But 4 years ago, there were seminars given by the CDL department at KU to encourage using the Blackboard, but I don't know if they still have CDL.	Train	Theme 2: Awareness sessions, workshops and training on e-learning

Interview Questions	Responses		Code	Theme
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	• I think they should have such system. A Reward system always provides competitive environment among Instructors and encourage them to use e-learning. • Teaching by using technology takes lots of time of preparation, therefore, having a reward system would really be appreciated. • Traditional teaching, although it needs preparation, but not as much as teaching using e-learning.	• I think they should have such system. A Reward system always provides competitive environment among Instructors and encourage them to use e-learning. • Teaching by using technology takes lots of time of preparation, therefore, having a reward system would really be appreciated. • Traditional teaching, although it needs preparation, but not as much as teaching using e-learning.	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	• I think Kuwait University should support the blackboard system by improving the infrastructure with separate computer server for each college.	• I think Kuwait University should support the blackboard system by improving the infrastructure with separate computer server for each college.	TS	Theme 4: Technical Support for e-learning system
Interviewee 6: **Department of Engineering , Kuwait University**., using Online Course System (OCS).				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	The department of engineering has its own e-learning system which is financed by the department budget. Kuwait University should promote e-learning system in social media for instructors and students to use it. Also, we encourage our instructors through our awarding system and I believe KU should adopt similar system. KU IT Department should support the system more effectively, otherwise it would be difficult for the instructor to cope with it. In our department, we share experience among instructors and often conduct workshops to increase awareness.	The department of engineering has its own e-learning system which is financed by the department budget. Kuwait University should promote e-learning system in social media for instructors and students to use it. We share experience among instructors and often conduct workshops to increase awareness.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		we encourage our instructors through our awarding system and I believe KU should adopt similar system	Reward	Theme 3: Reward system
		KU IT Department should support the system more effectively, otherwise it would be difficult for the instructor to cope with it	TS	Theme 4: Technical Support for e-learning system
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	There is nothing that pressurize the instructors to use e-learning.	There is nothing that pressurize the instructors to use e-learning.	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	I don't think there is a clear strategic policy on the introduction of e-learning by Kuwait University. As least, I think is an old system and there no update for the system.thats why we use our own system the OCS.	I don't think there is a **clear** strategic policy on the introduction of e-learning by Kuwait University	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning

Qualitative Data Analysis - Semi-Structured Interviews

Appendix - A3

Interview Questions	Responses		Code	Theme
		I think is an old system and there no update for the system.thats why we use our own system the OCS.	TS	Theme 4: Technical Support for e-learning system
4. What Kuwait University can do to encourage more e-learning participation from instructors?	• Campaign about advantages of using e-learning and discuss e-learning on a larger scale to all faculties • Have the e-learning system in KU yearly plan so it become integral part of instructors' daily activities. • Provide incentives through a reward system that returns benefits to the e-learning users such as a priority of research funds or to go on study trips or even give financial benefits.	Campaign about advantages of using e-learning and discuss e-learning on a larger scale to all faculties	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		Have the e-learning system in KU yearly plan so it become integral part of instructors' daily activities	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
		Provide incentives through a reward system that returns benefits to the e-learning users such as a priority of research funds or to go on study trips or even give financial benefits.	Reward	Theme 3: Reward system
5. Please list any factors that would motivate your instructors to participate in e-learning	• Providing proper technical support to help the users with immediate needs. • conduct awareness campaign to explaining the system benefits and provide hands-on training. • improve system complexicity and user interface.	Providing proper technical support to help the users with immediate needs.	TS	Theme 4: Technical Support for e-learning system
		conduct awareness campaign to explaining the system benefits and provide hands-on training	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		improve system complexicity and user interface.	Design	Theme 6: E-learning system design
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	• I think the age of the instructor is a main issue, the instructors over 50 are usually prefer their tradition way of teaching rather than the using e-learning and they see it difficult to use or to learn. • Furthermore, its have no benefit for their career or job security.	I think the age of the instructor is a main issue, the instructors over 50 are usually prefer their tradition way of teaching rather than the using e-learning and they see it difficult to use or to learn while it does not add any benefit for their career or job security.	Age	Theme 5: Instructor age

Interview Questions	Responses		Code	Theme
	• System complexity may push some instructor away from using the technology • Not having Technical knowledge on how to use e-learning and afraid of being recognized that they don't know about technology • Privacy might be an issue. They fear over their content security in the system and afraid the material will be abused by other users. • No helpline for the instructors.	System complexity may push some instructor away from using the technology… Privacy might be an issue. They fear over their content security in the system and afraid the material will be abused by other users.	Design	Theme 6: E-learning system design
		No helpline for the instructors	TS	Theme 4: Technical Support for e-learning system
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	There are seminars and workshops given by our department. we encourage them to use the OCS, and our faculty most of the usage and graduated from western country so they have a good background of using such system, but I don't know if they still have it.	There are seminars and workshops given by our department. we encourage them to use the OCS	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		our faculty most of the usage and graduated from western country so they have a good background of using such system	Readiness	Theme 8: Instructor's Technology readiness
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	• A Reward system always provides a competitive environment among Instructors and encourage them to use e-learning. • Teaching by using technology takes lots of time of preparation, therefore, having a reward system would really be appreciated. • Our department reward the instructor that have all his courses online and we but his name in our department as the best of our faculty.	• A Reward system always provides a competitive environment among Instructors and encourage them to use e-learning. • Teaching by using technology takes lots of time of preparation, therefore, having a reward system would really be appreciated. • Our department reward the instructor that have all his courses online and we but his name in our department as the best of our faculty.	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	• I think Kuwait University should support any type of e-learning systems available. • The KU must upgrade their system and makes a plan to avail all the factors that lead to the success of the system.	KU must upgrade their system and makes a plan to avail all the factors that lead to the success of the system	TS	Theme 4: Technical Support for e-learning system

Interview Questions	Responses		Code	Theme
Interviewee 7: Centre **Distance E-Learning (CDL), Kuwait University**.				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	KU to provide mechanism for an academic incentive when e-learning is used by the instructors. KU high administration should enforce e-learning as a mandatory mean of teaching.	KU to provide mechanism for an academic incentive when e-learning is used by the instructors	Reward	Theme 3: Reward system
		KU high administration should enforce e-learning as a **mandatory** mean of teaching.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	Yes, because of the workload. I need more time to focus on the online courses and to activate them, they take effort and extra time.	Yes, because of the workload. I need more time to focus on the online courses and to activate them, they take effort and extra time.	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	There is no clear policy for e-learning	There is no **clear** policy for e-learning	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
4. What Kuwait University can do to encourage more e-learning participation from instructors?	To enhance instructor career when using the system.	To enhance instructor career when using the system.	Reward	Theme 3: Reward system
5. Please list any factors that would motivate your instructors to participate in e-learning	To use job promotion as a motivation for participation and go to workshops abroad.	To use job promotion as a motivation for participation and go to workshops abroad.	Reward	Theme 3: Reward system
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	1-There is no workshop for introduce the e-learning system in KU 2- The instructors don't see the e-learning supporting the learning process therefore, they do not consider it important.	There is no workshop for introduce the e-learning system in KU	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		The instructors don't see the e-learning supporting the learning process therefore, they do not consider it important.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning

Interview Questions	Responses		Code	Theme
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	Recently, there is no seminars and workshop I have heard about it.	Recently, there is no seminars and workshop I have heard about it.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	No, they shouldn't be rewarded, the e-learning system should be part of the learning process	No, they shouldn't be rewarded, the e-learning system should be part of the learning process	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	No			
Interviewee 8: **Department of College of Computer Science and Engineering, Faculty of Allied Health Sc of Computer Science, Kuwait University**, (using Bb System).				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	Kuwait University should encourage instructors to use the e-learning by giving them the right training at the beginning. CDL should do the training and conduct workshops and conferences regarding the latest e-learning technology. It is important that instructors should be recognized for their contribution in e-learning culture within the department. we use Blackboard system in our department which is a good system and KU should recognize the departments at Kuwait University level for their use of e-learning.	Kuwait University should encourage instructors to use the e-learning by giving them the right training at the beginning. CDL should do the training and conduct workshops and conferences regarding the latest e-learning technology	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		It is important that instructors should be recognized for their contribution in e-learning culture within the department.KU should recognize the departments at Kuwait University level for their use of e-learning	Reward	Theme 3: Reward system
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	• There is no pressure on instructors to use e-learning. • I think this is why e-learning is not popular among our instructors, because there is no pressure of using it.	No pressure to use e-learning	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	I don't think there is a clear strategic policy on introduction of e-learning by Kuwait University. As least, I don't know if they do have one.	I don't think there is a **clear** strategic policy on introduction of e-learning by Kuwait University. As least, I don't know if they do have one.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
4. What Kuwait University can do to encourage more e-learning participation from instructors?	• Increase awareness of the e-learning system features and benefit should be explained to department faculty. • Have an enrolment plan ensuring full implementation by all instructors. • Provide incentives to use e-learning	Increase awareness of the e-learning system features and benefit should be explained to department faculty.	Train	Theme 2: Awareness sessions, workshops and training on e-learning

Interview Questions	Responses		Code	Theme
	• Provide incentives to use e-learning.	Have an enrolment plan ensuring full implementation by all instructors.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
		Provide incentives to use e-learning.	Reward	Theme 3: Reward system
5. Please list any factors that would motivate your instructors to participate in e-learning	• Providing prompt help the users when needed. • Explaining the benefits of e-learning to instructors and give them proper hands-on training. • Provide easier system to handle with less complexity	Providing prompt help the users when needed	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		Explaining the benefits of e-learning to instructors and give them proper hands-on training	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		Provide easier system to handle with less complexity	Design	Theme 6: E-learning system design
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	• Instructor's High Teaching Load makes him very stressful. He will be worried about his teaching load rather than the quality of teaching style. • System complexity will demotivate the instructor from using the technology • Not being competant in using the Technical or recognized by collegues as less knowledgable might demotivate instructor participation. • Afraid of maintaining the teaching material in the system would subject them to lost or corruption. Hence, high privacy and confidentiality risk. • Proper Technical Support is not provided.	Instructor's High Teaching Load makes him very stressful. He will be worried about his teaching load rather than the quality of teaching style	Load	Theme 7: Instructor workload
		System complexity will demotivate the instructor from using the technology. Afraid of maintaining the teaching material in the system would subject them to lost or corruption. Hence, high privacy and confidentiality risk.	Design	Theme 6: E-learning system design
		Not being competant in using the Technical or recognized by collegues as less knowledgable might demotivate instructor participation.	Readiness	Theme 8: Instructor's Technology readiness
		Proper Technical Support is not provided.	TS	Theme 4: Technical Support for e-learning system
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	I have no idea. But 4 years ago, there were seminars given by the CDL department at KU to encourage using the Blackboard, but I don't know if they still have CDL.	I have no idea. But 4 years ago, there were seminars given by the CDL department at KU to encourage using the Blackboard, but I don't know if they still have CDL.	Train	Theme 2: Awareness sessions, workshops and training on e-learning

Interview Questions	Responses		Code	Theme
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	• I think they should have such system. A Reward system would motivate participation in using the system. • Using e-learning system takes lots of time of preparation and hence should be rewarded.	• I think they should have such system. A Reward system would motivate participation in using the system. • Using e-learning system takes lots of time of preparation and hence should be rewarded.	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	• I think KU should support any type of e-learning selected by the department. However, if Blackboard system should only be used, they need to improve the network and server speed to all colleges.	• I think KU should support any type of e-learning selected by the department. However, if Blackboard system should only be used, they need to improve the network and server speed to all colleges.	TS	Theme 4: Technical Support for e-learning system
Interviewee 9: **Department Chemistry Administration, Kuwait University**.				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	• They need to have workshops. • The usage of e-learning its need from the instructor's time and effort, hence they need to be reward by Kuwait University high administration and using the system should be included in the evaluation criteria for career promotion.	They need to have workshops	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		The usage of e-learning its need from the instructor's time and effort, hence they need to be reward by Kuwait University high administration and using the system should be included in the evaluation criteria for career promotion	Reward	Theme 3: Reward system
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	Pressure from work load.	Pressure from work load.	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	There is no clear policy for e-learning	There is no **clear** policy for e-learning	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
4. What Kuwait University can do to encourage more e-learning participation from instructors?	Career promotion can be used to encourage participation in e-learning.	Career promotion can be used to encourage participation in e-learning.	Reward	Theme 3: Reward system
5. Please list any factors that would motivate your instructors to participate in e-learning	Promotion and external training can motivate instructors to use the e-learning system.	Promotion and external training can motivate instructors to use the e-learning system.	Reward	Theme 3: Reward system

Interview Questions	Responses		Code	Theme
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	1-There is no workshop for introduce the e-learning system in KU 2- The instructors view e-learning as an optional support to the learning process therefore, they do not give it an important value. 3- the lack of technical support from the KU.	There is no workshop for introduce the e-learning system in KU	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		The instructors view e-learning as an optional support to the learning process therefore, they do not give it an important value.	Attitude	Theme 9: Attitude toward e-learning
		lack of technical support from the KU	TS	Theme 4: Technical Support for e-learning system
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	No			
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	yes.	reward system should be given	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	No.			
Interviewee 10: Department of **Graduate Studies**.				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	1. Give workshops to introduce e-learning to instructors 2. provide them with training workshops.	1. Give workshops to introduce e-learning to instructors 2. provide them with training workshops.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	Yes, the pressure come from the workload, and the lack of the technical support.	pressure comes from the workload	Load	Theme 7: Instructor workload
		Pressure from lack of the technical support	TS	Theme 4: Technical Support for e-learning system
3. What is Kuwait University strategic policy on the introduction of eLearning?	There is a clear strategic policy on introduction of e-learning by Kuwait University.	There is a **clear** strategic policy on introduction of e-learning by Kuwait University.	Policy	Theme 3: Reward system

Interview Questions	Responses		Code	Theme
4. What Kuwait University can do to encourage more e-learning participation from instructors?	Reward those who use e-learning by giving more priority to research funds, training and financial benefit.	Reward those who use e-learning by giving more priority to research funds, training and financial benefit.	Reward	Theme 3: Reward system
5. Please list any factors that would motivate your instructors to participate in e-learning	Reword for the best user for e-learning system.	Reword for the best user for e-learning system.	Reward	Theme 3: Reward system
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	No Help-line for technical support Helpline is available but not after working hours.	No Helpline for the instructors at their convenient timing. Maybe the Helpline is available but not after working hours.	TS	Theme 4: Technical Support for e-learning system
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	There were seminars given by the CDL at KU to encourage using the Blackboard	There were seminars given by the CDL department at KU to encourage using the Blackboard	Train	Theme 2: Awareness sessions, workshops and training on e-learning
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	KU should throw a yearly reward for best use of e-learning.	KU should throw a yearly reward for best use of e-learning.	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	I think Kuwait University should support any type of e-learning systems available.	I think Kuwait University should support any type of e-learning systems available.	TS	Theme 4: Technical Support for e-learning system
Interviewee 11: **Department Diploma program of Kuwait University**.				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	The e-learning system must be compulsory It is must be the main system in KU	The e-learning system must be **compulsory** It is must be the main system in KU	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	No	no pressure to use the e-learning system	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	There is no clear strategic policy on the introduction of e-learning by Kuwait University.	There is no **clear** strategic policy on the introduction of e-learning by Kuwait University.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning

Qualitative Data Analysis - Semi-Structured Interviews

Appendix - A3

Interview Questions	Responses		Code	Theme
4. What Kuwait University can do to encourage more e-learning participation from instructors?	• Give more credit to those who use e-learning than those who doesn't. • The user of e-learning must have a priority for research funds, or a priority to go on scientific missions, or even give financial incentive.	• Give more credit to those who use e-learning than those who doesn't. • The user of e-learning must have a priority for research funds, or a priority to go on scientific missions, or even give financial incentive.	Reward	Theme 3: Reward system
5. Please list any factors that would motivate your instructors to participate in e-learning	• IT support , to help the users with immediate instructions. • Provide the workshop that explains to the instructors how to use the system. The easier the system to use, more instructors will be willing to use it.	IT support , to help the users with immediate instructions.	TS	Theme 4: Technical Support for e-learning system
		Provide the workshop that explains to the instructors how to use the system	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		The easier the system to use, more instructors will be willing to use it	Design	Theme 6: E-learning system design
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	• The environment in Kuwait university is not qualified to use such system • The instructors have no ability to use the backboard in their teaching because they have difficulty in dealing with such system.	The environment in Kuwait university is not qualified to use such system	Attitude	Theme 9: Attitude toward e-learning
		The instructors have no ability to use the backboard in their teaching because they have difficulty in dealing with such system	Design	Theme 6: E-learning system design
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	It is not clear and unplanned	It is not clear and unplanned awareness seminars, workshops and Training by KU	Train	Theme 2: Awareness sessions, workshops and training on e-learning
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	Yes, it should	there should be a reward system	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	I hope the Kuwait university makes the e-learning compulsory for all the instructors.	I hope the Kuwait university makes the e-learning **compulsory** for all the instructors.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning

Interview Questions	Responses		Code	Theme
Interviewee 12: **Information &Technology Unit, College of Social Science, Kuwait University**.				
1. What do you believe Kuwait University could do to get instructors to participate in e-learning in the future?	1. They have to force the instructors to use it. 2. They have to do a lot of workshop in e-learning (how to use the system, clarify the positives of the system) 3. In each college, they have to be one or two technical for the e-learning system(know how work, how to use it, must have an account as admin for the colleges instructors) to encourage them. 4. For new instructors, the dean or the head of the department must told him about the important of the e-learning.	They have to **force** the instructors **to use it**.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
		They have to do a lot of workshop in e-learning (how to use the system, clarify the positives of the system). For new instructors, the dean or the head of the department must told him about the important of the e-learning.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		In each college, they have to be one or two technical for the e-learning system(know how work, how to use it, must have an account as admin for the colleges instructors) to encourage them.	TS	Theme 4: Technical Support for e-learning system
		For new instructors, the Dean or the head of the department must tell him about the important of the e-learning	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
2. Do you believe there is pressure to involve instructors in e-learning? Yes ( ) No ( ) If yes, where do you believe this pressure comes from?	No.	No pressure to use the system	Load	Theme 7: Instructor workload
3. What is Kuwait University strategic policy on the introduction of eLearning?	I don't think there is a clear strategic policy of e-learning by Kuwait University.	I don't think there is a **clear** strategic policy of e-learning by Kuwait University.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning

Interview Questions	Responses		Code	Theme
4. What Kuwait University can do to encourage more e-learning participation from instructors?	1. Make yearly workshops. 2. Changing the interface. 3. Make a competition for best user. 4. Let the student evaluate the blackboard for their courses. 5. Add more features that encourage the instructor.	Make yearly workshops. Make a competition for best user. Let the student evaluate the blackboard for their courses.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
		Changing the interface. Add more features that encourage the instructor	Design	Theme 6: E-learning system design
5. Please list any factors that would motivate your instructors to participate in e-learning	Interface attraction, feature attraction, a technical team in in all the colleges that work only for e-learning system.	Interface attraction, feature attraction	Design	Theme 6: E-learning system design
		a technical team in in all the colleges that work only for e-learning system	TS	Theme 4: Technical Support for e-learning system
6. Please list any factors that you believe would inhibit your instructors from participating in e-learning	Some of the instructors don't have a computer skills. Most of the material is theoretical that can't teach by e-learning system.	Some of the instructors don't have a computer skills.	Readiness	Theme 8: Instructor's Technology readiness
		Most of the material is theoretical that can't teach by e-learning system	Subject	Theme 9: Attitude toward e-learning
7. Is there any plan on instructors participation in seminars and workshops on e-learning, sponsored by the Kuwait University?	No. I haven't seen a plan on conducting workshops on e-learning.	No. I haven't seen a plan on conducting workshops on e-learning.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
8. Should Kuwait University reward faculty differently based on their involvement with e-learning, than traditional teaching and research?	Yes, I think they should have a reward.	Yes, I think they should have a reward.	Reward	Theme 3: Reward system
9. Is there anything else you would like to share in the Kuwait University experience of e-learning?	1. The system selection and deciding on the system features should be done by competent engineers 2. They have a team in each college to support the system. 3. Change to user interface and it should be more easy to both student and the instructors.	The system selection and deciding on the system features should be done by competent engineers. Change to user interface and it should be more easy to both student and the instructors.	Design	Theme 6: E-learning system design
		They have a team in each college to support the system	TS	Theme 4: Technical Support for e-learning system

Appendix - A4 – Un-structured Interviews Records

Quantitative Data Analysis - Unstructured Interviews

No.	Gender	Years of experience	College	Question: What do you think about e-learning system at Kuwait University?	Code	Theme
1	Female	3-5 yrs.	Art	I use e-learning in all my classes. I have no difficulty using it due to my previous experience during my PHD study in USA. I encourage the use of e-learning (Blackboard) system and find it supporting my work. Some of the students face difficulty using the system, however there is a general acceptance among them, may be because my subject is English Language.	attitude	Theme 9: Attitude toward e-learning
2	Female	6-10 Yrs.	Art	I use Moodle e-learning system rather than blackboard, because I find it more suitable for the material and easy to use, and I do not have to call IT to upload the material or students' names. IT do not answer my calls which makes it difficult to deal with them. I encourage using e-learning but I wish the Blackboard be more flexible to use.	TS	Theme 9: Attitude toward e-learning
3	male	5 -10 yrs.	Art	I have experience using e-learning from USA and I think we should deal with the system, however I have a problem with the students. They have no experience with e-learning and the subject being 'History', it does not motivate the use of e-learning. I use Blackboard system to help me with the material and for my use only, however I would like Kuwait University to make the use of e-learning mandatory.	Policy	Theme 9: Attitude toward e-learning
4	male	5 - 10 yrs.	Art	I use Blackboard e-learning system to prepare my material only. I find the student face difficulty using it due to their limited experience with the technology which narrowed their use. I wish Kuwait University enforce the use of e-learning on both instructors and students.	Policy	Theme 9: Attitude toward e-learning
5	Male	25 - 30 yrs.	Art	I do not see e-learning effective in Art subjects because they depends on books and instructor explanation. I believe the use of e-learning in my subject would make it difficult and un-beneficial to both the instructor and the student.	design	Theme 6: E-learning system design

Quantitative Data Analysis - Unstructured Interviews

No.	Gender	Years of experience	College	Question: What do you think about e-learning system at Kuwait University?	Code	Theme
6	Male	5 - 10 yrs.	Art	I like using e-learning and I use Blackboard. However, sometimes I find difficulty using it due to lack of system maintenance and network problems. I think the students would not use the system unless they are forced to use it. Personally, I used Blackboard during my PHD study and I found it easy to use, however I am disappointed with how Kuwait University manages the issue and the level of the students enrolled in KU which limit the use of e-learning.	TS	Theme 4: Technical Support for e-learning system
7	Male	10 - 15 yrs.	Art	I think using e-learning is suitable to my work and makes it easier. However, since Kuwait University does not mandate the use of e-learning in teaching, I use it for preparing the material only and not in teaching. Also, I find dealing with IT difficult and hard to communicate with them.	Policy	Theme 9: Attitude toward e-learning
8	Male	10 - 15 yrs.	Art	I think e-learning does not serve the learning material (Law), and it is hard to convert it to electronic material. You mentioned the present of discussion board in Blackboard, however I believe Law material depends on memorization rather discussion. No need for e-learning.	design	Theme 6: E-learning system design
9	Male	3-5 Yrs.	Art	I support the use of e-learning and the Blackboard system. I used it in USA during my PHD study, and found it easy to use. The students are attracted to the system and it helps them flourish in learning and practice. You can take my wife's opinion as well since we teach the same subject (English Language).	attitude	Theme 9: Attitude toward e-learning
10	Female	3- 5 yrs.	Art	I believe e-learning system support my work and makes it easier for the students. I find it easy to use and I recommend using it.	attitude	Theme 9: Attitude toward e-learning
11	Male	10 - 15 yrs.	Science	I use Blackboard in teaching and the I find no difficulty using it. The students use system and it helps them with the learning material. I think Kuwait University should make using the Blackboard system mandatory in all colleges and on all students.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning

Quantitative Data Analysis - Unstructured Interviews

No.	Gender	Years of experience	College	Question: What do you think about e-learning system at Kuwait University?	Code	Theme
12	Male	10 - 15 yrs.	Science	I encourage the use of Blackboard system, however sometimes I face difficulty with IT support to the system and the network. I find the students very cooperative and benefitting from the learning material on the system. I would use the system for teaching however I do not trust it when it comes to the exams. I conduct them normally and outside the system. I believe Kuwait University should make the use of the system mandatory.	design	Theme 6: E-learning system design
13	Female	10 - 15 yrs.	Art	I use e-learning in all my classes and I encourage others to use it. Sometimes the network goes down which effect the use of the system, however I find IT response to my calls adequately.	TS	Theme 4: Technical Support for e-learning system
14	Male	10 - 15 yrs.	Art	I use Blackboard system in all my classes. My students use it and they find no difficulty using it. I communicate with them over the system. I believe the use of the system should be mandatory.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
15	Male	5 - 10 yrs.	Science	I use Blackboard system and I find it suitable for my work. I find no difficulty using it and my student use it regularly. I believe the system is an important factor in teaching and it eases the learning process for both the instructor and the student. I support making the system mandatory in Kuwait University.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
16	Female	10 - 15 yrs.	Science	I use Moodle system. It makes my job easier and I find no difficulty using it. To answer your question, 'why no using Blackboard system? It require me to call IT, and they are always busy. Beside Moodle is easier and better.	TS	Theme 4: Technical Support for e-learning system
17	Female	20 - 25 yrs.	Science	I encourage the use of Blackboard system, however I find difficulty with the students. Most of the student do not even have e-mails. I blame Kuwait University because they are not serious on the use of e-learning system and allowing such low level of students to enrol in the university.	Policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
18	Male	20- 25 yrs.	Science	I do not use e-learning system in my work. I do not see it important in the learning process, and it depends on the learning material. The students have no experience with the system, therefore I should not increase the workload on them by enforcing the system. Also, there is no time to prepare the material in electronic form especially with the high workload on me.	attitude	Theme 9: Attitude toward e-learning

Appendix - A4

Quantitative Data Analysis - Unstructured Interviews

No.	Gender	Years of experience	College	Question: What do you think about e-learning system at Kuwait University?	Code	Theme
19	Female	10 - 15 yrs.	Science	I use the Blackboard system and I find no obstacles using it except the network when it goes down or becomes slow. I find the student very cooperative in using the system. The system benefit the learning process.	TS	Theme 4: Technical Support for e-learning system
20	Female	10 - 15 yrs.	Science	I use Moodle System and I find it easy to use. The students use without any problem. I think it is left to university to enforce the use of e-learning, however I find no support from Kuwait University in training on the system.	Train	Theme 2: Awareness sessions, workshops and training on e-learning
21	Female	5 10 yrs.	Science	I use Blackboard system and I find it ease my job. I find no difficulty using it because I have previous experience with it. I find the students use it without any problem. I use all the system tools in my teaching process. I believe the university is part of the process. Although I do not find any problem with the system, but some times the network is weak. it requires a renovation.	TS	Theme 4: Technical Support for e-learning system
22	Male	10 - 15 yrs.	Science	I use Blackboard system in my teaching. There are no problems in using the system. The students accept the system and I find them interact among themselves over the system. though, sometimes we face difficulty with IT support and network slowness. however, I think the system makes the learning process easier for both the instructor and the students.	TS	Theme 4: Technical Support for e-learning system
23	Female	5 - 10 yrs.	Science	I use Blackboard system and I find it easy to use. The students accept the system and use it without any problem. I use my own personal computer rather than university PC because it is outdated.	TS	Theme 4: Technical Support for e-learning system
24	Male	15 - 20 yrs.	Art	I do not use e-learning in my work because I find it difficult to use. I was given some training but in English language which I do not understand and use. Beside, my material does not fit with the system.	attitude	Theme 9: Attitude toward e-learning

Appendix - A5 – Focus Groups Discussion Records

Appendix - A5

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	Respondent illustrated system enrolled in other university in the Arabian Gulf, which enforces instructors to get certain services through Bb system only and the instructors are evaluated and awarded based on their use of the system. Mandatory training of instructors was discussed, responded	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'nothing is mandatory at KU. Faculty choose what they want'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'I feel there is no involvement of KU high administration, and better alignment should be made between what we to do with e-learning and KU strategy, including the training requirement'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q12: Why do you think instructors using Blackboard perceive e-learning usefulness more than instructors using other systems at KU?	'in comparison to other system used by some of the instructors Blackboard preserves the privacy and confidentiality required in a e-learning system'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q2: How Kuwait University sets policies in general and for e-learning in particular?	'KU have the package such as Blackboard (Bb) but not properly supported, or communicated to the instructors or covered by proper training'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning

Appendix - A5

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q2: How Kuwait University sets policies in general and for e-learning in particular?	'I wonder does KU have a policy on anything?'	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'I think the e-learning system we have is limited and important software features or options were not purchased by KU. that's why sometimes we have problems'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'I think it is to do with earlier adopters and later adopters of technology. Usually during system implementation adopters depend on IT support more and later on such dependency becomes less with time'. This notion may reflect that the more experienced instructors might be considered becoming late adopters of the e-learning technology which find IT support more crucial to them.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q1: How important e-learning to Kuwait University learning Process?	'Kuwait university have rushed into getting the e-learning system without adequate preparation for it, similar to the other system KU have enrolled'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q2: How Kuwait University sets policies in general and for e-learning in particular?	'e-learning started as a buzz word, KU purchased it, created for it a division which had the software and the money but did not know how to promote it. This is the situation now'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning

Appendix - A5

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q2: How Kuwait University sets policies in general and for e-learning in particular?	'I believe it is not only KU problem, even in corporate level, when technology is pushed as a strategy into operation. It results in confusion and disturbance are added. It should be the other way around, as an organization, a strategy should be set first and then define the tools to serve the strategy. This approach is missed in KU as well as on commercial corporate level'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q3: How do you describe KU strategy on e-learning?	'KU strategy on e-learning is not clear'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q3: How do you describe KU strategy on e-learning?	'I do not think a lot of us have read KU strategy, however I read in the mission statement and some of the processes that KU promote the faculty to use state of art technology to enable their teaching. So on paper it is written but not communicated or lease not clearly'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q3: How do you describe KU strategy on e-learning?	'from what I have seen in KU future IT plan, KU e-learning system takes a back seat among other IT requirements'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'Technical support is very important, however at KU, e-learning is under the Centre of Distanced Learning division while supported by IT department which sometimes create a problematic situation. It is better to have one department to handle all aspects of the e-learning'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q3: How do you describe KU strategy on e-learning?	'the strategy is not clear, one time they emphasis it then they don't facilitate it and make it easy to use'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q3: How do you describe KU strategy on e-learning?	'we do not have any administration or learning strategy by KU. I doubt you would find a document on KU strategy'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'the use of e-learning depends on what comes after the initial stage. If they don't support it, promote it and encourage on using it, nobody will use it'.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'the intention is good, but KU do not do a good job in promoting it and have the right environment to use it.	policy	Theme 1: Kuwait University Strategy and enforced Policy on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'Early training is effective'.	train	Theme 2: Awareness sessions, workshops and training on e-learning

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'training is provided by KU but not communicated properly'.	train	Theme 2: Awareness sessions, workshops and training on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'I am not sure I have seen any training given'.	train	Theme 2: Awareness sessions, workshops and training on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'The Centre for Distance Learning is unknown to us, they do not have any activities to increase awareness or provide necessary training to instructors'.	train	Theme 2: Awareness sessions, workshops and training on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'if they provide a simple manual, an easy step by step on how to use it, will encourage using it'.	train	Theme 2: Awareness sessions, workshops and training on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'once a person from computer centre gave us a training session and kept talking and showing windows of the system on the projector, but never gave any training material or manual we can refer to later'.	train	Theme 2: Awareness sessions, workshops and training on e-learning

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'training should be a continuous process, when was the last time they provided any training. It should be given to newcomers to KU'.	train	Theme 2: Awareness sessions, workshops and training on e-learning
Q11: Why do you think having professional training on e-learning at KU would not make any difference in instructors' attitude toward the use of e-learning?	'last time I heard about training on Blackboard was 4-5 years ago'.	train	Theme 2: Awareness sessions, workshops and training on e-learning
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	Respondents illustrated several problems with IT.	TS	Theme 4: Technical Support for e-learning system
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'integration between different packages that I use is very important to me and IT cannot help me on that'.	TS	Theme 4: Technical Support for e-learning system
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'sometimes I face a problem that IT find it difficult to solve due to staff lack of competency'.	TS	Theme 4: Technical Support for e-learning system
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	Technical support is critical and because of them I'm not using the e-learning system'.	TS	Theme 4: Technical Support for e-learning system

Appendix - A5

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'KU do not provide the software packages we need'.	TS	Theme 4: Technical Support for e-learning system
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'technical support have limited budget'. '	TS	Theme 4: Technical Support for e-learning system
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	In response to the relationship between years of experience and perceived need of technical support, 'this is because the more experienced instructors are older and require more attention from IT people'.	age	Theme 5: Instructor age
Q5: In your opinion, why female instructors are more positive in perceiving benefit from their previous computer skills in using e-learning?	'I think this might be due to female instructors enrolled in KU at later years which make them part of the younger generation who perceive benefit from computer technology more than older ones'.	age	Theme 5: Instructor age
Q6: Why do you think new comers instructors think more of e-learning usefulness in teaching?	'I think new comers are more associated with being young and exposed to new technology'.	age	Theme 5: Instructor age

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q9: Why do you think assistant professors and associate professors are more positive that having prior computer skills would promote the use of e-learning?	'because assistant and associate professors on the average are younger'.	age	Theme 5: Instructor age
Q5: In your opinion, why newcomers and female instructors are more positive in perceiving benefit from their previous computer skills in using e-learning?	'for the females I don't see why would they be more positive, may be because they are newcomers'.	age	Theme 5: Instructor age
Q7: In your opinion, why there would be no difference in perception toward the use of e-learning in any of KU colleges, whether art major or science major?	'may be it is because of the college, some colleges are newly added to KU and therefore their instructors are younger and technology oriented which contributed in the finding'.	age	Theme 5: Instructor age
Q1: How important e-learning to Kuwait University learning Process?	'I hate it, I tried to learn it but it is tedious and consumes a lot of time'.	design	Theme 6: E-learning system design
Q1: How important e-learning to Kuwait University learning Process?	' every semester I have to enrol the students and assign the course and so on… because of the process I do not use it'.	design	Theme 6: E-learning system design
Q1: How important e-learning to Kuwait University learning Process?	'Blackboard e-learning system has a lot of features but it is the setup cost, it is time consuming to learn it'.	design	Theme 6: E-learning system design
Q1: How important e-learning to Kuwait University learning Process?	'for great number of students it might be feasible to use it make quizzes and grade them, but 30 students I prefer to do it myself and outside the system'. '	design	Theme 6: E-learning system design

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'maybe because the younger generation feel more comfortable with trial-and-error approach in solving problems with the system while older ones do not'.	readiness	Theme 8: Instructor's Technology readiness
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'older generation are reluctant to handle technology'.	readiness	Theme 8: Instructor's Technology readiness
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'young generation instructors are familiar with today's software interface features such as a gear icon which probably what they need to edit a setting page. While the older generation instructors might call IT staff to help them do it'.	readiness	Theme 8: Instructor's Technology readiness
Q4: Why do you think KU technical support is critical to the success of e-learning, especially for instructors having more teaching experience at KU?	'I think it may be different for female instructors because I believe they are more flexible than male instructors'.	readiness	Theme 8: Instructor's Technology readiness
Q6: Why do you think new comers instructors think more of e-learning usefulness in teaching?	'Because of previous experience during my PHD study I used WebCt which became Blackboard later on. So KU blackboard was not different to me'.	readiness	Theme 8: Instructor's Technology readiness

Appendix - A5

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q5: In your opinion, why newcomers and female instructors are more positive in perceiving benefit from their previous computer skills in using e-learning?	' the newcomers are more technology savvy and have no problem dealing with it'.	readiness	Theme 8: Instructor's Technology readiness
Q6: Why do you think new comers instructors think more of e-learning usefulness in teaching?	'because they experienced with the use of technology'.	readiness	Theme 8: Instructor's Technology readiness
Q6: Why do you think new comers instructors think more of e-learning usefulness in teaching?	'being young people they are expected to use new technology'.	readiness	Theme 8: Instructor's Technology readiness
Q9: Why do you think assistant professors and associate professors are more positive that having prior computer skills would promote the use of e-learning?	'assistant professors take low level classes with increased number of students.They use all their technological skills to cop with the load including e-learning'	readiness	Theme 8: Instructor's Technology readiness
Q1: How important e-learning to Kuwait University learning Process?	'e-learning is vital to me, I cannot do my courses without it'.	attitude	Theme 9: Attitude toward e-learning
Q1: How important e-learning to Kuwait University learning Process?	'The most important component of e-learning is the communication. In my courses I value most the communication. In addition to the notification to students'.	attitude	Theme 9: Attitude toward e-learning
Q1: How important e-learning to Kuwait University learning Process?	'Recently, e-learning served me well. It acted as a repository of all my work when I needed to submit it to get an award. Also, I often use the journal feature of Bb'.	attitude	Theme 9: Attitude toward e-learning

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q10: The study found the more instructors use e-learning the more they perceive its usefulness and easiness of use and have better attitude toward it. In your opinion, why?	The question should be rephrased to 'Instructors who find e-learning useful and easy to use and hence have better attitude toward it, are found more among instructors who actually use e-learning'. Therefore, it more in line with TAM model.	attitude	Theme 9: Attitude toward e-learning
Q12: Why do you think instructors using Blackboard perceive e-learning usefulness more than instructors using other systems at KU?	'although KU didn't install all options available under Blackboard however the available features support my work'.	attitude	Theme 9: Attitude toward e-learning
Q12: Why do you think instructors using Blackboard perceive e-learning usefulness more than instructors using other systems at KU?	'I used social media packages before but I stopped. I don't want to share my private contacts'.	attitude	Theme 9: Attitude toward e-learning
Q3: How do you describe KU strategy on e-learning?	'what I see e-learning is becoming more of a default system in universities around the world. It is part of KU whether we like it or not'.	attitude	Theme 9: Attitude toward e-learning
Q3: How do you describe KU strategy on e-learning?	'There is an intention in Kuwait to create what it is called a Virtual University.'	attitude	Theme 9: Attitude toward e-learning
Q5: In your opinion, why female instructors are more positive in perceiving benefit from their previous computer skills in using e-learning?	'It might be just a perception of a benefit from computer technology with female instructors as a feminine issue, that's all'.	attitude	Theme 9: Attitude toward e-learning

Appendix - A5

Qualitative Data Analysis - Focus Group Discussions

Question	Response	Code	Theme
Q7: In your opinion, why there would be no difference in perception toward the use of e-learning in any of KU colleges, whether art major or science major?	'There should not be any difference between the colleges in perception toward e-learning. For instance the use of the communication feature of e-learning it does not matter whether in science or art colleges'.	attitude	Theme 9: Attitude toward e-learning
Q1: How important e-learning to Kuwait University learning Process?	'implementing e-learning depends on the subject of teaching'.	attitude	Theme 9: Attitude toward e-learning
Q7: In your opinion, why there would be no difference in perception toward the use of e-learning in any of KU colleges, whether art major or science major?	'I am supervised that it would be the same for art and science colleges'.	attitude	Theme 9: Attitude toward e-learning

Appendix - A6 – DCU Ethics Committee Approval

Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

DCU

Ms Alia Ashkanani
School of Education Studies

24th November 2014

REC Reference: **DCUREC/2014/217**

Proposal Title: **An investigation into instructors' perspectives on e-Learning at Kuwait University using an adapted TAM Model", a study conducted on the faculty of Kuwait University**

Applicants: **Ms Alia Ashkanani, Professor Joe O'Hara, Dr James Lovatt, Dr Abeer Al-Hasan**

Dear Alia,

This research proposal qualifies under our Notification Procedure, as a low risk social research project. Therefore, the DCU Research Ethics Committee approves this research proposal. Materials used to recruit participants should state that ethical approval for this project has been obtained from the Dublin City University Research Ethics Committee. Should substantial modifications to the research protocol be required at a later stage, a further submission should be made to the REC.

Yours sincerely,

DCU
Research & Innovation

Dónal O'Mathúna

Dr. Donal O'Mathuna
Chairperson
DCU Research Ethics Committee

Taighde & Nuálaíocht Tacaíocht
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Appendix - A7 – KU Department of Quantitative Methods & Information System Permission

قسم الطرق الكمية و نظم المعلومات
Department of Quantitative Methods & Information Systems
كلية العلوم الإدارية
College of Business Administration
جامعة الكويت
Kuwait University

September 21st 2014

Subject: Approval of Survey Questionnaire by Review Panel

Dear Sir/Madam

Kindly note that we have reviewed the survey questionnaire for the following study:

"*An investigation into instructors' perspectives on e-Learning at Kuwait University using an adapted TAM Model*", a study conducted on the faculty of Kuwait University. By: Alia Ashkanani

We found it addressing the required research data collection most suitably and adequately. The final version has reflected all necessary corrections in order to reach an acceptable level for distribution. The following panel has reviewed the present version of survey questionnaires and have endorsed it for data collection:

Faculty Name	Signature
- Dr. Abeer A. Al-Hasan	
- Dr. Ali Dashti	

Quantitative Methods and Information Systems Department
College of Business Administration
Kuwait University

قسم الطرق الكمية ونظم المعلومات
كلية العلوم الإدارية - جامعة الكويت
Department of Quantitative Methods & Information System
College of Business Administration
Kuwait University

Appendix - A8 – KU Centre of Distance Learning Permission

جامعة الكويت | مكتب نائب مدير الجامعة للخدمات الأكاديمية المساندة | مركز التعليم عن بعد
Kuwait University | OFFICE OF THE VICE PRESIDENT FOR ACADEMIC SUPPORT SERVICES | Distance Learning Center

2/15/2015

To whom it may concern

From: *Husain AlSaffar*
Distance Learning Center Acting Director
Supervisor

Subject: Ms. Alia Ashkanani Request

This attached Document and statistics is given to Ms. Alia Ashkanani upon her request to gather information about Kuwait University's Distance and E-Learning center, This information is only to be provided in the acknowledgment of her Thesis program at Dublin City University (DCU). For further information it is requested to contact Kuwait University Assistance vice president for Academic services.

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