Electronic Theses and Dissertations Programmes in the Arab Gulf States: Exploring factors affecting their adoption and development

By

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DECLARATION

I testify to the best of my knowledge and belief that this thesis is my own work and does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university or published or written by another person.

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ABSTRACT

An increasing number of academic institutions all over the world have begun to adopt and develop electronic theses and dissertations (ETD) programmes. The adoption and development of these programmes is influenced by many factors. Despite considerable discussion on these factors in different countries, little has been written on the adoption and development of such programmes in the Arab Gulf States. Moreover, there has been no in-depth research-based investigation into the enablers and barriers that may have an impact on the adoption and development of ETD programmes in the Gulf States.

Using a sequential exploratory design and mixed methods, this study attempts to fill this knowledge gap. The study explores the perceived enablers and barriers influencing the adoption and development of ETD programmes in the Arab Gulf States. It also develops a framework that outlines the factors influencing the adoption and development of ETD programmes in the Gulf States. The study is primarily qualitative, using semi-structured, face-to-face interviews in conjunction with the analysis of relevant documents to identify, develop an understanding of, and create a picture of the situation in the Gulf States in terms of the factors affecting the adoption and development of ETD programmes. The interviews cover the key stakeholders, which include postgraduate students, library managers, system administrators, postgraduate officers and academic staff. Forty-five participants from five universities in the Gulf States were interviewed.

The results of the interviews provided the necessary information to undertake the second phase of the study (online survey). The primary aim of this was to test and explore, in a larger sample, the issues identified in the interviews. Three hundred and nine participants from four universities in the Gulf States completed the online survey. The results of the survey helped to confirm and complement the findings of the interviews.

The research findings revealed that several factors were perceived to affect the adoption and development of ETD programmes in the Gulf States. These included the appreciation of the benefits of ETD programmes, the availability of the required resources to support ETD programmes, the perceived complexity of the technological processes as well as a number of social factors.

An initial framework for analysis was developed using concepts from the literature review combined with the constructs of the Unified Theory of Acceptance and Use of Technology (UTAUT). The initial framework highlighted several enablers and barriers to the adoption and development of ETD programmes. Based on the research findings, further enablers and barriers emerged that had not been outlined in the preliminary research framework. These included concerns surrounding the perceived quality and quantity of theses and dissertations, which were perceived due to the newness of research programmes in the Gulf States. ETD programmes were perceived as increasing the currently limited availability of Arabic research on the internet. Moreover, as these states have strong economies, academic institutions were mostly equipped with the required technological infrastructure.

In addition, the initial framework did not highlight any kind of influence between the five factors. However, the current research findings revealed that these five factors were interdependent and that some factors have an influence on the others. This is reflected in the revised framework. The preliminary framework also did not indicate which factor was the most influential, while the revised framework shows that the contextual factors were found to be influencing the institutional factors and this, in turn, influenced the personal perceptions.

The revised framework is intended to provide guidance for universities and academic institutions in the Gulf States in adopting and developing ETD programmes. It is also hoped that by understanding the influencing factors, universities and academic institutions will be better placed to plan for and make informed investment decisions regarding the adoption and development of ETD programmes and that this will lead to their successful adoption and development in the Gulf States.

Key words: *Electronic Theses and Dissertations (ETD) programmes, The Arab Gulf States, Social factors, Technological processes, Advantages of ETD programmes, Available resources, and ETD programmes adoption and development.*

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CHAPTER ONE: INTRODUCTION

This chapter introduces the research, including its rationale, the research problem, the purpose statement, the research objectives, the research questions, the research methodology, a statement of the significance of this study, the limitations of the research, definitions of key terms and acronyms, and the organisation of the thesis.

1.1. Research background

The Electronic Theses and Dissertations (ETD) initiative came into being after the development of electronic publishing on the internet and the technological platforms and software that support it (Reeves, Hagen & Jewell, 2006). The idea of ETD submission was first mentioned in 1987 by Universal Microfilms Inc (UMI) in the United States. Since then, many institutions have adopted the initiative. The Networked Digital Library of Theses and Dissertations (NDLTD) was established in 1996 with the aim of coordinating ETD-related activities and supporting the adoption and implementation of the ETD initiative (Allard, 2003; Suleman et al., 2001). In 2012, NDLTD had more than 122 members from all over the world (NDLTD, 2012). These included institutional, consortial and individual members.

Several enablers have been found to influence the adoption and development of ETD programmes in university libraries. The most important of these are the perceived benefits that ETD programmes provide to individuals and organisations. Postgraduate students, for example, have free and remote access to searchable databases of abstracts via ETD programmes and, in some cases, access to the full text of theses and dissertations (Jewell, Oldfield & Reeves, 2006). Furthermore, they have the option of remote submission of their theses in electronic form, thus being able to save on photocopying and binding costs (Copeland & Penman, 2004; Jewell, 2000).

ETD programmes have also been found to provide benefits for the academic institutions involved. Bevan (2005) claims that moving to electronic submission of theses allows for the renovation, rationalisation and streamlining of the administration of the thesis submission process within university registries. Other benefits found include the speeding up of the procedures and reduction in the paper handling and storage space needs of staff in the postgraduate office, and the saving of shelf space in the library (Jewell, Oldfield et al., 2006).

At the same time, a number of factors have been found to be likely barriers to the adoption and development of ETD programmes. Some of the barriers identified include perceptions of ETD programmes, and administrative, technological and economic factors.

With regard to perceptions surrounding ETD programmes, Greig (2005) claimed that thesis supervisors, and sometimes university administrators, are less enthusiastic about the idea of making theses and dissertations available online. Greig explains that some supervisors and administrators are of the opinion that theses are not an important part of research literature and that it is not worth making these publicly available. Bevan (2005) supported this argument by asserting that some academic staff believe that master's level theses represent the initial stages of research only and, therefore, are not worth being made generally available.

Some perceived barriers relate to administrative and political factors. Adopting an ETD programme is, sometimes, seen to involve several stages, including changing university regulations for degree completion and submission, and revision of operational responsibilities (Jewell, Judge, Oldfield & Tomalty-Crans, 2006). In India, for example, university librarians hold government policies and administrative support to be potentially major concerns in the implementation of an ETD programme (Vijayakumar, Murthy & Khan, 2007).

Technology is another factor that affects the adoption and development of ETD programmes. Bellamy (2005) stated that preservation and archival practices have not yet been developed fully to capture all granularities of digital objects. Therefore, if digital objects cannot be preserved in their totality, a significant part of the knowledge will be lost.

In Kuwait, a feasibility study was conducted in 2004 to investigate the adoption of an electronic document delivery system in the state's academic institutions. The study revealed several barriers to the development of new technology, such as a lack of cooperation between government authorities and institutions, an absence of technology strategies, and a lack of research in information technology related areas (Alfadhli & Johnson, 2006).

Taha (2005) proposed an ETD network for the United Arab Emirates. Taha claimed that there were some difficulties, such as the absence of a national strategic plan for an ETD network consortium, a lack of appropriate policies, and funding and technological issues (Taha, 2005).

A study by Alfadhli and Johnson (2006) discusses issues associated with the adoption of an electronic document delivery system, however it does not focus on the issues associated with ETD programmes specifically.

1.2. Research problem

The literature review showed that there is little published research-based literature with regard to the adoption and development of new technology in academic institutions in the Arab Gulf States. More specifically, there is a lack of understanding of the enablers and barriers to the adoption and development of ETD programmes in the Gulf States. As an increasing number of universities in the Gulf States are now exploring and looking into implementing ETD programmes, an understanding of these factors could contribute to the successful adoption and development of these programmes.

1.3. Purpose statement

This study explored the perceived enablers and barriers influencing the adoption and development of ETD programmes in the Gulf States. The research led to the development of a contextual framework for mapping the factors influencing the adoption and development of ETD programmes in the Arab Gulf States, which can be used as a foundation for other research on this topic.

1.4. Research objectives

This research specifically sought to meet the following objectives:

1. To identify and understand enablers and barriers to the adoption and development of ETD programmes in the Gulf States.

2. To develop a contextual framework of factors that affect the adoption and development of ETD programmes in the Gulf States.

1.5. Research questions

The research problem, the purpose statement and the research objectives gave rise to the following principal research questions:

1. What are the perceived enablers that influence the adoption and development of ETD programmes in the Gulf States?

2. What are the perceived barriers that influence the adoption and development of ETD programmes in the Gulf States?

1.6. Research methodology

The focus of this mixed methods research was to explore and understand the current situation in the Gulf States with regard to the factors influencing the adoption and development of ETD programmes. This was primarily an exploratory investigation.

This research utilised a combination of qualitative and quantitative research methods. This research explored the situation of ETD programmes in the Gulf States and investigated participants' perceptions of this situation. Thus, a qualitative methodology was used for this phase of research. Face-to-face interviews were conducted in conjunction with an analysis of relevant documents. Interviews covered the key informants in positions relevant to ETD programmes, such as postgraduate students, library managers, system administrators, postgraduate officers and academic staff.

On the other hand, quantitative research emphasises quantification in the collection and analysis of data (Bryman, 2008). The findings of the first qualitative phase provided the necessary foundation for the second quantitative phase. Based on the findings of the interviews, an online questionnaire was developed. The questionnaire tested and explored, in a larger sample, the issues identified in the interviews. The results of the questionnaire were used to ascertain whether the results contradicted, confirmed or complemented the findings of the research interviews. In addition, the research questionnaire tested and explored further, in a larger sample, the possible differences in perceptions between the five groups of key informants.

Therefore, this research employed a combination of methods to collect and analyse the collected data. While the initial semi-structured interviews were used to facilitate in-depth understanding of the issues based on the views and attitudes of people involved, the online questionnaires were used to verify and extend the understanding derived from the initial qualitative phase. As a result, a more accurate picture was acquired and the final results were refined accordingly.

1.7. Significance of the study

The main contribution of this research was the development of a contextual framework that identifies factors affecting the adoption and development of ETD programmes. In particular, this research made explicit the perceived enablers and barriers to the adoption and development of ETD programmes in the Gulf States.

As the first research into this topic in the Gulf States, this study provides new information on the factors affecting the adoption and development of ETD programmes in these states. To date, neither qualitative nor quantitative research has been undertaken in the Gulf States to explore the enablers and barriers to the adoption and development of ETD programmes. What also made this study unique is that the discussion of the influencing factors was interpreted in relation to the social issues the participants encountered. Thus, this study makes explicit the factors affecting the adoption and development of ETD programmes in the context of the Gulf States.

The outcome of this research is expected to be beneficial to different groups in the Gulf States in particular and other countries in general. The first group is academic institutions that are interested in the adoption of ETD programmes. The findings of this research will help academic institutions plan to make informed investment decisions about adopting and maintaining ETD programmes. By understanding the various factors, they would be able to plan for the adoption of these programmes while keeping these factors in mind. This will lead to successful adoption and development of ETD programmes in the Gulf States. The second group is postgraduate students who are normally required to submit their theses and dissertations to their universities. The findings of this research will help them consider the kind of issues they expect from making their theses electronically available, such as copyright and plagiarism issues.

Other groups include researchers and the general public. They would be interested in knowing about ETD programmes, especially about access restrictions and other copyright issues. ETD programmes provide access to valuable research that would be of interest to researchers and the general public. Therefore, this research would provide these individuals with knowledge on these programmes and other issues related to the use of ETDs.

In summary, the study will contribute to the existing knowledge pool and serve as a useful reference on the influencing factors affecting the adoption and development of ETD

programmes in the Gulf States (see Chapter 9, section 9.3 for detailed and further discussions on the significance of the research).

1.8. Limitations and delimitation of the study

There were several limitations of this research. Firstly, due to the interpretive and primarily qualitative nature of this study, the findings could be subject to other interpretations (Bryman, 2004). However, the researcher applied different criteria to help make the qualitative findings more accurate and valid. These criteria are discussed in greater detail in Chapter 5, section 5.3.7.

Secondly, the purposive sampling procedure (in the qualitative phase) and the fact that only one case from each state (only five universities were included in this study out of eighty five universities in the Gulf States that provide Master's and PhD programmes) was included in the research sample decreased the generalisability of the findings. It should be noted that the study findings were not intended to be generalisable to all universities in the Gulf States, although where the situations and contexts are similar; findings may be transferable to other universities.

Thirdly, since Arabic is the official language in the Gulf States, the majority of the interviews were conducted in Arabic. To ensure the accuracy of translations, the interview transcripts were double-checked by the researcher. In phase two, the researcher asked two lecturers and two teachers who were proficient in both the Arabic and English languages to check the translation of the questionnaire (see Chapter 5, section 5.4.2.1).

Fourthly, due to cultural and university regulations, the researcher was not able to interview female participants in a number of institutions. Only five women out of forty-five participants agreed to be interviewed and included in this research. Chapter Five, section 5.5 provides further discussion on the limitations of the research survey questionnaire.

With regard to delimitations, this study included only one university from each of the Gulf States in the research sample to allow an in-depth investigation. The researcher also interviewed only nine participants from each university. In addition, five groups only were included in the interviews (postgraduate students, academic staff, library managers, system managers and postgraduate officers). Other groups, such as publishers, researchers and the general public would contribute to this research if they were included. However, due to time

and cost constraints and also to allow for in-depth investigation, these groups were excluded from the research sample.

1.9. Definitions of key terms

Adoption: the process through which an institution decides to implement the systems and technology (Lee, Davison & Wei, 1999).

ETD programmes: institutional repositories that submit, capture, archive, manage, distribute and provide access to Electronic Theses and Dissertations (ETD) (Park, Zou & McKnight, 2007).

Gulf States: the six countries that form the Gulf Cooperation Council established in 1981. These countries are Oman, the United Arab Emirates, Saudi Arabia, Qatar, Bahrain and Kuwait.

1.10. Abbreviations and acronyms

ADT	Australian Digital Theses
C-TAM-TPB	A model combining TAM and TPB
DOI	Diffusion of Innovations Theory
ETD	Electronic theses and dissertations
GCC	Gulf Cooperation Council
IR	Institutional repository
MM	Motivational Model
MPCU	Model of PC Utilisation
NDLTD	Networked Digital Library of Theses and Dissertations
SCT	Social Cognitive Theory
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action

UTAUT   Unified Theory of Acceptance and Use of Technology

1.11. Organisation of the thesis

This thesis comprises nine chapters. Following this chapter, Chapter Two provides an overview of the situation in the Gulf States. Chapter Three presents a literature review related to this research with a view to establishing the knowledge gaps that necessitate the undertaking of this research. Chapter Four discusses the literature related to the theoretical perspectives in order to develop the preliminary conceptual framework for analysis that guides the design of this research.

Chapter Five discusses the research design and methodology. It also outlines the approaches used to evaluate the research findings. This is followed by highlighting the limitations and delimitations of this research.

Chapter Six presents the analyses and discussions of the findings of the interviews while Chapter Seven presents the analyses and discussions of the findings of the online questionnaire.

Chapter Eight reviews the major findings and provides integrated discussions of the findings of both phases (qualitative and quantitative). Chapter Nine concludes this study and begins by summarising the research processes and presentation of the revised framework. This is followed by highlighting the significance of the research, indicating avenues for future research, and the research conclusion.

CHAPTER TWO: BACKGROUND ON THE ARAB GULF STATES

This chapter reviews the situation in the Gulf States and provides background information on these countries from a historical, political and economic perspective. This is followed by an examination of the universities' websites to observe whether these institutions have an ETD programme of some variety in place. This overview is also based on the researcher's visit to these states and the documents collected during the first data collection stage (see Chapter 5, section 5.3 for further information on this stage of data collection). This background information helped to place the research findings in context. Chapters Eight and Nine highlighted several issues that were perceived to be influenced by contextual factors.

2.1. Background on the Gulf States

The Cooperation Council for the Arab States of the Gulf, referred to as the Gulf Cooperation Council (GCC), was established on 25 May 1981. Their Majesties and Highnesses, the leaders of the Sultanate of Oman, the United Arab Emirates, the Kingdom of Saudi Arabia and the states of Qatar, Bahrain and Kuwait reached agreement on a cooperative framework to achieve unity between these states. The GCC confirms the special relations, similar systems, common qualities and characteristics founded on the creed of Islam. There are deep religious and cultural ties linking the six states of the GCC and strong kin relations prevail amongst their citizens (The Cooperation Council for the Arab States of the Gulf [GCC], 2011a).

The GCC Charter declares that the basic objectives are to effect coordination, integration and inter-connection between the member states in all fields, strengthening ties between their peoples, formulating similar regulations in various fields such as economy, finance, trade, customs, tourism, legislation and administration, as well as encouraging scientific and technological progress in industry, mining, agriculture, water and animal resources, establishing scientific research centres, setting up joint ventures and encouraging cooperation in the private sector (GCC, 2011a).

The six states of the GCC have some of the fastest growing economies in the world. This is mostly due to recent discoveries of and investments in oil and natural gas. Table 2.1 provides an overview of the Gulf States.

Table 2.1: Overview of the Gulf States (GCC, 2013)

Official language	Arabic
Official religion	Islam
Total area	2,410,7 km²
Total population	47.0 million
Total local outcomes (GDP)	US $1.60 trillion
Average income per capita per year	US $33.3 thousand

The following tables provide an overview of each country of the Gulf States.

Table 2.2: Basic information about Oman (2011b)

Capital city	Muscat	
Area	309,500 km²	
Population	2,694,094	
Number of colleges and universities offering:	Bachelor programmes	Master's and PhD programmes
	38	12

Table 2.3: Basic information about the United Arab Emirates (2011b)

Capital city	Abu Dhabi	
Area	83,600 km²	
Population	4,765,000	
Number of colleges and universities offering:	Bachelor programmes	Master's and PhD programmes
	40	28

Table 2.4: Basic information about Bahrain (2011b)

Capital city	Manama	
Area	800 km²	
Population	1,106,509	
Number of colleges and universities offering:	Bachelor programmes	Master's and PhD programmes
	14	8

Table 2.5: Basic information about Saudi Arabia (2011b)

Capital city	Riyadh	
Area	2,000,000 km²	
Population	25,373,512	
Number of colleges and universities offering:	Bachelor programmes	Master's and PhD programmes
	50	29

Table 2.6: Basic information about Qatar (2011b)

Capital city	Doha	
Area	11,586 km²	
Population	1,608,903	
Number of colleges and universities offering:	Bachelor programmes	Master's and PhD programmes
	12	4

Table 2.7: Basic information about Kuwait (2011b)

Capital city	Kuwait	
Area	17,818 km²	
Population	2,583,020	
Number of colleges and universities offering:	Bachelor programmes	Master's and PhD programmes
	10	4

As stated earlier, the states of the GCC have strong economies in relation to their small populations. This situation has facilitated the development of the education system in these countries. Great emphasis has been placed on postgraduate education and research activities in high-demand areas. As shown in the tables above, there are eighty-five colleges and universities in these states that provide postgraduate programmes. In response to the increasing numbers of theses and dissertations produced from these programmes and overseas, the need to establish new resource sharing systems has become evident (Taha, 2005). Moreover, university libraries can no longer be self-sufficient with regard to the scholarly information resources required by their enrolled students. The need therefore to establish ETD programmes in the Gulf States seems significant.

2.2. Adoption of ETD programmes in the Gulf States

With regard to technology adoption in the Gulf States, since connection to the internet in the mid-1990s, telecommunications have improved significantly. Over the last two decades,

many university libraries in the Gulf States have introduced electronic resources into their library operations (Ashoor, 2000). However, their progress in transitioning from a traditional library environment to an electronic library environment has varied. In 2000, some libraries had only introduced CD-ROM and online literature searching, while others were planning the adoption of automated systems and the integration of electronic information sources into their services (Ashoor, 2000). In Kuwait, for example, libraries have adopted some of the most recent technologies in their services. In Oman, the Sultan Qaboos University library had automated many services, such as the library catalogue, circulation services, journal services, reference services, and had databases and other multimedia sources (Sultan Qaboos University, 2011b). However, some academic and research libraries still employed manual processes in some services that could be automated (Alfadhli & Johnson, 2006).

With regard to ETD programmes in the Gulf States, an examination of the websites of university libraries in the region reveals that a number of these institutions have already adopted and developed some variety of ETD programme (examination commenced in January 2011). In Saudi Arabia, for example, the library at the King Fahd University of Petroleum and Minerals has designed an online system that facilitates the searching and browsing of bibliographic information and abstracts and the retrieval of the full text in PDF of more than 1,841 theses and dissertations (King Fahd University of Petroleum and Minerals, 2011). A minority of these are at PhD level and the remainder are at master's level. In addition, exploration of the website of Umm Al-Qura University reveals that the university library provides full text access to its online collection of theses and dissertations. The library provides access to more than 9,193 theses and dissertations (Umm Al-Qura University, 2011).

Examination of the websites of other universities in the Gulf States reveals that several university libraries have already subscribed to online theses and dissertations databases, such as ProQuest Theses and Dissertations. These databases provide full text access to hundreds of thousands of theses and dissertations. Subscription to ETD databases by these universities indicates that these universities were aware of the idea of making theses electronically available and possibly, that they valued the importance of providing digital access to their collections of these and dissertations. In terms of local theses and dissertations, a few university libraries provide access to the full text of selected theses and dissertations only. For example, King Saud University provides full text access to only 55 selected theses and

dissertations (King Saud University, 2011). However, several universities in the Gulf States provide access only to the bibliographic records and abstracts of their collections of theses and dissertations with no online access to the full text. In addition, a few universities indicate that their collections of theses and dissertations will be available soon on the library website. However, it is not clear whether these collections will be available in full text or in abstract form only. The websites of other universities investigated do not show any link or information about their collection of theses and dissertations.

In addition to the examination of the websites of the Gulf universities, the researcher's visit to several universities in the Gulf States shed further light on the situation regarding the adoption of ETD programmes in these universities. Information about these universities and institutions is also based on the documents collected from these institutions, such as policies of theses and dissertations acquisition and maintenance, theses statistics, postgraduate student statistics and other information relevant to the development of ETD programmes in the Gulf States. These universities include Al-Imam Muhammad bin Saud Islamic University (Saudi Arabia), Kuwait University, University of Bahrain, United Arab Emirates University, Sultan Qaboos University (Oman), and Qatar University.

2.2.1. Al-Imam Muhammad bin Saud Islamic University (Saudi Arabia)

URL: http://www.imamu.edu.sa/sites/en/Pages/default.aspx

There were 68 Master's and PhD programmes offered across the eleven colleges at Al-Imam Muhammad bin Saud Islamic University (IMAMU) in the 2009/2010 academic year. The total number of registered students at IMAMU was 51,811 in all programmes, including bachelor and postgraduate programmes. There were 4,711 registered students for master's and PhD programmes in the 2009/2010 academic year (Al-Imam Muhammad bin Saud Islamic University, personal communication, July 4, 2011).

Imam Muhammad bin Saud Islamic University started to acquire theses and dissertations in both printed and electronic format in 2004. Master's and PhD students are required to submit a bound copy as well as an electronic copy of their theses to the university library. According to one librarian, there were no standards available to guide students when submitting their theses in electronic format. Some students submit their theses as one file while others submit

multiple files. Similarly, some students submit their theses in PDF while others submit them in MS Word. The university library was undertaking a project to digitise all manuscripts and paper theses and dissertations (in 2008). However, the purpose of this project is to digitally archive these documents and facilitate future retrieval only, with no intention to make them publicly available as full text. For this project, the university has outsourced a private company to digitise all manuscripts and paper theses and dissertations. The researcher was able to visit the workshop of this company where they digitise and scan theses and dissertations. According to the company, it scans more than 3000 pages daily. Librarians, in turn, have to check the scanned documents for any errors such as missing pages, misplaced pages, scanning clearness, and unstable margins.

With regard to copyright policies, the university did not yet have a clear copyright policy in terms of publishing theses online. Postgraduate students own the copyright to their theses and the university must seek the prior approval of students before publishing their theses on the internet. A reviewing committee is in place that aims to review and select the best theses for electronic publication. After selecting the best theses, the authors are contacted and asked for permission as well as remunerated for the publication of their theses online.

Imam Muhammad bin Saud Islamic University has integrated theses searching within the main library catalogue. Researchers can search for theses by selecting "Theses" as the document type. Only bibliographic records are available, but there is a request option for the theses in hard copy. By the beginning of 2011, the university library had a collection of around 10,057 theses and dissertations (Al-Imam Muhammad bin Saud Islamic University [IMAMU], 2011).

2.2.2 Kuwait University

URL: http://www.kuniv.edu/ku/index.htm

There were 49 master's and PhD programmes offered across the ten colleges at Kuwait University in the 2010/2011 academic year. The total number of registered students at Kuwait University was 26,070 in all programmes including bachelor and postgraduate programmes. There were 1,307 registered students for master's and PhD programmes in the 2010/2011 academic year (Kuwait University, College of Graduate Studies, personal communication, January 3, 2011).

Kuwait University started to acquire theses and dissertations in both printed and electronic format in 2003. Master's and PhD students are required to submit two bound copies of their theses as well as an electronic copy on a CD or diskette. They are also asked to submit an abstract in both the Arabic and English languages. All theses and dissertations are collected and archived in the College of Graduate Studies. Nevertheless, Kuwait University does not have the appropriate policies in regard to copyright permission that allow it to publish theses and dissertations on the web.

The website of the Kuwait University library shows a list of around 1,728 theses and dissertations. Only brief bibliographic records are listed with no abstracts or full text provided (Kuwait University, 2011).

2.2.3. University of Bahrain

URL: http://www.uob.edu.bh/english/

There were roughly 27 master's and PhD programmes offered across the seven colleges at the University of Bahrain in the 2011/2012 academic year. The total number of registered students at the University of Bahrain was 12,709 in all programmes including bachelor and postgraduate programmes. There were 350 registered students for master's and PhD programmes in the 2011/2012 academic year (University of Bahrain, Department of Information Data Analysis and Statistics, personal communication, August 2, 2011).

The University of Bahrain started to acquire theses and dissertations in both printed and electronic format in 2006. Master's and PhD students are required to submit a bound copy and an electronic copy of their theses to the university library. The university library started a project in 2008 to digitise all paper periodicals and paper theses and dissertations in order to make them electronically available. However, the initial stage of this project involves making only the abstracts electronically available. There is an intention to provide full text accessibility of these collections on campus only. At the time of the researcher's visit in October 2008, the university library was in the planning phase for this project. The researcher was given an overview of the project and was shown the software and hardware prepared for the project. It is interesting to mention that the researcher was also consulted on some aspects related to the project, and suggested some extra fields that were important to be included in the description of theses and dissertations.

In addition, the university library has also prepared a copyright permission form. Each student who submits a thesis to the library is required to sign this form and indicate either his/her agreement or disagreement to the electronic publishing of the thesis. Currently, the University library provides electronic access to the bibliographic records and abstracts of 623 PhD and master's theses. However, it does not yet provide full text access to these collections (University of Bahrain, 2011).

2.2.4. United Arab Emirates University

URL: http://www.uaeu.ac.ae/

There were roughly 31 master's and PhD programmes offered across the nine faculties at the United Arab Emirates University (UAEU) in the 2010/2011 academic year. The total number of registered students at UAEU was 12,457 in all programmes including bachelor and postgraduate programmes. There were 420 registered students for master's and PhD programmes in the 2010/2011 academic year (United Arab Emirates University [UAEU], 2011a).

Postgraduate students are asked to provide six paper copies of their theses and dissertations, including three copies to the university library. UAEU does not have a policy asking students to submit electronic copies of their theses and dissertations. However, there were a few departments that had recently started to ask their students to submit an electronic copy of their theses and dissertations as well as a printed copy to the department. The university library provides access to the bibliographic records of theses and dissertations only, with no abstracts or full text access provided. The library has a total of 1,166 theses and dissertations (UAEU, 2011b).

Following discussions with several people at the UAEU (November, 2008), the researcher learned that a proposal for electronic submission of theses and dissertations has been developed and submitted to the dean of Graduate Studies. The proposal contained all elements required to adopt an ETD programme, including submission processes, submission format, copyright policies, and the online accessibility options. The proposal intends to mandate the submission of electronic copies of theses and dissertations and gives the university the right to publish these theses on the web without students' permission. The previous dean of Graduate Studies supported the idea of ETD programmes. However, the

previous dean was recently replaced with a temporary dean (in 2008). The new dean was not dedicated exclusively to the Deanship of Graduate Studies and, thus, the proposal has not yet been approved.

2.2.5. Sultan Qaboos University (Sultanate of Oman)

URL: http://www.squ.edu.om/

There were roughly 54 master's programmes and 26 doctoral programmes offered across the nine colleges at Sultan Qaboos University (SQU) in the 2010/2011 academic year. The total number of registered students at SQU was 15,276 in all programmes including bachelor and postgraduate programmes. There were 975 registered students for master's and PhD programmes in the 2010/2011 academic year (Sultan Qaboos University, Department of planning and statistics, personal communication, January 17, 2011).

Policies for submission of electronic copies of theses and dissertations were only adopted in 2008 (Sultan Qaboos University [SQU], 2008). Before that, postgraduate students were only asked to submit four paper copies of their theses and dissertations (SQU, 2001). However, the researcher's visit to several departments in the SQU revealed that these departments also request their students to submit electronic copies of their theses in addition to paper copies. These departments keep these electronic copies for future reference. As a result, though there was no such policy asking students to submit an electronic copy of their theses before 2008, several departments asked their students to submit electronic copies to the department. With regard to copyright policies, there was no policy giving the university the right to publish students' theses and dissertations electronically.

Current policies ask students to submit two bound copies of the final version of the thesis and one electronic copy to the Deanship of Postgraduate Studies (SQU, 2008). The main library in SQU receives all theses and dissertations from the Deanship of Postgraduate Studies. The main library provides electronic access to the bibliographic records of more than 1,845 theses and dissertations. However, neither the abstract nor full text formats can be accessed for these theses (SQU, 2011).

The website of the College of Education library provides access to the bibliographic records as well as the abstracts of theses and dissertations. However, access to the full text format is not provided.

2.2.6. Qatar University

URL: http://www.qu.edu.qa/

There were 13 master's and PhD programmes offered across the eight colleges at Qatar University in the 2010/2011 academic year. Postgraduate programmes at Qatar University were mainly coursework-based programmes. The total number of registered students at Qatar University was 9,119 in all programmes including bachelor and postgraduate programmes. There were 199 registered students for master's and PhD programmes in the 2010/2011 academic year (Qatar University, Institutional Planning and Development, personal communication, June 8, 2011).

However, when the researcher visited the Qatar University to discuss the research (October, 2008), the consultant of the vice president of academic affairs advised the researcher that the university was not suitable for this research. He explained that they had only two master's programmes and coursework-based programmes only (in 2008). This means that there were no theses or dissertations produced in the university. The researcher subsequently visited the central library to familiarise himself with the university's collection, particularly theses and dissertations. Although the university possesses 1,934 theses and dissertations, most have been gifted from other libraries overseas (Qatar University, 2011). The remainder were theses and dissertations deposited by students who studied abroad and returned to the university.

2.2.7. Gulf Electronic Scientific Research database (GESR)

Besides these individual efforts, a cooperative undertaking to establish a scientific research database for all research in the Gulf States has been initiated. The following sub-section provides an overview of this project.

In 2005, the technical team responsible for establishing the electronic scientific research database selected the Kuwait Institute for Scientific Research as the host (Gulf Electronic Scientific Research database [GESR], 2013). The database includes four main components:

1. Organisations database, which includes universities, higher education institutions, and national research centres.

2. Experts-manpower database, which includes academics, researchers, and specialists in academic and research work.

3. Research database, which includes research, periodicals, articles, and proceedings of conferences.

4. Scientific-equipment database, which includes lab equipment used for scientific research.

Currently, this database has 31 participating organisations, most of which are universities. Each participating organisation is required to provide records for the database including its collection of theses and dissertations. The following table represents the participating organisations that provided records to the database.

Table 2.8: Participating organisations and their records (GESR, 2013)

Record Type	Articles	Books	Conferences	Equipment	Experts	Scientific Research Reports	Serials	Theses	Total
Kuwait University	7329	59	735	0	0	2511	0	1130	11764
KISR	1560	69	21	986	116	1344	1	157	4254
King Khaled University	0	71	0	0	0	0	71	3902	4044
KFUPM	0	161	0	0	0	0	0	3086	3247
Um Al-Qura University	0	0	0	0	2611	0	0	0	2611
Sultan Qaboos University	354	0	933	0	0	472	0	692	2451
Islamic University of Madinah	0	0	0	0	0	0	0	1877	1877
Bahrain University	55	246	109	0	0	0	1126	101	1637
King Abdulaziz University	0	2	22	36	228	259	121	59	727
Arabian Gulf University	0	0	0	0	0	0	0	700	700
King Faisal University	0	10	32	7	9	11	19	67	155
PAAET	0	0	0	0	0	0	0	101	101
Total	9298	618	1852	1029	2964	4597	1338	11872	33568

The database does not provide full text access to the available research. Users requiring the full text of a document must contact the organisation to whom the document belongs. The researcher visited the Kuwait Institute for Scientific Research during his visit to Kuwait.

According to a number of people met at the institution, the project was facing several problems. Among the main issues was a lack of cooperation and commitment from the participating organisations. Table 2.8 shows that only twelve institutions provided records to the project out of the thirty one participating. The website of the project outlined a list of the organisations that were required to provide their records. According to the project's manager, the participating institutions did not dedicate full-time staff to the project. In addition, since many organisations participated in the project from the Gulf States, differing opinions were expressed concerning privacy, with some wishing to restrict access to their research.

In addition, comparison of the records available on the project website in 2011 and 2013 reveals that these have not been updated (the researcher checked the website in 2011 and re-checked it again in 2013). The number of records noted in 2011 corresponds exactly to the number in 2013, which means that there has been no further development in the project since 2011. This may be due to a lack of the necessary mechanisms to support consortia activities. In conclusion, a lack of cooperation between academic institutions in the Gulf States is evidenced in this regard. Because of this, the consortia option was not further investigated in this research.

2.3. Technology adoption in the Gulf States

Although there is considerable published literature with regard to the adoption and development of ETD programmes in academic institutions, there is little reference to the situation in the Gulf States. From the limited number of sources identified, it seems that university libraries in the Gulf have the technological infrastructure required to adopt and develop ETD programmes; an enabler that can influence the adoption and development of such programmes. For example, Alfadhli and Johnson (2006) stated that the equipment required to establish resource-sharing systems is generally available in most university libraries in Kuwait. On the other hand, the same study revealed some barriers to the development of new technology, such as a lack of cooperation between governmental authorities and institutions, an absence of technological strategies, a lack of databases that contain information about the latest developments in the world, and a lack of research studies in information technology related areas (Alfadhli & Johnson, 2006).

As stated earlier, the study by Alfadhli and Johnson (2006) did not focus on the issues associated with ETD programmes. Instead, they discussed some issues more generally

associated with the adoption of an electronic document delivery system, which may not be applicable to ETD programmes.

Taha (2005) proposed an ETD network for the United Arab Emirates. The work claimed that there are some difficulties, such as the absence of a national strategic plan for an ETD network consortium, a lack of theses and dissertations acquisition processes and policies, funding issues, a lack of experienced personnel and technical issues. Even though Taha's conference paper provided some insights into the implementation of ETD programmes, his work was not research-based. In general, there is no in-depth research-based investigation into the enablers and barriers to the adoption and development of ETD programmes in the Gulf States. Therefore, it is clear that there is a lack of understanding of the factors that can be enablers or barriers to the adoption and development of ETD programmes in the Gulf States.

While this topic has been addressed comprehensively in other countries, particularly in the developed world, this is not so in the Arab Gulf States. This lack of literature in the AGS highlights the need for the completion of this research in these states. The following chapter reviews the literature related to the topic of this research.

CHAPTER THREE: LITERATURE REVIEW

This review of the literature establishes a framework for understanding the enablers and barriers that affect the adoption and development of electronic theses and dissertations (ETD) programmes in the Gulf States. The review begins by providing an overview of institutional repository (IR) projects, and ETD initiatives. This is followed by a discussion of factors that have been found to be enablers and barriers to the adoption and development of ETD programmes.

3.1. Institutional repository (IR) projects

In recent years, the information seeking behaviour of researchers has been shifting noticeably. In the past, researchers tended to visit libraries to find and obtain relevant materials. Researchers now often search portal sites and other online resources for information about research publications (Shin, 2006). Libraries tend to subscribe to electronic journals instead of printed journals. Users can access these journals through the library's website and obtain articles by downloading the full text directly in many cases. However, due to the inflation of the cost of journals (both printed and electronic), libraries have begun to cancel some subscriptions. Consequently, the number of publications available to users has declined (Ashworth, Mackie & Nixon, 2004). This issue raised discussions about possible alternatives that could make research freely and publicly available to anyone. One of the ideas to overcome this issue was to create institutional repositories (IR) or digital collections of institutions' research output.

An IR programme is a digital archive of the intellectual products produced by the faculty, research staff and students of an institution, and is publicly available to others, both within and outside of the institution, sometimes with access restrictions (Chang, 2003; Crow, 2002; Joint, 2006; Shearer, 2006; Westell, 2006). There is considerable variation between IR programmes in terms of the content norm and the level of access. Some IR programmes are comprehensive in scope and archive different kinds of content. Other programmes archive specific kinds of content, such as ETD. Generally, archived content may include peer reviewed articles, conference papers, electronic theses and dissertations, research papers, pre-prints and other works-in-progress, reports, monographs, enduring teaching materials, surveys and other gray literature (Genoni, 2004; Shin, 2006; Yeates, 2003). The level of

access varies between IR programmes. While some of these programmes limit access to the institution's community, others allow access by a wider audience.

The main goal of IR programmes is to improve scholarly communication (Benjelloun, 2005). This is achieved by improving access to research-related information, making it easier for researchers to disseminate and share their research results with the community, managing and preserving the digital content of the institution community, and extending the influence of a library within an institution (Benjelloun, 2005; Hockx-Yu, 2006; Genoni, 2004; Piorun, Palmer & Comes, 2007; Rumsey, 2006). IR programmes aim to give free and unrestricted access to their content online to their target community (Hockx-Yu, 2006).

This literature review focuses on ETD programmes, which are IR programmes that specifically deal with ETD. However, literature related to IR programmes is also included when discussing the factors that affect the adoption and development of ETD programmes, since some of these factors are similar between ETD programmes and IR programmes in general. The following section provides an overview of ETD initiatives.

3.2. The electronic theses and dissertations (ETD) initiative

Electronic theses and dissertations (ETD) are defined as theses and dissertations by master's and doctoral students that are digitised, submitted, archived and are accessible in electronic formats (Allard, 2003; Goldsmith, 2002; Park et al., 2007). ETD are similar to traditional or printed theses and dissertations in terms of content. Apart from many of the traditional elements of theses and dissertations, such as text, figures, tables, footnotes and references, ETD also enable the inclusion of other features such as hypertext, multimedia and powerful mark-up languages (Allard, 2003; Chandra & Perera, 2009). There are two standard types of ETDs. The first one is purely digital, that is, a student-created digital document (born digital) converted to the suitable submission format (usually PDF) and made available online with related metadata. The second type is an electronic document created retrospectively when a student's printed thesis or dissertation is scanned (Allard, 2003; Fineman, 2003; Fox, 2001; Goldsmith, 2002).

The ETD initiative emerged in the late 1980s after the development of both electronic publishing on the internet and the technological platforms and software that support it (Reeves et al., 2006). The idea of ETD was first discussed in 1987 by Universal Microfilms

International (UMI) in the United States. Virginia Polytechnic Institute and State University (Virginia Tech) and the University of Michigan as well as commercial vendors ArbotText and SoftQuad were invited to join this discussion (Allard, 2003; Chang, 2002; Fox, Hall & Kipp, 1997; Fox, McMillan & Eaton, 1999). Ten years later Virginia Tech began to acquire ETD, making it mandatory for students to submit an electronic copy of their theses (Fox et al., 1999; Kushkowski, 2005; Seamans, 2003). More institutions have since implemented this initiative, both nationally and internationally (Diepold, 2000; Suleman & Fox, 2003).

The Networked Digital Library of Theses and Dissertations (NDLTD) was established in 1996 with a mission to coordinate ETD-related activities and support the adoption and implementation of the ETD initiative (Allard, 2003; Suleman et al., 2001). NDLTD is a voluntary international federation of universities and other institutions, which have ETD programmes or are interested in learning more about the ETD initiative. The number of universities and institutions participating in the NDLTD has grown steadily since its establishment (Andrew, 2004a). In late 1999 NDLTD had 70 members, with about half of the university members being based in the United States. By 2002 NDLTD membership had nearly doubled to 133 member universities (Allard, 2003). Reeves et al. (2006) stated that NDLTD membership had reached more than 233 members from all over the world by 2006. These included institutional, consortial and individual members. However, in 2006, NDLTD started charging for membership. Before, anyone expressing an interest in ETD programmes had been considered a member (Eric F. Van de Velde, personal communication, 28/3/2012). The registered member has subsequently decreased and the current paid membership numbers 122 members (NDLTD, 2012).

Some of the academic institutions in developed countries such as Canada and the United Kingdom have developed their own ETD programmes (Reeves, 2010). In Canada, for example, the University of Waterloo developed its own ETD programme in 1996, aiming to provide unrestricted, remote access to theses and dissertations (Jewell, Oldfield et al., 2006). In other cases, rather than developing their own, some institutions have joined other ETD programmes provided in neighbouring countries, especially in the initial stages, such as in Australia and New Zealand (Wells & Cargnelutti, 2004). The ADT programme for example, includes forty seven universities from Australia and New Zealand (Council of Australian University Librarians [CAUL], 2012). New Zealand universities were included in the programme as full members in 2005, when the ADT officially became the Australasian

Digital Theses Program (CAUL, 2013). However, by 2011, according to Cullen and Chawner (2011), all New Zealand universities had their own institutional repositories and have already mandated the deposit of theses and dissertations.

In recent years, developing countries, such as India, Pakistan, Malaysia, Algeria, Zimbabwe, and South Africa have also adopted ETD programmes (Ali, 2009; Bakelli & Benrahmoun, 2003; Chikonzo, 2009; Ghosh, 2007; Ubogu, 2001). In South Africa, some universities have developed electronic repository systems (Vermaak, 2005). Rhodes University, for example, put its first electronic theses on the web in 1998 (Ubogu, 2001). Algeria has also established such programmes and there were more than 1,463 ETD available online in 2003 (Bakelli & Benrahmoun, 2003). An ETD project was also established in Malaysia at the end of 2005 (Yusop, 2008). Some university libraries in developing countries have chosen an easier way to digitise theses and dissertations and make them available online, by employing commercial companies to undertake the process on their behalf (Tennant, 2000). By doing so, libraries do not require special infrastructure for developing such a programme.

In summary, the idea of IR and ETD programmes has received greater consideration and attention in academic institutions in both developed and developing countries since 1996. More and more academic institutions throughout the world have started to adopt and develop ETD programmes, including a significant number in developing countries. The adoption and development of these programmes is influenced by many factors. The following section discusses some of the factors that have been found to be enablers and barriers to the adoption and development of ETD programmes.

3.3. Factors influencing the adoption and development of ETD programmes

Several factors and issues have been found to either positively or negatively influence the adoption and development of ETD programmes. These include the perceptions about ETD programmes (perception about the benefits of these programmes and about legal issues), technological, administrative and funding issues. The following sub-sections provide discussions of these issues.

3.3.1. Perceptions of ETD programmes

ETD programmes are increasingly gaining more and more appreciation from postgraduate students, academic staff, librarians, publishers and key administrators and managers. In recent years, supervisors, research students and university librarians have become well aware of the ETD initiative (Vijayakumar et al., 2007). However, postgraduate students and their supervisors have been found to have concerns about legal issues, such as copyright, plagiarism and prior publication. Therefore, they need to be informed about these issues as early as possible to allay these concerns. Awareness of these programmes seems to have had an impact on the successful adoption of these programmes. This awareness is raised by promotional and advocacy activities that lead to cultural changes – changes in the attitudes – of various groups towards ETD programmes. The following sub-sections discuss the perceptions of the various groups related to these programmes.

3.3.1.1. Appreciation of the benefits of ETD programmes

ETD programmes provide several benefits to postgraduate students, academic staff, libraries, and academic institutions. Postgraduate students have been found to be appreciative of the benefits of these programmes and they also think that the processes required to participate are much less difficult. According to Jewell, Oldfield et al. (2006) ETD programmes widen postgraduate students' and researchers' access to searchable databases of abstracts and, in some cases, access to the full text of theses. In addition, students have the option of remote and electronic submission of their theses, thus saving on photocopying and binding costs (Copeland & Penman, 2004; Jewell, 2000; Ramirez, 2009; Read, 2009; Smith & Champagne, 2009; Zulauf & Shreeves, 2010). They also have the opportunity to express their research results in more creative and flexible ways (Copeland & Penman, 2004). As a result of making their theses and dissertations publicly available, students' work will become better known and their research will be read more widely (Royster, 2007; Fonseca, 2010). Usage of ETD programmes has significantly increased all over the world compared to the use of paper theses and dissertations (Goldsmith, 2009; Hagen, 2010; Tamminga, 2010; Troman, Jacobs & Copeland, 2007; Zhang, Lee & You, 2001). Hagen (2010) provided a comparison between the use of paper theses and electronic theses and stated that the use of the latter has increased by 145,000% at West Virginia University in the first two years of implementing an ETD

programme. In March 2010, the website of the Caltech thesis repository received 19,000 visits from more than 14,000 unique visitors (Coles & Johnson, 2010). In Brunel University there were more than 764,444 downloads of the ETD in the month of March 2010 alone (Brown & Sadler, 2010). Usage statistics show that these programmes are also well used in developing countries. For example, there were approximately 196,977 downloads per month from 25 different countries at the University of the Western Cape ETD programme in South Africa (Matshaya, 2009).

In addition to this benefit, postgraduate students appreciate online access to ETD, especially if they are encouraged by their supervisors (Bevilacqua, 2007), and in Australia and the United Kingdom, for example, it was found that most of them agreed to the dissemination of their theses and dissertations immediately after submission (Greenberg & Forrest, 2005; Pickton & Mcknight, 2006; Roberts, 1997). In the UK, research students at Loughborough University ranked the dissemination of their research as the most important benefit (58.8%) motivating the deposition of their theses and dissertations (Pickton & Mcknight, 2006). Moreover, Virginia Tech's graduate students find the process of converting their theses and dissertations into PDF files and submitting them electronically much less difficult (McMillan, 2005). These benefits as well as the degree of ease in the processes of participating in ETD programmes work as enablers, by making students more willing to participate in these programmes.

From the point of view of academic staff, research supervisors may derive many advantages from ETD programmes. For example, they can access ETD from other institutions very easily in order to compare and contrast standard formats and the writing styles of students' work (Copeland & Penman, 2004; Glisson & Chowdhury, 2002). Moreover, academic staff can use these programmes as a source of information for suggesting topics to potential dissertation candidates and for tracing the development of research in specific fields (Glisson & Chowdhury, 2002). Another benefit that academic staff perceive is that students work harder and produce better work when they know that their theses will be made publically available on the internet (Suber, 2008).

Space has always been a major issue facing libraries (Bevan, 2005), and ETD programmes provide the advantage of saving shelf space (Swain, 2010). They also avoid the need for staff to spend time retrieving and re-shelving printed theses (Bower, Courtois & Turvey-Welch, 2009: Copeland et al., 2005). Bower et al. concluded their evaluation of the adoption of an

ETD programme at Kansas State University by stating that processing ETDs was much quicker and involved less handling by library staff. Furthermore, providing an ETD service to users may improve the level of customer satisfaction (Copeland & Penman, 2004).

Academic institutions can also benefit from these programmes by reducing the costs associated with managing and disseminating paper records, speeding up procedures and reducing paper handling and storage space needs for staff in the postgraduate office (Jewell, Oldfield et al., 2006). Bevan (2005) claimed that moving to electronic theses submission may allow the renovation, rationalisation and streamlining of the administrative processes for the submission of theses within university registries. Moreover, ETD programmes help to increase access by others to the research produced by the institution and thus promote the research profile of the institution (Copeland & Penman, 2004; Copeland et al., 2005; Wong, 2006; Zulu, 2009). Copeland (2008) added that in recent years institutions have realised that the benefits of adopting ETD programmes outweigh the problems that need to be overcome.

However, though these different groups, especially graduate students and academic staff, appreciate the benefits of these programmes, they still hold some negative attitudes towards them. The following sub-sections discuss these perceptions.

3.3.1.2. Concerns regarding legal and other issues

A large proportion of postgraduate students and academic staff have negative attitudes towards ETD programmes due to their concern about legal issues. Amongst several other reasons, the low rate of participation often reflects legal concerns in relation to intellectual property rights, plagiarism and prior publication (Bandara, 2008; Bogdanski & Copeland, 2009; Brown, 2010).

3.3.1.2.1. Concerns regarding copyright

Copyright or intellectual property rights are significant barriers that often confront institutions that have adopted ETD programmes (Copeland, 2008; Copeland & Penman, 2004; Ghosh, 2007; Ghosh, 2009; Leung, 2005; White, 2008). The copyright owner has the exclusive right to decide how a work is modified, reproduced and distributed (McMillan & Fox, 2001). In the case of ETDs, the copyright owner is generally the student (Surratt, 2005).

In the Gulf States context, the Omani copyright law, for example, also gives the author the right to publish, to prohibit modification, and to own his/her product (Royal Decree 65/2008, 2008). When a student submits a portion of an ETD as an article to a commercial publisher, the agreement between the student and the publisher may necessitate a transfer of copyright to the publisher (Barwick, 2007). This may restrict the conditions under which the student may release the thesis in an ETD programme (Surratt, 2005). In this regard, it seems that there is a general misunderstanding amongst postgraduate students and academics about the rights they have to re-use their publications after they have signed copyright transfer agreements (Barwick, 2007; Gadd, Loddington & Oppenheim, 2007). Gadd et al. made a comparison between two funded surveys conducted at Loughborough University to gauge academics' attitudes towards the rights protection of their research. Both surveys have highlighted that academics lacked certainty about copyright ownership of their teaching material and research outputs. Davis and Connolly (2007) also conducted semi-structured interviews among academic staff at Cornell University. Amongst several reasons for not participating in the university IR, academics reported the confusion they have about copyright. That is, they are unsure of what to do with their papers and what is permitted by the publisher.

In addition, Copeland (2008) stated that one area of concern related to copyright is the inclusion of third party material. This can even apply when students have already sought permission to reproduce work by other authors in their theses. Therefore, if students need to participate in an ETD programme, they need to seek additional permission from those authors in order to make their theses publically available, since the former permissions may have been granted on the assumption that theses would be deposited in paper form, which would be viewed by only a very small number of readers (Copeland & Penman, 2004). Copeland (2008), therefore, indicated that universities intending to digitise theses retrospectively in order to include them in their repositories need to take this issue into consideration.

Andrew (2004b) also highlighted this issue and stated that there is ambiguity regarding third-party materials when theses are made publically available online. He suggests that authors should seek permission for any third-party material included in their theses given their knowledge of material that requires copyright clearance included in their work. Andrew believes that it would be hard for institutions to check each thesis for any such breach of

third-party copyright. Therefore, he suggests that authors should be trained and informed of their copyright responsibilities.

3.3.1.2.2. Concerns regarding plagiarism

Plagiarism is another issue of concern to postgraduate students and their supervisors (Copeland, Penman & Milne, 2005; Cullen & Chawner, 2010; Evans, 2006; Gadd et al., 2007; Greig, 2005; Narang, Kailash, Meher & Arora, 2005; Satyanarayana & Babu, 2007; Stanton & Liew, 2012). Greenberg and McLean (2011) conducted an online survey (distributed through several listservs including ETD-L (listserv run by the NDLTD), CGS-L (listserv run by the Council of Graduate Schools), and a variety of announcements and links to the survey distributed though social media, such as Twitter and Facebook) involving 268 faculty, faculty administrators, graduate students, and librarians and found that more than half of faculty and students indicated that theses and dissertations would be more likely to be plagiarised when available electronically. However, students expressed less concern about their work being plagiarised. This shows that although students thought that the online availability of their theses makes them more vulnerable to plagiarism, they were less sensitive to the idea of plagiarism (Greenberg & McLean, 2011). A recent study conducted in New Zealand revealed that one of the issues of most concern to students is plagiarism (Stanton, 2010). Stanton conducted semi-structured interviews (eight interviewees) and an online questionnaire (251 respondents) amongst Massey University doctoral students and found that students were more concerned about plagiarism than other issues associated with publishing in an institutional repository. Students and academic advisors argue that plagiarism and misuse are facilitated by making theses and dissertations electronically accessible through the web (Bandara, 2008; Copeland et al., 2005; Friend, 1998; Jewell, Oldfield et al., 2006; Lippincott, 2006). Copeland et al. (2005) stated that although some research supervisors expressed concerns about the increased possibility of plagiarism taking place if theses are freely available on the web, it would be easier to discover instances where this activity has taken place when the material is published on the web. Thus, if a plagiariser has easy access to a document, a reviewer can retrieve the source file with a phrase search in the available internet search engines (Bevan, 2005; Copeland et al., 2005; Gruppetta, 2005; Jewell, Oldfield et al., 2006).

Several types of anti-plagiarism software have been developed, such as Turnitin and Ferret software (Barrett & Malcolm, 2006). These software applications help to detect potential plagiarism by the theses' authors prior to submission as well as the subsequent plagiarism of theses available online. In addition, such software is much more efficient than manual plagiarism checking through internet search engines, although it is not necessarily 100% reliable (Barrett & Malcolm, 2006). A study was conducted at the Pennsylvania State University in 2006 involving the review of 429 assignments submitted by students enrolled in five sections of Geography. The results showed that the manual methods of detection identified 2.8% of the assignments as containing plagiarism, while Turnitin software identified plagiarism in 12.8 % of the assignments (The Effectiveness of Turnitin, 2010). Barrett and Malcolm (2006) conducted a study at the University of Hertfordshire with 182 master's students and found that Turnitin software identified 41.0% of work submitted by students as potentially containing plagiarised content while academics identified only 26.0% of such work as potentially containing such content. Batane (2010) conducted a study at the University of Botswana involving 272 students whose levels of plagiarism were measured, without their knowledge, using Turnitin software. The software was then introduced to the students and the level of plagiarism again tested after informing students that their work would be checked using the software. The results demonstrated a significant drop in the extent of plagiarism to below 4.3% after Turnitin was introduced to students. However, he concluded his study by stating that the use of anti-plagiarism software did not completely eliminate plagiarism. As a result of such possibilities, concerns remain amongst postgraduate students (at Virginia Tech) regarding the plagiarism of their work, and therefore, a preference to impose access restrictions on theses and dissertations is evident (Evans, 2006). Some ETD programmes (University of Parma, Italy) allow students to request an embargo period from six months to three years, during which time only the metadata and abstract of embargoed materials may be freely accessible (Bevilacqua, 2007).

3.3.1.2.3. Concerns regarding prior publication

Another concern of faculty advisors and postgraduate students is that making their research widely accessible on the web will be considered as prior publication (Davis & Connolly, 2007; Horwood, Sullivan, Young & Garner, 2004; Lippincott, 2006; McMillan et al., 2011) when articles based on chapters of theses are submitted by their authors for consideration by

academic journals (Glavash, Comstock & Stone, 2000; McMillan, 2005). As a result of such concerns, faculty advisors are advising postgraduate student authors to restrict access to their theses (McMillan, 2005; McMillan et al., 2011). Faculty advisors believe that they are protecting their students' work by giving such advice (McMillan et al., 2011). A survey conducted at Virginia Tech to gauge graduate students' attitudes towards ETD programmes (3,564 respondents during the fiscal years 2000-2005) concluded that faculty advisors, due to their concerns about prior publication, increasingly tend to advise postgraduate students to restrict access to their theses (McMillan, 2005). McMillan noted that the percentage of academic advisors (at Virginia Tech) who advised their students to restrict access increased from 46% in 2001 to 55% in 2005. Another survey conducted online in the UK revealed that the greatest concern amongst academics who did not deposit material in IR projects (169 out of 542 respondents) was that they would not be able to publish such material in the future (Gadd, Oppenheim & Probets, 2003). A PhD thesis by McCutcheon on the "Impact of Publishers' Policy on Electronic Theses and Dissertation (ETD) Distribution Options within the United States" found that out of 109 respondents, 87 (80%) reported that concerns regarding prior publication issue is the major reason for delaying the publication of their theses and dissertations in the institution repository (McCutcheon, 2010).

Nevertheless, the publishers' point of view on this issue stands in stark contrast. Publishers have been found to have no obvious objection to electronic theses and dissertations. In a survey conducted in 2000 at Virginia Tech involving 166 alumni whose theses or dissertations had been accessible worldwide for more than one year, no respondents reported encountering resistance from publishers accepting their manuscripts (derived from their theses) for publication, even when their theses were available online (Eaton et al., 2000). Several studies conducted at later years revealed similar findings. Bevan (2005) and McCutcheon (2010) concluded that publishers rarely refuse publication of an article based on the online availability of the thesis or dissertation. Out of 109 universities, two universities reported publishers rejecting articles submitted for publication that are derived from electronically available theses (McCutcheon, 2010). Seamans (2003) conducted an online survey in the USA involving 121 journal titles, 18 academic presses, and nine commercial presses. The survey aimed to find out whether or not publishers view ETDs as prior publications. The survey findings indicated that the majority of the respondents (more than 90%) would consider works derived from ETDs for publication. The explanation given was

that dissertations are too long for published articles and must be rewritten and undergo extensive revisions before publication. On the other hand, a small number of respondents viewed ETDs as prior publications. They argued that if ETDs are publically and freely available, why should people buy them? Seamans concluded her study by stating that publishers' positive views towards ETD programmes should encourage postgraduate students and their faculty advisors to participate in ETD programmes. Another recent study, involving 75 journal editors and 53 university press directors, found that 96% of the respondents would accept works derived from ETDs for publication (McMillan et al., 2011).

Barwick (2007) commented on the issue of copyright restrictions after authors publish their articles in commercial journals. He reviewed publishers' websites and found that most publishers would allow some form of archiving in repository systems. However, he stated that there are some types of copyright restriction imposed by the publishers. For example, Taylor and Francis has an 18-month embargo on social science articles. Another recent study found that publishers do not perceive access restrictions as a factor when deciding to publish a book or an article from an ETD. The quality of the submitted paper is the main concern for publishers, not accessibility to online theses and dissertations (McMillan et al., 2011). Therefore, it seems that a substantial majority of the surveyed publishers do not view ETDs as prior publications (Barwick, 2007; McCutcheon, 2010; Seamans, 2003).

3.3.1.2.4. Commitment to open access

Commitment to open access is found to influence the adoption and development of ETD programmes. Academic supervisors, and sometimes university administrators (at UK universities), are less enthusiastic about the idea of making theses and dissertations available online (Greig, 2005). Greig explained that some supervisors and administrators think that theses are not an important part of the research literature and that it is not worth making them publicly available. Bevan (2005) supported this argument by asserting that some academic staff at Cranfield University believe that master's level theses represent the initial stages of research only and, therefore, are not worth being made generally available. Allard (2003) stated that one of the factors that delayed the adoption of ETD programmes is the lack of real interest and commitment on the part of faculty members.

3.3.1.3. Promotional and advocacy activities

The negative perceptions towards ETD programmes (see section 3.3.1.2) mainly exist due to the absence of adequate promotional and advocacy work (Brown, 2010; Greig, 2005). Among several other reasons, lack of awareness of the existence of institutional repositories was the major barrier to depositing in these (Cullen & Chawner, 2010). As discussed earlier, there is a weak understanding surrounding ETD programmes and related issues such as legal concerns. The individuals concerned, in particular postgraduate students and academic staff, should have a comprehensive understanding of the importance of ETD programmes and all related issues such as submission, copyright, plagiarism and prior publication (Berendt et al., 2003; Bogdanski & Copeland, 2009; Brown, 2010; Copeland & Penman, 2004; Greig, 2005; Horwood et al., 2004). An evaluation of ETD-related activity in the UK conducted as part of the Electronic Theses project (which involved a consortium led by The Robert Gordon University) concluded that there must be an appreciation of the benefits achievable from the endeavour, and that these must be conveyed to both the content providers and the potential users of the service (Copeland & Penman, 2004). An appreciation of the areas of concern is a further requirement. Copeland et al. (2005) also found that the key issue is the need to target advocacy work since different market groups within institutions have different concerns and priorities. This highlights the importance of the availability of appropriate promotional activities in shaping people's perceptions concerning ETD programmes and alleviating their concerns surrounding legal issues such as copyright, plagiarism and prior publication. The following paragraphs discuss the importance of conducting promotional activities directed at the different groups involved in ETD programmes.

As students are the creators and authors as well as the users of ETDs, they must be well informed about these programmes and the benefits they offer (Copeland et al., 2005; Lippincott, 2006; Porter & Coles, 2003). They also have to be aware of other issues such as plagiarism, copyright and future publication (Brown, 2010). One of the main recommendations of a user survey conducted at Humboldt University involving 101 doctoral students was to inform students at the earliest opportunity about ETD programmes (Berendt, Brenstein, Li & Wendland, 2003). Brown (2010) summarised existing research from Germany, India, Italy, South Africa, the UK and the US and concluded that legal issues have been identified as the chief concern of postgraduate students and supervisors and, therefore,

must be discussed as early as possible with students to change their perceptions towards ETD programmes in order to increase their willingness to participate. Early promotional activities would, thus, have a significant impact on the adoption of these programmes (Asner & Polani, 2008; Brown, 2010). McMillan (2005) provided a summary of over 7000 online surveys completed during the period from 2000 to 2005 via Virginia Tech. She concluded her study by stating that despite the decreasing numbers of students served by workshops, these proved very useful, especially in the early stages.

As a result of conducting promotional and advocacy activities to inform students about ETD programmes, students' perceptions towards ETD programmes have been found to be positive. For example, postgraduate students in the USA have been shown to be enthusiastic about the wider distribution of their work and the downloading by others of their research (Eaton, Fox & McMillan, 2000).

Studies have shown that academic staff have strong influence on their students (Pickton & McKnight, 2006; Stanton & Liew, 2012). A study by Stanton and Liew (2012) showed that most doctoral students (79.5%; n = 189) indicated that they would agree to publish their work if recommended by their supervisors. According to Stanton and Liew, this finding demonstrates the positive influence of supervisors' recommendations on students' willingness to deposit theses in the institution's repository. As academic staff have direct influence over their students, they too have to be aware of the benefits and other issues related to these programmes. For example, some faculty advisors express concern that making ETDs available on the web would be considered as prior publication and would, thus, lead to difficulties in having work published in academic journals (McMillan, 2005). Although Owen, Hackman and Harrod (2009) concluded in their study, which was conducted at the University of Maryland, that a low percentage of academic staff (29 out of 131 respondents = 22.1%) have actually advised students against the publication of their electronic theses, other studies have shown that academic staff are increasingly advising their students to restrict access to their theses and dissertations (McMillan, 2005; Pavani & Mazzeto, 2009). McMillan (2005) noted that the percentage of academic advisors (at Virginia Tech) who advised their students to restrict access increased from 46% in 2001 to 55% in 2005. Pavani and Mazzeto (2009) also analysed an ETD programme in Brazil to find out about the access restrictions of ETDs. They found that the number of restricted ETDs has increased from less than 5% in 2005 to more than 15% in 2008. They also found that the

percentage of supervisors who supported restricted ETDs has increased from about 5% in 2005 to more than 25% in 2008. Based on the findings of these studies, it is clear that academic staff have concerns regarding the public availability of ETDs. To counteract this trend, academic staff and students can be invited to seminars to encourage them to understand and appreciate the benefits offered by ETD programmes and to discuss other issues associated with these programmes (Copeland & Penman, 2004; Jewell, 2009).

In addition, as discussed in sub-section 3.3.1.2.3, postgraduate students and academic advisors' concerns regarding future publishing are not supported by the majority of publishers. Studies involving publishers have concluded that these rarely refuse to publish articles derived from online theses and dissertations that are already available (Barwick, 2007; Bevan, 2005; Eaton et al., 2000; McCutcheon, 2010; Seamans, 2003). In addition, publishers do not perceive access restriction as a factor when deciding to publish an article derived from an ETD. Publishers' positive views towards ETD should thus encourage postgraduate students and their research advisors to participate in ETD programmes. Therefore, it is apparent that there is a need to inform academic staff that depositing their material in IR programmes does not necessarily preclude them from being published in high-impact journals (Horwood et al., 2004). In addition, some ETD programmes allow students to request an embargo period so that they can publish several papers out of their theses before making their theses available online (Andrew, 2004b; Greig, 2005; McCutcheon).

As a result of such advocacy work, academic staff attitudes towards ETD programmes are generally supportive. Goldsmith (2002) surveyed faculty attitudes towards ETD programmes at the Louisiana State University (in the USA) and the results showed that postgraduate faculties (N= 289, M= 3.87 on a scale of 5; 1=strongly disagree and 5=strongly agree, SD= 1.04) have positive perceptions regarding these programmes. He concluded that these positive perceptions are based on the appreciation of the benefits of ETD programmes, including the fact that these programmes will increase the access of the faculty to important research literature. He further stated that the majority of academic staff thought that the advantages of ETD programmes outweighed their disadvantages (m= 3.61, SD= 1.00). Greig (2005) and Royster (2007) supported this by revealing that the majority of academic staff, including PhD supervisors, were keen on the idea of ETD programmes. Greig indicated that academic staff at the University of Glasgow became more interested in ETD programmes after they received clarification on several issues, such as prior publication and copyright.

Similar findings were found at the University of Nebraska-Lincoln, with faculty members becoming very enthusiastic to participate in the IR after being informed of the benefits of their participation and having had their concerns dealt with (Royster, 2007).

Librarians play an important role in processing and maintaining ETD programmes. Lippincott and Lynch (2008) conducted a survey covering 143 US higher education institutions and found that 93.1% of the responses indicated that librarians took the leading role in the establishment of ETD programmes. Librarians have to be informed about their benefits and kept informed of international developments in this area (Copeland & Penman, 2004; Lippincott, 2006). Promotional and advocacy activities can help foster appreciation of these programmes amongst librarians. In Italy, for example, most university librarians at the University of Parma seemed interested in the development of ETD programmes (Bevilacqua, 2007) as these programmes are believed to improve the level of service provided to students and can also save storage space. These benefits encourage librarians to support and participate in ETD programmes (Copeland et al., 2005).

Key administrators and managers in academic institutions have a significant influence on the adoption and development of ETD programmes as they need to be approached in order to change the institution policies and procedures (Copeland et al., 2005). They have to be consulted to identify the policies, procedures and university regulations relating to the submission of theses and dissertations that would need to be modified and updated for ETD programmes to be introduced (Copeland & Penman, 2004). Like other groups, the university administrators need to be targeted by promotional and advocacy activities, as early as possible, in order to obtain their support for the adoption of ETD programmes (Copeland & Penman, 2004).

In summary, the literature indicates that people are increasingly appreciating the benefits of ETD programmes. Appreciating these benefits makes people more willing to support and participate in these programmes. Therefore, the appreciation of the benefits is considered as one of the enablers to the adoption of ETD programmes. The second enabler is the availability of appropriate promotional and advocacy activities. The literature shows that creating awareness amongst people of the benefits of ETD programmes and of related issues such as copyright and plagiarism, increases their enthusiasm for these. As a result, it is evident that the availability of appropriate promotional activities increases the appreciation of the benefits of ETD programmes and, thus, facilitates their adoption.

3.3.2. Technological factors

Technological factors have been found to affect the adoption and development of ETD programmes. Several technological issues need to be considered when adopting these programmes. These include the availability of the technological infrastructure, the selection of appropriate software, maintaining long-term preservation, the submission process, scanning paper theses, and issues concerning interoperability among several ETD programmes. The following sub-sections shed light on these issues.

3.3.2.1. Availability of technological infrastructure

The existing technological infrastructure of academic institutions is seen as one of the enablers to the adoption and development of ETD programmes. Academic institutions and university libraries generally already have the infrastructure required to establish ETD programmes, especially if they are already providing access to electronic journals or other digital documents (Bandara, 2008). Bandara discussed the achievements of the ETD project at the University of the West Indies (UWI). She stated that one of the main components that facilitated the implementation of this project was the availability of the necessary technological infrastructure. The UWI had already computerised most services and the library and most of the departments were equipped with computers and a fully functional network (2008). Ubogu (2002) conducted a survey in South Africa involving 37 academic institutions and concluded that none of the institutions surveyed that had adopted ETD programmes provided additional hardware infrastructure for establishing ETD programmes for housing on either the institutional or the library server. However, it is worth highlighting that the implementation of ETD programmes at these institutions was not fully functional. Several institutions had only the abstract and bibliographic records available worldwide and others made the full-text available on the intranet only.

3.3.2.2. Selection of appropriate software

Selecting appropriate software for building an IR programme in general or an ETD programme in particular is a significant issue (Copeland & Penman, 2004; Fletcher, 2009; Genoni, 2004; Henty, 2007). A number of suitable software packages are available that can support different document types, including ETD (Narang et al., 2005). These include

DSpace (developed by the Massachusetts Institute of Technology Libraries in partnership with Hewlett-Packard), EPrints (developed at the University of Southampton), ETD-db (developed at Virginia Tech), FEDORA, Greenstone and several other software packages (Jones & Andrew, 2005; Narang et al., 2005). Some of this software is open source.

The selection of an appropriate software package is affected by a number of circumstances, one of which is funding. Some universities use open source software to minimise the costs associated with building ETD programmes (Jones & Andrew, 2005). Selection of the appropriate software is also based on the purpose and the capacity of the IR system (Wong, 2006). For example, an IR system designed to include multiple content types will need different software from one that aims to include only ETD. D-Space, EPrints and ETD-db are widely used for IR systems, but D-Space appears to be the most popular software for ETD programmes in different countries (Copeland et al., 2005; Ghosh, 2007; Jewell, Judge et al., 2006; Mishra, Vijaianand, Noufal & Shukla, 2007; Satyanarayana & Babu, 2007; Vermaak, 2005). Nevertheless, in 2006 D-Space had several limitations in searching and reporting capabilities. For example, it did not allow a search of a specific date to be made, but rather offered only a date browse facility (Atkinson, 2006).

3.3.2.3. Maintain long-term preservation

Another technological challenge is to maintain the long-term preservation of digital materials. Digital preservation refers to the series of planned and managed actions needed to ensure continued access to digital materials for as long as necessary (Hockx-Yu, 2006). IR and ETD programmes are not only designed to provide immediate access to research outputs, but are also responsible for providing long-term archiving and preservation of digital materials (Shearer, 2006). The preservation of ETD is an issue as few institutions consider long-term preservation issues when making format and procedural decisions about their programmes (Teper & Kraemer, 2002). A survey conducted through the NDLTD revealed that less than 30% of the participating institutions had a current preservation strategy (Worley, 2008). Bellamy (2005) warned about this issue, stating that preservation and archival practices have not yet been developed completely and, therefore, if digital objects cannot be preserved, a significant part of the knowledge will be lost. Chang (2002) also stated that without paper copies of theses and dissertations as backup, recovery would be much more complex and expensive, if not impossible. It is important to highlight that these references are somewhat

dated and preservation technologies have improved significantly. Phillips and Alemneh (2011) evaluated the ETD programme at the University of North Texas. They believed that the long-term preservation and accessibility of theses and dissertations is being improved through the use of a new "data desiccation" method of access. Nevertheless, the issue of long-term preservation is still of concern in practice. A recent study conducted in India (questionnaires distributed among 17 academic institutions that have ETD repositories) showed that respondents rated the problem of long-term preservation as the most significant barrier (82.35%) (Hirwade, 2011). To overcome such undesired consequences, appropriate preservation policies and procedures should be implemented. This, in turn, highlights the interrelationship between policies and the issue of thesis preservation. Some universities implementing ETD programmes have a submission policy whereby they ask students to submit only electronic copies of their theses. Therefore, there is no printed copy available as a backup. However, other universities ask students to submit their theses in both electronic and printed forms (Jones & Andrew, 2005).

The process of digital preservation is complex. It involves several activities throughout the lifecycle of the digital object, such as longevity of the storage medium, preserving metadata, rights management and technology obsolescence (Halbert, Skinner & McMillan, 2009; Shearer, 2006). Technology obsolescence (software and hardware) is a significant technical threat in terms of digital preservation (Hockx-Yu, 2006). The speed of changes in technology means that the timeframe during which preservation actions must be taken in respect of digital documents is much shorter than for paper (Hockx-Yu, 2006; Marcum, 2009).

Format obsolescence is also linked to the preservation issue. Even though format obsolescence can be managed, it is likely to be time consuming and expensive for institutions (Pockley, 2005). Therefore, the formats suitable for long-term preservation should be decided in the early stages of implementing ETD programmes (Copeland & Penman, 2004). Factors that affect the selection of the appropriate format for long-term preservation include cost and ease of use. For example, XML (eXtensible Mark-up Language) has many advantages – it is independent of hardware and operating systems, flexible, well formed, easily converted into PDF or other formats, and is a non-proprietary format. XML's most important advantage in this regard is that it is a recommended format for full-text search and long-term preservation (Park et al., 2007). However, XML is not a commonly used format, because the staff time

required for conversion is costly and it is much harder for students to encode their theses in XML for submission (Jewell, Oldfield et al., 2006).

Portable Document Format (PDF) is the format that most ETD programmes have tended to adopt (Jewell, 2000; Jin, 2004; Plumer, 2009; Strodl et al., 2007). It has many advantages – it provides flexibility between different computer platforms, several document formats can be easily converted to PDF and it represents the original document accurately (Jewell, Oldfield et al., 2006; Straat, 2008). However, Park et al (2007) claimed that even though there is a lack of evidence that PDF will have text loss, it is not ideal for long-term preservation purposes. They stated that for archiving purposes, a file format must be flexible and able to preserve the original information as much as possible. In that, they believed that PDF did not incorporate some information, such as scientific formula, space data, and electronic images without any data loss into a PDF file.

It seems that there is no single robust file format that institutions can rely on for submission, access and long-term preservation purposes. Due to this, a number of institutions have decided to accept both PDF and XML formats to ensure both long-term accessibility and long-term preservation (Park et al., 2007). Applying two formats means that institutions have to agree to accept the extra time and costs associated with doing so.

3.3.2.4. The submission process of ETD

The submission process has also been found to be of concern to institutions intending to adopt and develop ETD programmes (Kahn, 2010). Although mediated submission has been applied in some institutions, the majority of institutions prefer self-submission of ETD. Both methods have advantages and disadvantages. Mediated submission requires postgraduate students to pass an electronic copy of their theses to a third party who will be responsible for converting the theses to a suitable format and submitting them with the relevant metadata. However, this type of submission carries large administrative overheads (Jones & Andrew, 2005). In contrast, self-submission requires the students themselves to convert their theses to a suitable format prior to submission, complete a web-based metadata submission form and then upload their theses (Jewell, Oldfield et al., 2006). However, due to the absence of training and lack of information technology skills, there may be many problems in the digital files submitted by students, including virus infection, absence of the cover page of the thesis, lack of some parts or chapters of the thesis, and formatting problems (Ubogu, 2001). Bakelli

and Benrahmoun (2003) evaluated more than 1463 digital theses and dissertations submitted to the CERIST ETD system and found that about 37% of these electronic objects could not be integrated or archived directly into the existing ETD collection.

Encouraging students and faculty staff to use self-submission methods is another challenge (Glavash et al., 2000; Shearer, 2006). Shearer (2006) conducted a survey involving 23 academic institutions in Canada and found that faculty members were not depositing their work on a regular basis. This low participation may be a reflection of their concern regarding copyright and the additional workload required to deposit their work. Students are also less likely to submit their theses electronically if it is optional. In such a situation, submitting an electronic thesis does not eliminate the need for a hard copy version and submitting an electronic version of the thesis just adds one more step to an already long process of thesis approval and submission (Glavash et al., 2000).

3.3.2.5. Retrospective digitisation of paper theses and dissertations

Another technological issue is the scanning of existing collections of printed theses and dissertations. Mishra et al. (2007) evaluated the digitisation of 9000 theses and dissertations at the Indian Institute of Technology Kanpur and commented that retrospective conversion of such collections is a challenging and painstaking job, especially with such a large number of theses and dissertations. They explained that many aspects affect the quality of the scanned theses and dissertations, such as the age of the theses (30 to 40 years), printing quality and the complex nature of theses with graphs, figures, charts, tables, and mathematical and scientific formulae. The scanning process can also result in problems related to missing, duplicate and misplaced pages, data conversion and file naming, which need extra time to be dealt with. Extra time and effort are required to ensure both accuracy with regard to the number of pages, and image integrity for the display (Worley, 2008).

3.3.3. Administrative factors

Administrative issues have also been found to be influencing the adoption and development of ETD programmes. Administrative issues can be divided into two main sub-categories: policies and responsibilities. "Policies" refer to all regulations and procedures necessary to facilitate the adoption and development of an ETD programme. "Responsibilities" refer to those who are responsible for the various processes required in an ETD programme.

3.3.3.1. Policies

The shift from the traditional method of submission of theses in hard copy to the voluntary or mandatory submission of ETD involves several stages to modify and update university regulations and procedures for degree completion and submission and the operational responsibilities of the postgraduate students' office (Copeland, 2008; Jewell, Judge et al., 2006; Lippincott, 2006). For example, the submission process needs to be updated to accommodate ETD, the forms completed by students when they deposit a copy of their thesis in the library need to be modified to include agreement about the publication of the work on the internet, and policies on copyright and intellectual property rights, authors privacy, plagiarism, format, and access need to be revised (Copeland et al., 2005; Das, Sen & Dutta, 2007; Ramirez & McMillan, 2010). The new policies and regulations should also clearly assign responsibility for the submission, storage, preservation, and access of ETD (Jewell, 2000).

However, changing and updating university regulations and policies in this way is a time-consuming and, sometimes, frustrating process (Greig, 2005; Jones & Andrew, 2005). It involves lengthy discussions between libraries, academic departments, university administrators and computer service staff (Copeland et al., 2005; Russell, 2006). Several universities have been found by various studies to lack appropriate policies when deciding to adopt ETD programmes. In India, for example, university librarians believed that government policies and administrative support could represent an obstacle to creating ETD programmes. Vijayakumar et al. (2007) conducted a survey covering Indian university librarians, PhD supervisors and PhD research students. Out of sixty-five librarians who responded to the survey, only twenty-two indicated that they had adopted policies to collect theses in electronic format. Bevilacqua (2007) also found that most faculties' regulations at the University of Parma did not mention the deposit of electronic copies of theses in the library when the university decided to adopt an ETD programme.

Several studies have concluded that the level of participation of staff and students in IR or ETD programmes is not satisfactory, especially when participation is voluntary (Cullen & Chawner, 2010; Foster & Gibbons, 2005; Jones & Andrew, 2005; Kim, 2007; Piorun et al., 2007; Sale, 2006). Kelly (2007) evaluated the IR system at the University of New Orleans and concluded that the commitment to open access and the community culture play a

significant role in encouraging and facilitating self-submission of work. To counteract such low commitment, institutions started to mandate the submission of electronic copies of theses and other research (Shearer, 2006). Sale evaluated the ADT programme and analysed the impact of mandatory policies and indicated that voluntary deposition of ETDs resulted in repositories collecting less than 12% of the available theses, whereas mandatory deposition caused the deposit rate to grow towards 100%. Therefore, mandating the submission of electronic theses is one of the most effective approaches to collecting ETDs (Jones & Andrew, 2005). Studies conducted in New Zealand showed varied perceptions regarding the acceptance of voluntary or compulsory policies. Stanton and Liew (2012) conducted an online survey of doctoral students at Massy University (251 respondents). The majority of respondents (77.3%) indicated acceptance of the mandatory submission policy. On the other hand, Cullen and Chawner (2011) surveyed academic staff at twenty academic institutions in New Zealand (546 responses). The majority of respondents (73.7%) did not support the compulsory depositing of peer-reviewed publications. These studies indicated that mandating the depositing of theses is more acceptable than mandating the depositing of peer-reviewed publications.

With regard to mandating the depositing of theses and dissertations, there has been a shift in this regard. Although some countries seem further ahead with ETD development and mandate the depositing of theses, a range of publications from 2006 to 2010 indicate that only a few years ago this was not the case. Russell (as recently as 2006) stated that few universities in the UK have local procedures in place for voluntary or mandatory e-submission of theses. Most universities in India have not yet opted for mandatory electronic submission of theses and dissertations (Swain, 2010). According to Cullen and Chawner (2011), all New Zealand universities have mandated the depositing of theses and dissertations. It seems that academic institutions had already mandated the depositing of electronic copies of theses and dissertations. However, it is not only the absence of adequate policies and regulations that can affect the adoption and development of ETD programmes; other factors can also have a significant impact. For example, different access policies provide varying levels of protection for students' copyright. Some policies favour open access and may therefore "lead to negative consequences such as violation of copyright, breach of author agreements or failure of patent applications" (Surratt, 2005, P. 5). As we have discussed earlier (see section 3.3.1.2.1.), students may publish their thesis in peer-

reviewed journals and this may consist of transferring the copyright to the journal, which in turn, may restrict student from making thesis electronically available in the future.

3.3.3.2. Expertise needed for ETD programmes

Academic and university libraries are usually responsible for collecting and organising theses and dissertations and making them accessible to the campus community and possibly to other users via inter-library loan services. However, with ETD programmes, the libraries have an expanded role. As well as cataloguing theses and dissertations, university libraries are possibly also expected to provide training and support to authors and work with information technology staff to deliver a seamless service (Chang, 2002). More processes, especially technological processes, such as preservation and migration of content and metadata management are required to deal with ETD and more staff need to be allocated to deal with them (Hahn, 2009). A survey by Allard (2003) conducted in the USA revealed that staff shortages at one university were one of the reasons university administrators had decided to withdraw from ETD programmes. In this regard, it should be noted that the shortage of staff could have an impact on the institutions' decision to adopt these programmes.

Nevertheless, the number of personnel needed to establish and maintain ETD programmes varies amongst universities. ETD programmes may not require a large contingent of experts to establish or maintain these programmes, especially in the initial stages. For example, the Virginia Tech library established its ETD programme with one librarian and one programmer (McMillan, 2001). Ubogu (2001) also concluded his South African survey by stating that none of the institutions surveyed had hired additional staff to establish ETD programmes. Team members at each university had accommodated the ETD project as part of their normal tasks. Therefore, it seems that institutions can establish ETD programmes with their available programmers and librarians. Although the two papers are somewhat dated, they still serve as useful references as they provide pointers on the early stages of the establishment of ETD programmes. McMillan's 2001 paper is still cited in the latest Guide for Electronic Theses and Dissertations as a useful reference (the guide was updated in April 2011). However, it has to be acknowledged that McMillan's paper is an individual case study only and the number of staff required would vary depending on each institution structure and size.

3.3.3.3. Project champion

Another administrative issue is the assignment of responsibility for adopting and developing ETD programmes. The role of project champions is highlighted in the literature. Cullen and Chawner (2010) conducted a series of interviews with key library managers and staff in twelve academic institutions in New Zealand as well as a randomised national survey of academics and found that some institutions "tended to find a champion (high profile researchers or groups)" (p. 138) to promote their institutional repository project. According to the authors, champions could promote these projects by highlighting the increased exposure of their research. Similarly, a project champion can also highlight the benefits of ETD programmes to the research students. According to Greig (2005), the presence within the senior management of the university of a person responsible for informing and discussing the legal issues of concern to postgraduate students and academic staff can make a big difference and have a significant impact on students' participation in ETD programmes. Such a person can take the lead at the relevant committees and is likely to have the power to push through the necessary changes in the regulations. Greig concluded her evaluation of the ETD project at the University of Glasgow by stating that the absence of such a person was a barrier to the adoption and implementation of an ETD programme at the University of Glasgow. This finding highlights the importance of the availability of a project champion when adopting an ETD programme. This, in turn, highlights the interrelationship between the availability of a project champion and people's perceptions about ETD programmes.

Nevertheless, the role of project champions is not always positive. Cullen and Chawner (2010) concluded their study by stating that the availability of project champions did not necessarily result in an increase in works deposited in the institutional repository.

3.3.4. Funding factors

Allard (2003) stated that certain institutions surveyed could not establish an ETD programme and others decided to withdraw from ETD programmes due to funding problems. Shin (2006) identified funding as a factor affecting the adoption and development of ETD programmes in South Korea, where many colleges and universities have local repositories for ETDs. He stated that it is not cost effective for each university to set up a server to capture, accumulate and provide access to ETD, especially for smaller institutions.

Another funding issue arises when university libraries desire to retrospectively scan existing printed/bound theses and dissertations and attempt to track their authors. Libraries should not digitise a printed thesis and make it available online without the permission of the copyright owner or a proper licence (Perry & Callan, 2006). However, it is impossible to secure the necessary permission if the author cannot be located. Permission-seeking may therefore not only cost time and money, it may also prove fruitless (Lippincott, 2006; Perry & Callan, 2006). In this regard, it should be noted that the shortage of funds could have an impact on the institutions' decision to adopt these programmes.

3.4. Summary

In summary, several factors have been identified as enablers and barriers to the adoption and development of ETD programmes. One of the main enabling factors is the appreciation of the benefits of these programmes. Various groups derive benefits from ETD programmes. Appreciation of the benefits of these programmes has been found to shape the perceptions of such groups and, therefore, may be regarded as an enabler to the adoption and development of such programmes. Promotional activities can highlight the benefits that each group gains from ETD programmes and discuss the issues surrounding these, thereby eliminating the concerns that some groups may have in this regard. Promotional and advocacy activities are thus regarded as significant factors in achieving attitudinal change towards ETD programmes. In general, culture change is the main aim that promotional and advocacy work strives for. Culture change means making each group well aware of ETD programmes and, thus, more willing to support and participate in these. Therefore, institutions intending to adopt an ETD programme should conduct appropriate advocacy work with the various groups implicated (Copeland & Penman, 2004). Tempered

Having the existing institutional technological infrastructure and the personnel required to establish ETD programmes are also seen as enablers. Due to the nature of academic institutions, the technological infrastructure and staff required to establish and develop an ETD programme, especially in the early stages, appear already to be in place. This may be the case too in small institutions and in the early phases of the implementation of these programmes. However, this may not hold true if the volume of theses and dissertations to be handled and managed is substantial. In addition, there is a need for more staff to maintain

ETD programmes in the long-term. The shortage of staff and funds could have an impact on institutions' decisions to adopt these programmes.

Even though the above enablers have been found to have a significant impact on the adoption and development of ETD programmes, the review of the literature also identified some barriers to the adoption and development of ETD programmes. Perceptions of legal issues are seen as obstacles to the adoption and development of these programmes. It seems that there is a lack of understanding of legal issues surrounding ETD programmes, such as copyright, plagiarism and prior publication. A lack of understanding of these issues amongst postgraduate students and academic staff makes them less willing to participate in such programmes. Such uncertainty of these legal issues highlights the need for conducting promotional activities in order to discuss these issues with those concerned. The literature indicates that people become more enthusiastic and motivated towards these programmes after they have received an explanation and clarification of the issues involved. It is interesting to note that none of the studies that discussed legal issues has linked these concerns to the institution's decision to adopt ETD programmes. Although postgraduate students and academic staff hold concerns regarding legal issues, such as plagiarism, copyright and prior publication, studies have shown that some institutions provided solutions to alleviate these concerns (Bevilacqua, 2007 & Evans, 2006). Solutions provided included embargo periods from six months to three years and restricted access to theses. There is no evidence to suggest that legal issues have direct influence on institutions' decisions to adopt ETD programmes.

In addition, there have been many discussions surrounding technological issues that need to be considered and resolved prior to the adoption and development of ETD programmes. These include software selection, preservation, submission and scanning issues, and institutions' infrastructure. The literature indicates that these technological issues require more time, money and effort to be handled. Moreover, various administrative issues have to be tackled when establishing an ETD programme. The administrative issues were also found to be time-consuming, especially the process of updating and changing university policies and regulations. The literature also identifies funding as a barrier, especially within small institutions that establish their ETD programmes individually. The literature highlights the benefits of consortia effort in relation to this, which is more practical in terms of money and effort than establishing such programmes individually (Shin, 2006). Although there are

several technological issues that need to be handled when adopting ETD programmes, there is no evidence to suggest that these issues have direct influence on the institutions' decisions to adopt these programmes.

The literature also identifies interrelationships between the issues discussed above. For example, legal issues are linked to some of the administrative issues, such as policies and responsibilities. For example, the absence of promotional staff, whose aim it is to give the university community a better understanding of ETD programmes and to convince them to participate in these, may lead to a lack of understanding on some legal issues and, thus, a lesser rate of participation. It seems that administrative issues can have positive or negative influences on students' participation in ETD programmes. The literature indicates that adoption of appropriate policies can make students more willing to participate in these programmes. In addition, funding has been found to affect some technological issues. For example, it affects the selection of the appropriate software and the appropriate format for long-term preservation and the decision of the appropriate submission method. These factors and issues need to be considered and resolved as early as possible in order to adopt and develop ETD programmes successfully.

In conclusion, when comparing the literature discussing the Arab Gulf States (see Chapter 2) to literature discussing these issues in other countries, it is clear that there is a considerable knowledge gap concerning the situation in these states in that no research-based literature has discussed the factors influencing the adoption and development of ETD programmes in these states. Therefore, this research aims to explore the situation in the Arab Gulf States in depth.

The following chapter discusses the theoretical models that have been found to be relevant to this research and which have been used to inform the design of the preliminary research framework used in the study.

CHAPTER FOUR: CONCEPTUAL FRAMEWORK

This chapter discusses the development of a conceptual framework for analysis based on the literature findings as well as considering the Unified Theory of Acceptance and Use of Technology (UTAUT). Determinants and dimensions of this model were taken into account during the development of the framework.

A number of theoretical models have been developed to explain and predict user acceptance of new technologies. Some of these models have similar constructs and determinants but use different terminology (see examples in sections 4.1.1, 4.1.2, 4.1.3, 4.1.4). Some are limited in scope and others are quite comprehensive. For example, the Theory of Planned Behaviour (TPB) focuses heavily on behavioural aspects. However, it is limited in that it deals with perceptions of control rather than with actual control issues (Conner & Sparks, 2005). Therefore, researchers are confronted with a choice of models and generally choose constructs across the models (Venkatesh, Morris, Davis, G., & Davis, F., 2003). For example, Tetiwat (2003) integrated elements from four models: Hofstede's Cultural Dimensions Theory, Diffusion of Innovation (DOI), Technology Acceptance Model (TAM) and Theory of Planned Behaviour (TPB) to compare the adoption of web-based educational technology in New Zealand and Thailand. According to Venkatesh et al. researchers chose one or two models and ignored contributions from alternative models. To eliminate this confusion amongst researchers who intend to study users' intentions and behaviour towards new technologies, it is useful to use a theory that can integrate the available models into one unified model. In response to this need, Venkatesh et al. reviewed the major models and formulated a unified theory of user acceptance.

It is necessary to clarify some terms before discussing the determinants and constructs of the UTAUT model. According to Rogers (2003), an "innovation" is something that is perceived as new by individuals and can be an idea, a practice or an object. "Adoption" is defined as the process through which an institution decides to purchase the systems and technology (Lee et al., 1999).

4.1. The Unified Theory of Acceptance and Use of Technology (UTAUT)

There is currently very little understanding of the factors that influence the adoption and development of ETD programmes in the Gulf States. This research was the first study to explore this issue in depth. The major focus of the research was the exploration of the key factors affecting the adoption and development of these programmes. This research therefore considered the UTAUT model and the literature review findings as a springboard to map out a number of possible factors that may affect the adoption and development of ETD programmes in the Gulf States.

The Unified Theory of Acceptance and Use of Technology (UTAUT) integrates elements from eight prominent models of technology acceptance. These models are the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), the Theory of Planned Behaviour (TPB), a model combining TAM and TPB (C-TAM-TPB), the Model of PC Utilisation (MPCU), the Diffusion of Innovation (DOI) Theory and Social Cognitive Theory (SCT). The UTAUT tries to incorporate the fragmented models on individual acceptance of information technology into a unified theoretical model. It was empirically tested using data from four organisations over a six-month period at three different points in time. Then it was cross-validated and confirmed using new data from a further two organisations. The first empirical test within four organisations and the second cross validation test within two additional organisations provided strong empirical support for this theory (Venkatesh et al., 2003). This theory posits four direct determinants of behavioural intentions and usage behaviour: performance expectancy, effort expectancy, social influence and facilitating conditions (Figure 4.1). Moreover, it posits the role of four key moderator variables: gender, age, experience and voluntariness of use.

One of the possible limitations of the UTAUT model is that it is more applicable to investigate factors at the individual level. Many researchers stated that the UTAUT addresses how individual differences determine the acceptance and use of technology (Oliveira & Martins, 2011; Oye, Lahad & Robin, 2011; Oye, Noorminshah & NorZairah, 2011). Straub (2009) examined three adoption theories, including the UTAUT, and found that although teachers' personal opinions on factors such as ease of use for a specific technology may be considered, it is generally not the essential factor when making major technology decisions. Other external factors, such as state standards, cost, available funds, security and technical

support influence the overall decision to adopt a new technology. He concluded that successful enabling of adoption is most likely to happen at the connection of the cognitive, effective and contextual factors and he believed that the UTAUT provides an aspect of this process.

Despite this possible limitation, review of the literature indicates that the UTAUT has been applied to many educational settings to understand teachers' and students' behavioural intentions on the acceptance and use of new technologies (Oye, Lahad et al., 2011; Oye, Noorminshah et al., 2011; Straub, 2009). Oye, Noorminshah et al. (2011) examined the effect of the UTAUT on Information and Communication Technologies (ICT) usage in Nigerian tertiary institutions. They found that performance expectancy, effort expectancy and facilitating conditions constructs have a major positive influence and control on the behavioural intention to accept and use ICT amongst academic staff.

Based on the initial examination of the websites of the Arab Gulf universities (see Chapter 2, section 2.2), a small number of universities appeared to be at the early stages of adopting ETD programmes. However, the majority had still not adopted these programmes. Therefore, this research focusses on the intention of these universities to adopt these programmes based on individuals' perceptions. In addition, institutional and contextual factors were examined and linked to personal perceptions. Facilitating conditions constructs of the UTAUT provide aspects for examining these factors (see section 4.1.4). These factors were discerned not only from the respondents' perceptions, but through the researcher's visits to these universities and through the documentation collected from these institutions (see Chapter 5, section 5.3.2). Therefore, the respondents' perceptions were analysed and discussed within their context and in alignment with the documents collected from their institutions.

Figure 4.1: The Unified Theory of Acceptance and Use of Technology (UTAUT)

Adopted from Venkatesh et al., 2003.
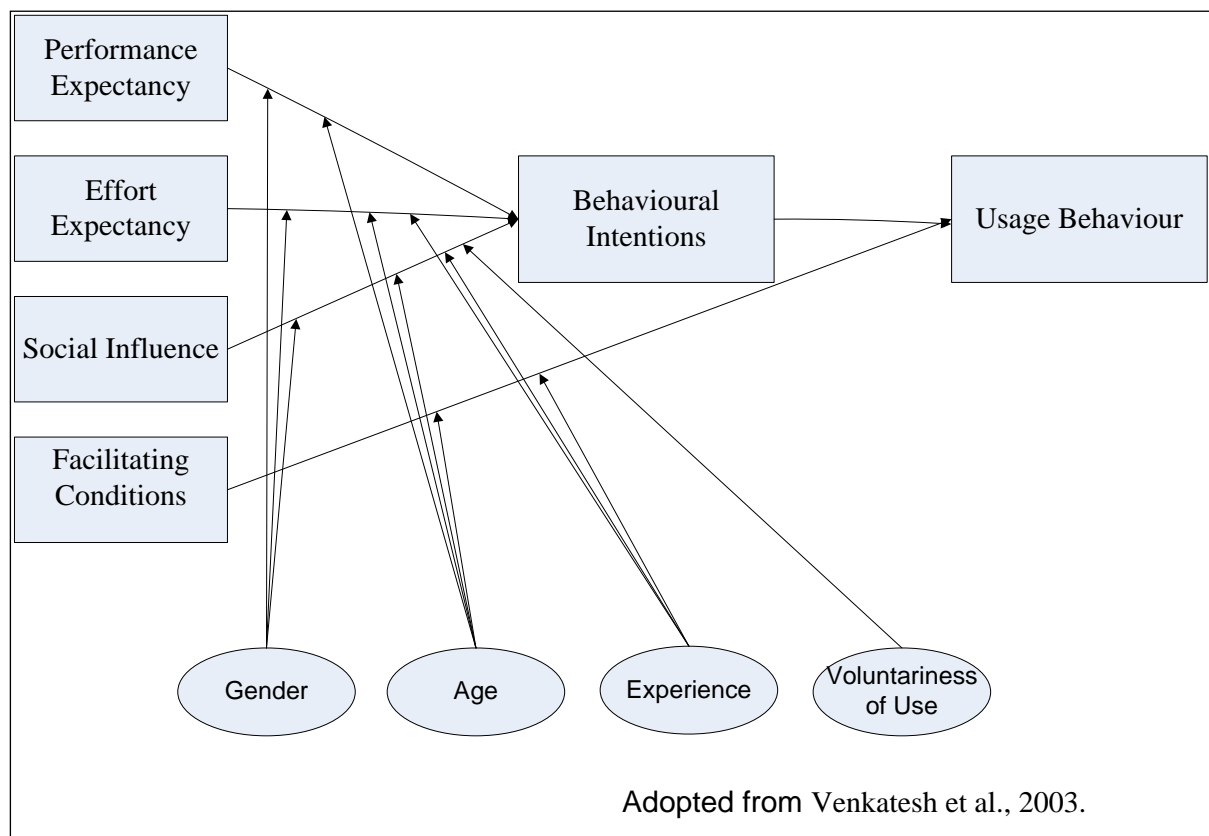
4.1.1. Performance expectancy

This is one of the direct determinants of behavioural intentions and usage behaviour, and means the degree to which an individual believes that using an innovation will help him or her to attain gains in job performance (Venkatesh et al., 2003). This determinant has been used in other models, but with different terminology, such as "perceived usefulness" in TAM and C-TAM-TPB, "extrinsic motivation" in MM, "job-fit" in MPCU, "relative advantage" in DOI and "outcome expectations" in SCT. In his Diffusion of Innovation (DOI) Theory, Rogers identified "relative advantages as the degree to which the innovation is perceived to be better than an idea that came before it, which can be measured in terms of economic benefits, social prestige, convenience and satisfaction (Rogers, 2003). He also added that the more an innovation is compatible with the values, experience and needs of potential users, the more rapid its rate of adoption will be (Compatibility construct). In the UTAUT, this determinant (Performance expectancy) has been found to be the strongest predictor of intention in both voluntary and mandatory settings (Venkatesh et al., 2003). It has been found

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that this construct was the strongest predictor of intention within the eight models at all points of measurements.

4.1.2. Effort expectancy

Effort expectancy is defined as the degree of ease associated with the use of an innovation. Few models have used this construct, with different terms such as "perceived ease of use" in TAM, "complexity" in MPCU and "ease of use" in DOI. Rogers (2003) stated that innovations that are simple to understand will be adopted more rapidly than those that are not. Venkatesh et al. (2003) found this determinant to be significant in both voluntary and mandatory usage contexts. However, it is significant only during the first time period, becoming less significant over periods of extended and continued usage.

4.1.3. Social influence

The social influence determinant is the degree to which an individual perceives that important others believe he or she should use the new innovation (Venkatesh et al., 2003). In other words, this determinant means how an individual's behaviour is influenced by the way in which they believe others will view them as a result of having used the technology. This determinant is also represented in other models with different terms, such as "subjective norm" in TRA, TPB and C-TAM-TPB, "social factors" in MPCU and "image" in DOI. Ajzen (1991) claimed that human belief is influenced by social pressure to perform or not to perform a particular behaviour. In the UTAUT this determinant has been found to have a direct effect on individuals' intentions in mandatory contexts. In contrast, it has been found to have no effect on users' intentions in voluntary contexts (Venkatesh et al., 2003). However, social influence in mandatory settings appears to be significant only in the early stages of the individual's experience with the technology.

4.1.4. Facilitating conditions

Facilitating conditions are another direct determinant and refer to the degree to which an individual believes that an organisational and technical infrastructure exists to facilitate the use of the technology (Venkatesh et al., 2003). As with the previous determinants, this determinant is represented in other models, sometimes with different terms, such as

"perceived behavioural control" in TPB and C-TAM-TPB, "facilitating conditions" in MPCU and "compatibility" in DOI. Ajzen's (1991) Theory of Planned Behaviour (TPB) states that if people have strong beliefs about the factors that will facilitate behaviour, they will have high perceived control over behaviour. Conversely, if people have weak beliefs about factors that will discourage behaviour, they will have a low perception of control. In the UTAUT this determinant has been found non-significant in predicting intention when both performance expectancy and effort expectancy constructs are present. However, this determinant has been found to have a direct influence on users' usage behaviour, especially with increasing experience as they find several avenues for help and support throughout the organisation.

In addition to these four direct determinants of user acceptance and usage behaviour, the UTAUT posits three indirect determinants of users' intentions. These are attitude towards using technology, self-efficacy and anxiety. However, these have been found not to have a significant influence on behavioural intention (Venkatesh et al., 2003).

4.1.5. Use of UTAUT in research

A review of previous research showed that the UTAUT model has been cited by a large number of studies and used in both qualitative and quantitative research (Williams, Rana, Dwivedi & Lal, 2011). Williams et al. conducted a systematic review of 450 citations of the UTAUT model. They categorised the citations of UTAUT into four categories: citations with no use of UTAUT, citations with use of UTAUT with different research methods, citations with partial use of UTAUT, and citations with complete use of UTAUT. With regard to citations with use of UTAUT with different research methods, they found that nine citations were based on qualitative studies while seven were based on quantitative studies. With regard to citations with partial use of UTAUT, they found that a total of 11 studies made partial use of UTAUT or altered the model to suit their research needs. An independent examination by the researcher of the use of UTAUT indicates that some researchers used the exact constructs of the model, while others modified the constructs or added new constructs to the model. BenMessaoud, Kharrazi and MacDorman (2011) used the UTAUT model in a qualitative study. They conducted 21 semi-structured interviews with surgeons in the Indiana State Medical Association. Their findings merged some of the sub-constructs of UTAUT and added two new main constructs: Attitude towards Using Technology and Leadership. They also recommended that future quantitative research, such as scaled questionnaires could be

created based on their modified UTAUT model to measure the prediction rate of each UTAUT construct in the adoption of robotic-assisted surgery. In Chapter Eight, this research also recommends future quantitative research to measure the constructs of the revised framework. Although this research took a qualitative approach in the initial stage, the UTAUT model was chosen for this study as it integrates elements from eight prominent models, as stated earlier in this section. This research considered this model and took into account its constructs in order to develop a modified framework for analysis (more discussion on the use of this model is presented in section 4.2).

4.2. The purpose of a conceptual framework

The preliminary research framework was developed by considering the constructs taken from the model as well as from the literature findings. However, it was assumed that there may be other factors that might emerge after actual investigation. The aim was to stay open to these other possible factors and to allow the researcher to look extensively at the research problem in the field. It was also assumed that some of the preliminary factors might be modified based on the research findings. The literature shows that researchers use models in different ways. One of these approaches is to use them partially and modify the constructs based on their research findings. It is important to highlight that this research did not adopt the model as the research theoretical framework. That is to say, like many other studies (Duyck et al., 2010; Huser, Narus & Rocha, 2010; Jong & Wang, 2009; Nov & Ye, 2009), this research made partial use of UTAUT and altered the model to suit the research needs instead of testing the model. As stated earlier, the use of the UTAUT model was simply to understand some of the possible factors that might affect the adoption and development of ETD programmes in the Gulf States. It was used as a starting point to facilitate the collection of appropriate data that could provide a complete picture of the factors affecting the adoption and development of ETD programmes in the Gulf States. As Miles and Huberman (1994) stated, the development of the conceptual framework helps less experienced researchers to focus more on the study's key issues. For this research, the preliminary research framework helped the researcher to understand the possible factors affecting the adoption and development of ETD programmes, which helped in asking appropriate questions during the first phase of data collection. On some occasions, participants forgot to talk about some relevant issues. Thus, the researcher

was able to draw participants into talking about these issues and discover their views about them.

4.3. Preliminary conceptual framework of factors influencing the adoption and development of ETD programmes

The preliminary conceptual framework for this study included factors that may influence the adoption and development of ETD programmes. These influencing factors were derived from two main sources:

- From the reviewed literature, which includes many studies and research on the issues affecting the adoption and development of ETD programmes in different countries and, therefore, different contexts.
- From the Unified Theory of Acceptance and Use of Technology (UTAUT). As stated earlier, this theory integrates elements from eight models of technology acceptance.

As a result of combining these two sources, four main factors were identified in this preliminary framework for analysis. Factors identified from the literature were integrated under four categories. A preliminary research framework of factors influencing the adoption and development of ETD programmes is discussed in the following paragraphs and presented in Figure 4.2.

Figure 4.2: A preliminary framework of factors influencing the adoption and development of ETD programmes
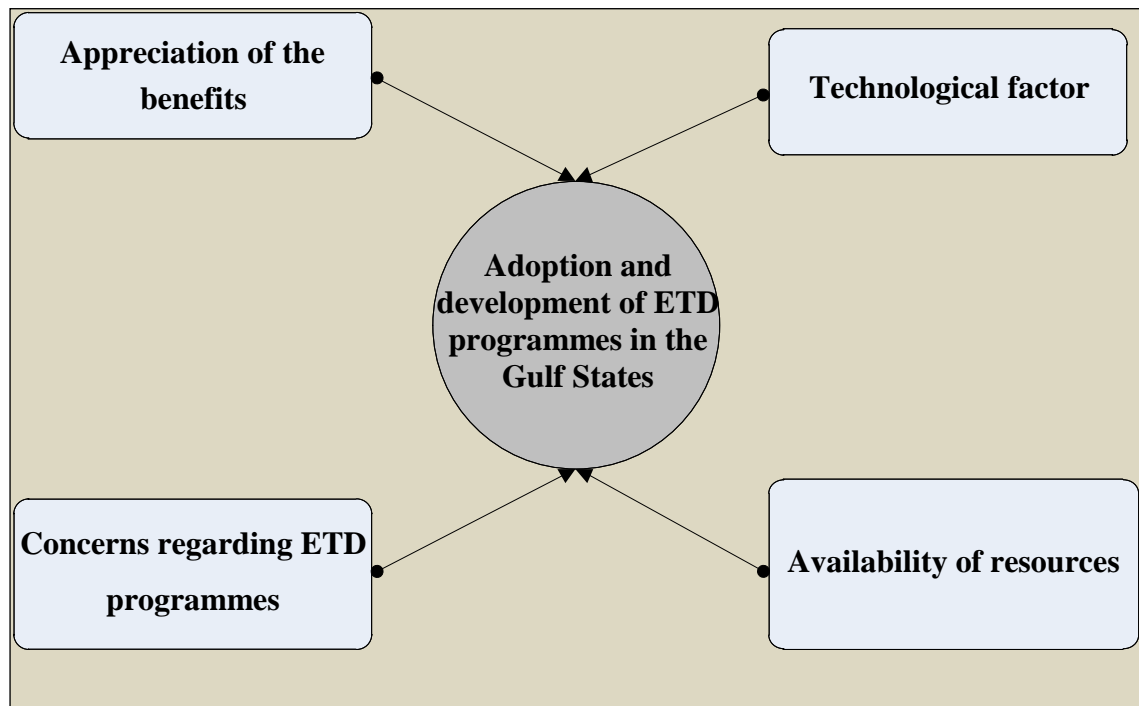
4.3.1. Appreciation of the benefits

The literature review showed that the appreciation of the benefits of ETD programmes was one of the enablers to the adoption and development of these programmes. It has been found that postgraduate students, academic staff, library managers, system administrators, and postgraduate officers may be involved in these programmes and can derive benefits from these. For example, Bevilacqua (2007) concluded his study by stating that most university librarians seemed interested in the development of ETD programmes because they thought that these programmes could improve the level of service provided to students and also save storage space.

This research was interested in the attitudes of all these five groups towards the benefits of ETD programmes. This factor is also consistent with the performance expectancy determinant of UTAUT. According to Venkatesh et al. (2003), performance expectancy is one of the strongest determinants of people to use a new technology. Therefore, it is expected that the perceptions and appreciation of the benefits of ETD programmes would be one of the main enablers to the adoption and development of these programmes in the Gulf States.

4.3.2. Technological factors

The literature showed that several technological issues need to be considered before and during the adoption and development of ETD programmes. Technological issues, such as software selection, preservation and archival issues, the mediated or self-submission issue and the scanning issue, have been found to be very problematic. For example, digital preservation has been found to be costly and complex. Shearer (2006) states that digital preservation involves several stages of activities throughout the lifecycle of the digital object, such as longevity of the storage medium, preserving metadata, rights management, and technology obsolescence.

This research was interested in the perceptions of all parties involved in ETD programmes of the ease associated with the technological processes required in the adoption and development of these programmes. Participants' perceptions of the difficulties or easiness of these technological processes would influence their attitudes towards the adoption of ETD programmes. This factor is also consistent with the effort expectancy determinant of UTAUT.

4.3.3. Concerns regarding ETD programmes

The literature review identified several concerns postgraduate students and academic staff have about ETD programmes. These concerns were mainly about legal issues, including concerns regarding copyright, plagiarism, prior publication, and future publication. The reviewed literature also identified that there were some cases where academic staff advised their students to impose access restrictions on their theses (McMillan, 2005). This shows that postgraduate students' decisions might be influenced by their research supervisors. Moreover, Greig (2005) claimed that the lack of an individual responsible for promoting the ETD programme in the university community was a barrier to the adoption and implementation of an ETD programme at the University of Glasgow.

This research was interested in the perceptions of all parties involved in ETD programmes about issues related to these programmes and how others influence the attitudes of all these parties. This factor is also consistent with the social influence determinant of UTAUT. According to Venkatesh et al. (2003), the social influence determinant plays a significant role in directing the attitudes and behaviours of other people.

4.3.4. Availability of resources

The literature review identified that the adoption and development of ETD programmes requires several resources. These resources may include: technological infrastructure, funding, appropriate staff and appropriate policies. With regard to university regulations, for example, Bevilacqua (2007) stated that most faculties' regulations made no mention of the deposit of theses copies in the library, even after the university had decided to adopt an ETD programme. Russell (2006) stated that few universities have local procedures in place for voluntary or mandatory electronic submission of theses.

This research was interested in how different parties involved in ETD programmes believe that the available resources and infrastructure will help in the adoption and development of these programmes. This factor is also consistent with the facilitating conditions determinant of UTAUT. According to Venkatesh et al. (2003) the availability of the appropriate technological and organisational infrastructure would have a significant effect on the adoption and development of ETD programmes in the Gulf States.

4.4. Summary

In summary, this research intends to investigate the enablers and barriers to the adoption and development of ETD programmes in the Gulf States. To explore what these factors are and to make sense of these, a sound conceptual framework was required to provide a basis for describing the pattern of adoption. The preliminary conceptual framework for analysis was informed by perspectives from the literature review and UTAUT model.

The following chapter discusses the research design and methodology. There is also a discussion of how the researcher established the validity and accuracy of the qualitative and quantitative research findings.

CHAPTER FIVE: STUDY DESIGN

This chapter discusses the research design for data collection and analysis. This research consisted of two sequential phases (exploratory design). Phase one involved conducting semi-structured interviews with key informants. Marshall (1996) stated that key informants, as a result of their personal skills, or position within a society, are able to provide extra information and deeper insights into what is going on around them. Based on the findings of this qualitative investigation, an online survey was developed to test and explore, in a larger sample, the issues identified in the interviews. This chapter is divided into five sections. Section one discusses the research paradigm used to guide this research. Section two discusses the research methodology used in this research (mixed methodology research). Section three outlines the qualitative research methods used including data collection and analysis (phase one). Section four outlines the quantitative research method used including data collection and analysis (phase two). Section five outlines the limitations and delimitations of this study.

5.1. Research paradigm

A paradigm is a way of looking at the world in order to understand its complexity and to make sense of it (Lincoln & Guba, 1985). It can also be seen as a basic set of viewpoints that direct an action (Denzin & Lincoln, 1994). Pickard (2007) identified three major research paradigms in information research: positivism, postpositivism and interpretivism.

The focus of this research is to understand the current situation in university libraries in the Gulf States with regard to the factors affecting the adoption and development of ETD programmes. This investigation is primarily exploratory as little knowledge exists about the situation in the Gulf States. An exploratory study is undertaken when little is known about the situation at hand (Cavana, Delahaye & Sekaran, 2001). According to Creswell and Plano Clark (2011) the major intention of the exploratory design is to generalise qualitative findings based on a few individuals from the first phase to a larger sample collected in the second phase. In addition, they state that the

exploratory design typically emphasises the qualitative aspect. Thus, the primary approach for this research was interpretivist (phase one). In addition, post positivist approach was used as a secondary approach in phase two. According to Creswell and Plano Clark, researchers can use multiple paradigms in a single mixed methods study. Thus, interpretivist and post positivist paradigms were used to guide this mixed methods research.

The interpretive approach maintains that realities vary in nature and are time and context bound and that, therefore, there is no universal truth (Bryman, 2004; Creswell & Plano Clark, 2011; Pickard, 2007). This stance means that there are multiple realities for an individual, and these individual realities are embedded in their context and are shaped and changed over time as a result of the interaction between the researcher and the subject (Denzin & Lincoln, 2005). This research intended to investigate the situation in university libraries in the Gulf States based on participants' perceptions. Factors that might affect the adoption and development of ETD programmes in the Gulf States may differ from other countries, since the time and the context are different, and the acquired knowledge will alter as a result of the interaction between the researcher and the participants.

Interpretive research seeks to understand the whole context; that is, the interpretation of an action or opinion must take account of the setting in which it is produced (Pickard, 2007; Klein & Myers, 1999). In other words, interpretivist researchers provide a comprehensive account of what goes on in the setting being explored (Bryman, 2004). Bryman also explained that details are important because of their significance for the subjects and also because they provide an account of the context within which people's behaviour is observed. This perspective required this research to consider as much as possible the situation in university libraries in the Gulf States in determining the factors influencing their adoption and development of ETD programmes. This means that participants' opinions should be interpreted in the context of the factors and issues presented around them.

Interpretive research attempts to understand phenomena through the meanings that the research participants assign to them (Bryman, 2004; Creswell, 2003; Walsham, 2006). Bryman (2004) stated that people are capable of attributing meaning to their situation. This research seeks to determine a shared understanding of the situation in university

libraries with regard to the adoption and development of ETD programmes. In other words, the purpose of this research is to understand what participants believe and how they feel about and interpret the factors that affect the adoption and development of ETD programmes in university libraries in the Gulf States.

Finally, the interpretivist stance was chosen because it has grown to become an essential research practice in Information Science and other fields, with the potential to produce deep insights into phenomena under investigation (Klein & Myers, 1999; Walsham, 2006). This research aims fundamentally to provide deep insight into the factors that may affect the adoption and development of ETD programmes in university libraries in the Gulf States, something made possible by the nature of interpretive research.

Postpositivism has also been used as a complementary approach since this constitutes exploratory research. According to Creswell and Plano Clark (2011), the major purpose of the exploratory design is to generalise qualitative findings based on a few individuals from the first qualitative phase to a larger sample collected during the second quantitative phase. They state that the exploratory design begins with and prioritises the collection and analysis of qualitative data to elicit multiple perspectives and deeper understanding and, based on the qualitative findings, collects quantitative data to identify statistical trends (postpositivist approach). It was specifically for this reason that the postpositivist approach was used to guide the second phase of this research. Quantitative methods, such as surveys and experiments are typically used within postpositivist paradigms (Creswell & Plano Clark, 2011). Surveys provide more generalisablity of the research findings (Denscombe, 2007). Therefore, this research employs a postpositivist approach in the second phase to support and provide more generalisability of the primary qualitative findings.

Postpositivism differs from the original positivist paradigm in its qualitative notion of the interpretation of the results. The postpositivist approach allows prior knowledge to have an impact on the interpretations of results (Pickard, 2007). For this research, the qualitative findings collected in the first phase were used to interpret the quantitative findings. As a result, the philosophical stance of this research was located closest to both interpretive (primary) and post positivist paradigms (secondary).

5.2. Research methodology (mixed methods research)

The research methodology is the direction the researcher wishes to take regarding the questions being asked based on the nature of the research problem (Pickard, 2007). A researcher can take a quantitative angle by asking questions like "how many" or "how often". Qualitative research asks questions regarding "why" and "how". This research applies a combination of qualitative and quantitative methods. Specifically, this research uses the exploratory sequential design when the researcher starts qualitatively to explore a topic before building to a second quantitative phase (Creswell & Plano Clark, 2011). Primarily, this research intends to explore the situation in the Gulf States in terms of the adoption of ETD programmes and ask participants their views on this situation and why they hold those views. The research also discusses how the perceived issues can be addressed. For this initial stage, qualitative research methods are used to answer the research questions. Based on the findings of the interviews, an online survey was developed (phase two). The aim of the survey was to test and explore, in a larger sample, the issues identified in the interviews. The results of the survey were used to ascertain whether the results contradicted, confirmed or complemented the findings of the research interviews. In addition, the research survey aimed to test and explore further, in a larger sample, the possible differences in perceptions between the five types of key informants. A combination of qualitative and quantitative methods was, thus, used to achieve these aims.

It is believed that the use of mixed methods research provides a better understanding of research problems than either a qualitative or quantitative approach alone (Creswell & Plano Clark, 2007). In addition, a mixed methods approach is applied in this research to achieve the following goals: improve accuracy, balance strengths and weaknesses, and develop the analysis.

5.2.1. Improve accuracy

Researchers can improve their confidence in the accuracy of findings through the use of different methods to investigate the same subject (Denscombe, 2007). This is called triangulation and places emphasis on seeking corroboration between qualitative and

quantitative data (Bryman, 2006). The researcher will be able to check the findings from one method against the findings resulting from a different method (Denscombe, 2007). In addition, a mixed methods approach is valuable as a means of developing research instruments. For this research, the initial collection of qualitative data through interviews proved valuable as a way of shaping the kind of questions that were used in the subsequent quantitative survey. Thus, the findings of the online questionnaire help to verify the findings of the face-to-face interviews.

5.2.2. Balancing strengths and weaknesses

Different research methods have their strengths and weaknesses. Therefore, the use of mixed methods helps to offset any inherent weakness or bias in a particular method by combining it with a different one that can compensate for this weakness or bias (Denscombe, 2007). Denscombe (2007) suggested that researchers who choose to use semi-structured interviews as the main data collection method might also choose to supplement this method with the use of a closed-answer questionnaire. For this research, the use of semi-structured interviews in the first phase was crucial in gaining an in-depth understanding of the factors influencing the adoption and development of ETD programmes in the Gulf States. The use of interviews was appropriate since it allowed the researcher to explore in depth the thoughts, feelings and reasoning of the key informants. However, due to the limited number of interviewees (45 participants), the data gathered might be criticised as not being representative. The survey was hence conducted to gather data from a larger sample to supplement the interview findings.

5.2.3. Developing the analysis

A mixed methods approach can be used as a means of moving the analysis forward, with one method being used to inform another. In this sense, the new method is introduced specifically to address research issues arising through findings produced by another method (Denscombe, 2007). For this research, the development of the online questionnaire was based on the analysis of the interview findings. Combining the findings of the two approaches helps to provide a complete picture of the factors influencing the adoption and development of ETD programmes in the Gulf States.

Researchers using mixed methods research need to consider the order in which the methods are used (Denscombe, 2007). Researchers also tend to regard one method as the main and the other as the subsidiary counterbalance or check. For this research, interviews with the key informants were conducted initially to explore the factors that participants perceived as influencing the adoption and development of ETD programmes in the Gulf States. Based on the findings of the interviews, an online questionnaire was developed to check and verify the interview findings. In this approach, it is the qualitative data that is treated as the most important material for the investigation.

Nevertheless, there are several disadvantages of the mixed method approach. These include the fact that more time and cost is required for using several methods. In addition, the researcher needs to develop skills in more than one method (Denscombe, 2007). The researcher needs to develop and exercise skills covering both qualitative and quantitative approaches. For this research, employing two different methods required a long time for research design, data collection and data analysis. In terms of cost, conducting forty-five face-to-face interviews in five different countries is very expensive. However, to reduce the cost in the second phase, the researcher used an online questionnaire to collect quantitative data.

Another disadvantage is that findings from different methods might not corroborate one another. The researcher can be faced with an uncomfortable situation if this is the case (Denscombe, 2007). For this research, however, the findings of the research survey are mostly consistent with the findings of the interviews.

5.3. Qualitative research methodology (phase one)

Qualitative research asks questions regarding "why" and "how". This research intends to explore the situation in the Gulf States and ask participants their views on this situation, why they hold those views and how they can be addressed. A qualitative methodology was initially employed to guide this research to help understand, in great depth, the factors affecting the adoption and development of ETD programmes in the Gulf States. The following paragraphs provide additional justification for using qualitative methodology in the first phase.

Gorman and Clayton (2005) defined qualitative research as:

> …a process of enquiry that draws data from the context in which events occur, in an attempt to describe these occurrences, as a means of determining the process in which events are embedded and the perspectives of those participating in the events, using induction to derive possible explanations based on observed phenomena. (p. 3)

Using a qualitative method for this research enables a deeper and richer understanding of factors that affect the adoption and development of ETD programmes in university libraries in the Gulf States.

Past research has primarily used quantitative methods when investigating issues related to ETD programmes. For example, Allard (2003), in her thesis entitled "Innovation in a university social system: the adoption of electronic theses and dissertations digital libraries", applied a quantitative method and used a survey to answer the research questions. Goldsmith (2002) also used a survey in her thesis entitled "Perceptions of active graduate faculty at a research extensive university regarding electronic submission of theses and dissertations (ETDs)". It is worth noting that the justification for using the quantitative method in these investigations was to test theories based on pre-determined variables. Given this quantitative approach in past research, using a qualitative approach allows the present project to investigate issues of ETD programmes in a new way. Since little literature or research exists about the situation in the Gulf States, the purpose of this research is to understand and explore the situation rather than to test pre-defined variables. This is an exploratory investigation and, thus, a qualitative method is more appropriate in the initial phase.

Qualitative research tends to have unfolding processes; that is, events are described as they are explored over time (Bryman, 2004). This unstructured nature of qualitative research provides the ability to adopt a new direction in the research when encountering unpredicted events and also enhances opportunities to reveal the perspectives of the people under investigation. Bryman further claims that most qualitative researchers begin with an unclear idea of the situation. It is precisely this "unclear idea" that characterises our knowledge of the factors that may affect the

adoption and development of ETD programmes in university libraries in the Gulf States.

Another distinctive feature of qualitative research is use of the inductive approach. In this approach, qualitative researchers often collect evidence and use it to develop an explanation of events (Bryman, 2004; Gorman & Clayton, 2005). This study begins by collecting information in order to develop a clear picture of the situation in the Gulf States. Although some factors have been identified in the literature review as influencing the adoption and development of ETD programmes, the research findings indicate that some of these factors do not apply to the situation in the Gulf States.

Qualitative research also emphasises words rather than quantification in the collection and analysis of data (Bryman, 2004). This research uses semi-structured interviews in the initial stage and, thus, the findings are based on the words of the participants. The emphasis is on verbal content rather than on numbers and frequencies, allowing a rich description of the situation to be drawn from the perspectives of the participants.

5.3.1. Role of the researcher

Positivists assume that reality is neutral and can be represented by measurable properties that are independent of those creating the reality and that, therefore, it is possible to observe without influencing that which is being observed (Pickard, 2007). However, due to the interpretive nature of this research, researcher interaction with the research participants was essential to obtain in-depth information. Moreover, the result of the investigation was the product of interaction between the participants and the investigator. Thus, the role of the researcher was central to the research process and results. However, such a role raises the issue of researcher bias.

To overcome researcher bias, the researcher applied the following approaches that are suggested to build trustworthiness in the research findings. Firstly, the researcher made no prior assumptions about the factors affecting the adoption and development of ETD programmes in university libraries in the Gulf States. Even though some possible factors have been identified from the literature, the researcher did not assume that these identified factors would similarly be found to affect the adoption of ETD programmes in the Gulf States. These identified factors were used only to give an

indication of the possible factors that might affect the adoption and development of ETD programmes. The use of semi-structured interviews allowed the discovery of new factors.

The second approach is to play an "outside observer" (Walsham, 1995). In this regard, the researcher had no extraordinary relation to the targeted research samples and key informants. Even though the researcher works in one of the targeted universities, his work as an academic staff member (lecturer) gave him no personal stake in the interpretation of the results. In fact, this position allowed the researcher to get a sense of the research settings from the inside and allowed access to some confidential and sensitive data. To avoid a personal stake in the interpretation of the results, the researcher recorded all views of the participants and used them to support all claims and conclusions.

The researcher has an established background in ETD programmes having previously completed a master's project on the Australian Digital Theses (ADT) Programme, and this proved advantageous as the issues and concepts regarding ETD programmes were thus readily understood by the researcher (Alsalmi, 2004). As a result, this increased the participants' trust in the researcher's ability to represent issues perceived by the participants.

The literature review revealed a range of factors that affect the adoption and development of ETD programmes. The researcher paid attention to these factors as well as uncovering other factors that might specifically affect the situation in the Gulf States. The factors identified from the literature were used as a lens and in a balanced way that allowed other factors to emerge. Other approaches to overcome researcher bias, such as trustworthiness and authenticity are discussed later in this chapter (section 5.3.7).

5.3.2. Data collection techniques (interviews)

Within a research method, several data collection techniques can be applied. It is worth mentioning Pickard's (2007) claim that it is a mistake to presume that a certain method dictates a certain technique. Data collection strategies include interviews, questionnaires, observation, diaries, focus groups and usability testing. The main

technique chosen for this research was interviews, but document analysis was also used (phase one).

Qualitative researchers rely extensively on interviews as a data collection technique (Marshall & Rossman, 1999). Interviews are used when there is a need for qualitative, descriptive, in-depth data that is specific to the individual or to a particular context, and when the nature of the data is too complex to be asked and answered straightforwardly (Pickard, 2007). Interviews can also be used for descriptions about existing events and predictions of potential developments. The purpose of this research is to identify factors that have an effect on the adoption and development of ETD programmes in university libraries in the Gulf States. The interview strategy was deemed appropriate for this research because it helped to generate rich data of the current situation in university libraries in the Gulf States.

Using interviews gives the respondents a chance to clarify what they think is significant using their own words instead of being controlled by prearranged categories, such as with questionnaires (Gorman & Clayton, 1997). Moreover, the interviewer has the flexibility to use their understanding, expertise and personal skills to examine salient ideas raised by respondents (Sewell, 2001). All these features of interviews gave the researcher the flexibility to understand the situation in the Gulf States in great depth. A semi-structured approach was chosen as it allows further questions to be asked as the need arises (Bryman, 2004).

As well as the interview technique, this research also applies the document analysis technique. Documents relating to existing university policies and regulations were collected from each site. These documents included policies of theses and dissertations acquisition and maintenance, theses statistics, and postgraduate student statistics. Documents can be a valuable source of information in qualitative research and constitute written evidence (Creswell, 2003, 2005). Moreover, this technique helps to complement and triangulate the data collected through the interviews. Pickard (2007) states that triangulation within a case study can be attained by using multiple data collection techniques or multiple sources of evidence. Furthermore, analysing documents is an unobtrusive method, meaningful and rich in revealing the values and attitudes of participants in the setting (Marshall & Rossman, 1999; Mason, 1996). For all of these reasons, documents were also used as a source of data.

5.3.2.1. Stages of the interview process

There are several stages to be used as a broad outline of the interview process (Pickard, 2007). These are thematising, designing, ethical approval, piloting, interviewing, transcribing, analysing, verifying and reporting.

Thematising is the initial stage, where a researcher should be clear about the purpose and the topic of the research. At this stage, themes should be established and the researcher needs to make sure that these themes are appropriate to each interviewee (Pickard, 2007). Moreover, these themes should be structured in a natural order. Based on the literature review and the initial conceptual framework, several issues have been identified and grouped into themes.

The designing stage ensures that each interview covers all of the issues that need to be investigated, which depends on the type of interview. For this research, semi-structured interviews were conducted. The interviews targeted five different groups of the key informants: academic staff, library managers, postgraduate officers, postgraduate students, and system administrators. Each group had its own set of questions, which were relevant to that specific group.

After designing the interview guideline, the application to conduct full interviews, including permission letter to undertake research at the targeted research sites, information sheet, a consent form, and a list of the interview questions, was approved by the Victoria University of Wellington (VUW) Human Ethics Committee (HEC) on 28 August 2008. The interview guideline conformed to the guidelines of the HEC of VUW (see Appendix A for the interview guideline).

Prior to conducting the pilot study and the actual data collection, a letter of support was sought from Sultan Qaboos University in order to encourage other universities to give the researcher the permission to undertake the research.

Conducting a pilot study leaves the researcher with more confidence in the research technique (Davies, 2007). For this research a pilot study was conducted within a university not included in the research sample in September 2008. This helped to establish the kind of responses the interview guidelines were likely to elicit and the suitability of the documents that were to be collected. Interviews were digitally

recorded and all interviewees were able to answer all questions without difficulty. This was followed by an initial transcribing and analysis of the data and revision of the interview guidelines where needed. A report of the pilot study with the revised interview guidelines was sent to the supervisors for consensus-building. After this pilot study and after receiving feedback from supervisors, some procedures and questions were modified prior to commencing the actual data collection phase. The basic interview questions are available in Appendix A. It should be noted that these questions were only the starting point for detailed comments by the respondents.

In the interviewing stage, which ran from October – December 2008, each interview was digitally recorded with the interviewee's permission. The interviews were conducted face-to-face. Shorthand note-taking was also used as an additional technique that allowed the researcher to immediately recognise the main issues raised by the interviewees. Moreover, this technique was chosen to provide back-up data in case the digital recorder malfunctioned (Creswell, 2005).

After conducting the interviews, the data were transcribed as soon as possible. Initial transcription and analysis were conducted after each interview, which covered the main issues raised by the interviewee. This approach helped to identify salient issues that could be revisited during subsequent follow-up phone interviews (Pickard, 2007). In addition, a shorthand note-taking approach was used in order to identify the salient issues. In that, any key names or certain policies mentioned were noted and followed-up in the later interviews. Final transcription covered every single word that was relevant to the research questions.

The process of analysing the interviews is discussed in greater detail later in this chapter (section 5.3.5).

The verifying stage involves checking if the interviews answered the research questions (Pickard, 2007). This verification was done throughout the data collection process. The researcher ensured that all the relevant documents were collected as well as that the interviewees answered all the relevant questions. Another type of verification used involved returning the transcription to the participants to make sure that the text matched the interviewees' perceptions. In addition, short phone interviews were conducted with a number of participants to clarify certain unclear

opinions or information that had been missing. As well as adding to the credibility of the study, this approach helped to improve the quality of the information (Pickard, 2007).

The final stage of the interview process is reporting. Interview interpretations should be used as evidence in the research report. This stage is also discussed later in this chapter (section 5.3.6).

5.3.3. Research sample

Pickard (2007) states that different approaches to sampling are possible, but that the choice of approach should be influenced by the purpose of the research. Denscombe (2007) discusses two basic kinds of sampling technique that can be used in social research: probability sampling and non-probability sampling. Non-probability sampling is used when the researcher thinks it is not possible to include a sufficiently large number of samples in the study and he/she does not have adequate information about the population to undertake probability sampling (Denscombe, 2007) Purposive sampling is a non-probability method that allows the selection of cases that can provide rich information about the issues under investigation (Creswell, 2005). There are two approaches to purposive sampling: prior sampling and snowball sampling. The prior sampling approach identifies a set of criteria to describe the nature of the sample. These criteria should be relevant to the purpose of the research. Snowball sampling is an inductive approach that allows the sample to grow as the research progresses (Pickard, 2007). Pickard also added that it is not necessary to identify all members of the sample in advance – an interview with one respondent could lead directly to another member of the case study. The researcher can ask participants to recommend other individuals to study (Creswell, 2005).

This research employs both purposive sampling approaches. This study aims to explore the factors affecting the adoption and development of ETD programmes in university libraries in the Gulf States. Consequently, using the purposive sampling technique in this research allowed the selection of universities that can provide rich information about the factors affecting the adoption and development of these programmes. However, due to the fact that institutional structures differed from one to

another, the selection of key informants was flexible and was determined during the visit to each research site.

5.3.3.1. Research sites

The researcher purposively sampled research sites that were relevant to the aim of the research study. This research intended to cover the five countries of the Gulf States (Oman, the United Arab Emirates, Saudi Arabia, Bahrain and Kuwait). One university from each country was included in the sample. The selection was based on the following criteria:

- Government-funded university
- Multi-disciplinary university
- Provides postgraduate programmes (master's by theses and PhD).
- Preferably has an ETD programme
- Has long experience with postgraduate programmes (more than 10 years)
- Has a large number of postgraduate students (more than 500 students).

This study gives priority to those universities that have an ETD programme in place. Government universities in the Gulf States were chosen as these tend to be well established, of a large size, more stable, and have more experience of research and postgraduate programs. Based on the search of the universities' websites, the following universities matched these criteria and, thus, were included as the sample sites:

Table 5.1: Research sites

Country	The university
Oman	Sultan Qaboos University
United Arab Emirates	United Arab Emirates University
Saudi Arabia	Al-Imam Muhammad bin Saud Islamic University
Bahrain	University of Bahrain
Kuwait	Kuwait University

A brief overview of each of these five universities is provided in Chapter Two (see section 2.2). This information is based on the researcher's visit to these universities,

universities' websites, and documents collected from these institutions, such as statistical year books, copyright policies, and postgraduate programmes' policies.

With regard to Qatar, when the researcher visited Qatar University to discuss the research, the consultant of the vice president of academic affairs advised the researcher that the university would not be suitable for this research. The consultant explained that -at the time of the visit- the institution had only two master's programmes and only coursework-based programmes (see Chapter 2, section 2.2.6. for more details). The researcher sent a report concerning the circumstances at Qatar University to his two supervisors. The researcher agreed with his supervisors to withdraw Qatar from the research sample due to several reasons. Master's students at Qatar University do not write theses and, thus, would not be able to offer grounded opinions regarding the idea of making theses available online as those otherwise required to complete a thesis would. For this reason, the contribution of academic staff in this respect would be limited as certain questions designed to probe the intention of staff to advise their students regarding participation in ETD programmes would have no relevance. In addition, most of the interview questions intended to be put to postgraduate officers, library managers or system administrators would likewise not apply or would be simply unanswerable, such as questions regarding the submission policies of theses. Finally, other universities in Qatar without master's programmes shared this problem.

5.3.3.2. Sample population

As identified in the literature review, several factors have been found to influence the adoption and development of ETD programmes. Different parties are involved in the adoption and development of these programmes. These include library managers, system administrators, postgraduate officers, academic staff and postgraduate students. Two factors influenced the selection of key informants in this research. Firstly, the organisational structure differed between universities. Secondly, the roles of the people involved in the adoption and development of ETD programmes differed from one institution to another, for example, academic staff have some control over ETD programmes in some institutions. Consequently, the following participants were included in the research sample:

- **Library managers**

The perceptions of library managers were sought to clarify issues of awareness and appreciation of ETD programmes, policies, funding and some technological issues affecting the adoption and development of these programmes. Generally, the library manager in each university was included in the sample. However, in the case where another librarian was responsible for theses and dissertations, this librarian's perception was also sought.

- **System administrators**

Where a library has its own system manager, that manager's perceptions were also sought. System managers' perceptions helped to clarify issues related to the technological infrastructure available, both in the library and in the university as a whole, which can influence the adoption and development of ETD programmes.

- **Administrators in the postgraduate offices (postgraduate officers)**

An administrator in the postgraduate office of each university was included to clarify issues related to university policies and regulations concerning theses and dissertations. Their awareness and appreciation of ETD programmes were also sought.

- **Academic staff (who teach and advise postgraduate students)**

Where academic staff have some control over ETD programmes, staff involved were included in the research sample. One staff member from different departments was included, with a maximum of three from each university. Departments varied from business, humanities, health sciences, engineering, and sciences faculties.

- **Postgraduate students**

Three postgraduate students from each university were included in the research sample. Preference was given to those students who were at the stage of writing up their theses.

Table 5.2 summarises the targeted research sample. A target sample of interviewees was selected following discussions with individuals who were able to direct the

researcher to suitable persons and also explained several issues related to the research questions.

Table 5.2: Summary of the research sample

Sample population					
Universities	Library managers	System administrators	Postgraduate officers	Academic staff	Postgraduate students
University 1	1	1	1	3	3
University 2	1	1	1	3	3
University 3	1	1	1	3	3
University 4	1	1	1	3	3
University 5	1	1	1	3	3
Total (45)	5	5	5	15	15

5.3.4. Data gathering language

Language is an issue in this research because the official language in all six Gulf States is Arabic. The researcher expected to encounter several participants who might not be able to understand or speak English. Therefore, the final copy of the interview questions was written in both Arabic and English. Prior to the actual data collection, the key informants were asked to choose which language they would prefer for communication. In fact, the majority of the interviews were conducted in Arabic and only five respondents were non-Arabic speakers.

5.3.5. Data analysis techniques (Constant comparative analysis)

Analysing the data allows for an understanding of the phenomenon under investigation. "Qualitative analysis demands a deep and focused interaction with the raw data, analysing line by line and in some cases, word by word" (Pickard, 2007, p. 242). To analyse the data from the interviews, the interviews were first transcribed from the recordings.

There are many recognised techniques of qualitative data analysis, including phenomenological strategies, ethnographic methods, narrative and discourse analysis and constant comparative analysis. Constant comparative analysis is the most popular strategy used by qualitative researchers (Bryman, 2004; Pickard, 2007). This research

also employed this technique to analyse the gathered qualitative data. This approach offered a sound framework for working with a large amount of descriptive data. According to Pickard (2007), this technique involves taking one piece of data and judging it with all others that may be related or differ in order to develop conceptualisations of the potential relations between pieces of data. The interview data was assessed line by line and the initial analysis occurred as the researcher collected the data, as, on occasions, further data collection was required as the analysis proceeded (Creswell, 2005). There are three steps of coding involved in this technique: open coding, axial coding, and selective coding.

5.3.5.1. Open coding

At this first stage, the purpose is to identify initial concepts and categories and their properties and dimensions from the data, which are the basic units of analysis in the emerging theory (Creswell, 2005; Pickard, 2007). Deconstruction of the data takes place by examining the similarities and differences between the distinct parts of data (Pickard, 2007). The following three questions help to deconstruct the data:

- What is the basis for this point of view?
- Do other participants hold similar beliefs?
- Is there a specific theme or concept to which this issue relates?

These questions helped the researcher to identify concepts that were very similar. Then similar concepts were grouped under a category name. Each category was then defined by a set of distinct properties and dimensions to make it clear and more easily understood. Properties are sub-categories that help to provide further details about each category. Dimensions are set when the researcher views the property on a continuum and locates some examples representing boundaries on this continuum (Creswell, 2005). The categories were then sorted into groups of similar or connected phenomena (Pickard, 2007).

5.3.5.2. Axial coding

The purpose of axial coding is to determine links between categories and their sub-categories. This involves relating the categories and concepts identified in the open

coding stage in an analysis process that engages recognition of the situation that gives rise to a particular phenomenon and the consequences, causes and context in which it occurs (Bryman, 2004; Pickard, 2007). The following questions help in the analysis of the data:

- What caused the phenomenon to occur?
- What is the context in which the phenomenon occurred?
- What intervening conditions were present?
- What actions and consequences arose as a result?

During this stage, patterns in the data begin to emerge. Identifying relationships between categories involves examining the relevance to all units of data in the category (Creswell, 2005). This process contributes to developing theory and may also highlight the need for additional data collection.

After identifying the concepts, the researcher linked the similar concepts under one main category. Where appropriate, the researcher used categories used in the conceptual framework. In that, all issues or concepts linked to a specific category in the conceptual framework were also linked together were found in the research findings. In doing so, the researcher was careful not to exclude emergent concepts and themes.

5.3.5.3. Selective coding

This final stage aims to integrate and refine the theory generated by the analysis. At this point categories are established and no more new properties, relationships or dimensions arise from the analysis. Instead, in this stage one or two core categories are determined to which all other categories are related as sub-categories. A category is a core category when most or all other categories are linked to it in some way (Pickard, 2007). It is believed that this is the most difficult stage in the process and it is here that an accurate grounded theory is constructed (Creswell, 2007).

After linking the similar concepts under one main category, the researcher sought to identify the interaction and the interrelationship between categories. In fact, several categories identified were found to be influencing other categories. Based on these three steps, the researcher was able to identify a few core categories that all other

categories were related to as sub-categories. In addition, during these three steps of coding, notes were written concerning concepts and categories identified. Writing these "memos" helped the researcher keep track of the analysis and facilitated the drawing of conclusions.

During the analysis stage, the researcher used the *Nvivo* software to organise and analyse the qualitative data although many social researchers argue that using computer software to analyse qualitative data separates the researcher from the data (Pickard, 2007). In fact, the use of *Nvivo* in this research was not for analysis but was intended to organise and manage the qualitative data. In addition to the numerous other advantages of using *Nvivo*, the researcher used the software to benefit from the following functions in particular: preparing and organising data, storing the originals of all raw data in a safe place, grouping themes, linking similar themes, and retrieving text from any document (see Chapter 6, Table 6.1 for the interview codes).

5.3.6. Presenting qualitative findings

The research design and processes of the first phase are summarised in figure 5.1. The order of some of the processes follows the recommendations given by Gorman and Clayton (2005) and Pickard (2007).

Figure 5.1: Research design and processes
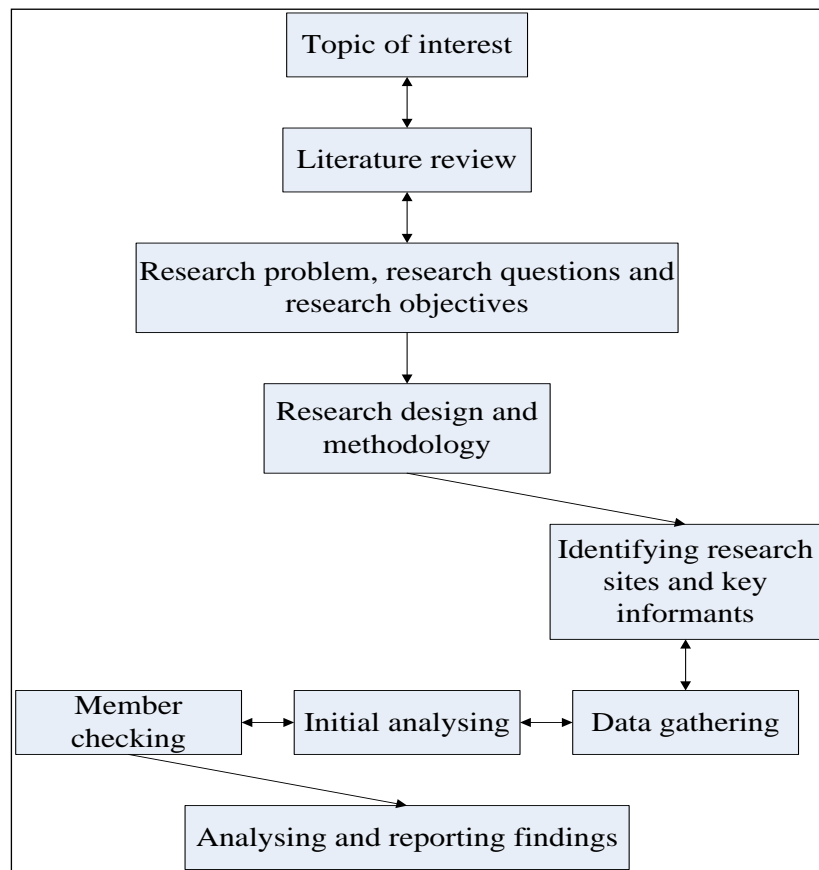
5.3.7. Evaluating qualitative research

Researchers need to make sure that their findings and interpretations are valid and accurate (Creswell, 2005). Qualitative researchers tend to receive much more criticism than quantitative researchers in this respect. Denzin and Lincoln (1998) stated that "qualitative researchers are called journalists or soft scientists" (p. 7). They further stated that the work of qualitative researchers is only explanatory.

Reliability and validity are common criteria used by quantitative researchers to establish and assess the quality of the research (Bryman, 2004). Pickard (2007) outlined four concepts that are commonly used by quantitative researchers to establish the quality of the research findings: internal validity, external validity, reliability and objectivity. In place of reliability and validity, trustworthiness and authenticity are commonly used by qualitative researchers to establish and assess the quality of the research (Creswell, 2005). The researcher applied these two criteria to evaluate the quality of the qualitative findings.

5.3.7.1. Trustworthiness

Trustworthiness of qualitative research means the value of findings and their authenticity (Denzin & Lincoln, 2005). The concepts most commonly used by qualitative researchers to establish trustworthiness of their research are credibility, transferability, dependability and confirmability (Pickard, 2007).

- **Credibility**

Credibility means how believable the findings are. The credibility of qualitative findings can often be established by triangulation (Bryman, 2004; Gorman & Clayton, 2005). Triangulation involves using multiple research techniques and sources of data to investigate the same phenomenon (Miles & Huberman, 1994). The use of multiple data collection techniques compensates for any limitations of individual techniques (Pickard, 2007). It further ensures that the study will be accurate because the information is drawn from multiple sources of information (Creswell, 2005). For the first phase of this research, the researcher compared the data collected through the interviews with what was in the different documents collected to ascertain whether the findings were consistent. In the second phase, the online questionnaires were used to support and qualify the issues raised in the interviews.

Another technique used to establish credibility is member checking. This technique ensures the accuracy of the findings by taking the final report back to the participants for verification (Bryman, 2004; Creswell, 2003). In this research the interview transcriptions were returned to the interviewees for confirmation. Although this process was lengthy and several reminders were sent, the researcher was able to ensure that all the interviewees checked their interview transcripts and there were no substantial changes.

In addition, Lincoln and Guba (1985) stated that to make findings more credible, the researcher should spend enough time in the research site to make sure that the context is thoroughly appreciated and understood. Creswell (2003) further recommended that the researcher spend a prolonged time in the field to enable the development of an in-depth understanding of the phenomenon under investigation and to convey details about the site. To get a rich picture of the situation in university libraries in the Gulf

States, the researcher spent an average of seven days in each location. During that time, the researcher conducted interviews in each location, visited libraries and information technology centres, and met with the deans of colleges and other relevant persons. The interviews commenced in September 2008 and ended in December 2008.

- **Transferability**

Transferability means the ability to apply the findings to other contexts. To allow the transferability of qualitative findings, it is essential that a rich and thorough description of the research case is given to convey the findings (Creswell, 2003; Lincoln & Guba, 1985). Pickard (2007) stated that if sufficient similarities are identified between the two contexts, it is reasonable to apply the research findings to the new context. This research intended to provide detailed information of the situation in the university libraries under investigation in regard to the adoption and development of ETD programmes. Such detailed and rich descriptions make possible the transferability of the findings to other similar contexts.

Using multiple cases also helps to increase the transferability of qualitative findings (Miles & Huberman, 1994). This research used several sites in the Gulf States. Marshall and Rossman (1999) further stated that using multiple informants or more than one technique of data collection in a study can greatly strengthen the study's usefulness for other settings. These concepts were applied in this study, which should make transferability judgments possible (Lincoln & Guba, 1985). In addition, the use of the survey method in the second phase helped to solve this issue since a larger sample was involved.

- **Dependability**

Dependability means the likelihood of the findings being applicable at other times. The dependability of qualitative findings can be established by having the research process examined by an external auditor (Denzin & Lincoln, 1998; Creswell, 2003). If complete records of the research process are kept (Bryman, 2004), an auditor can go through these records to judge if appropriate methods and techniques were applied in the study and can report on the strengths and weaknesses of the study (Creswell, 2005; Lincoln & Guba, 1985). For this research, after data collection from each site, a

report was sent to the supervisors for verification and comments. In total, seven reports were sent to the supervisors including the one sent after the pilot study. In addition, complete records of all phases of the research processes were kept on the researcher's computer for reference. In addition to the external audit, dependability can also be improved through in-depth descriptions of the research methods and triangulation (Key, 1997). Both of these approaches were used in this research.

- **Confirmability**

This is to ensure that the research findings are not influenced by the personal values and prior assumptions of the researcher (Bryman, 2004) by making sure that the results can be traced to the raw data of the research (Pickard, 2007). In this research, the use of the constant comparative analysis technique shows clearly how each theme or category is developed from the raw data. Moreover, the researcher quoted the participants' perceptions and used them to support all claims and conclusions.

Lincoln and Guba (1985) stated that triangulation can also serve to establish confirmability of the findings. Triangulation was also applied in this research and is discussed earlier in this chapter (section 5.2.1 and section 5.3.2).

5.3.7.2. Authenticity

Guba and Lincoln (2005) suggested several criteria for authenticity:

- **Fairness**

The research needs to fairly represent different viewpoints amongst members of the social setting. This means that all the participants in the setting should have an equal chance to be included in the research. In this study, this criterion was achieved by the use of purposive sampling to ensure that the perceptions of all groups involved in ETD programmes were elicited.

- **Educative authenticity**

The researcher needs to help the participants to understand and appreciate other participants' perspectives of their social setting. For this research, this criterion was achieved by publishing the research findings as journal articles and conference papers. In addition, participants were provided with the summary of the research findings,

which was intended to raise the participants' awareness of the reality of their setting as viewed by them and other participants.

- **Catalytic authenticity**

The researcher needs to stimulate and motivate members of the setting to engage in an action. This criterion seems more applicable in action research. Although this study was not action research, several research participants indicated that investigating this topic would raise awareness about ETD programmes and, as a result, motivate universities to adopt these.

- **Tactical authenticity**

The researcher needs to empower members of the setting to take the steps necessary to be involved in an action, such as providing training for them. Several research participants indicated that they were looking forward to the findings and recommendations of this research in order to adopt and develop an ETD programme at their institution. They indicated that by providing solutions to the issues of concern, universities would be more likely to adopt these programmes.

In summary, the criteria of trustworthiness and authenticity guided this research and they were seen as providing a healthy reference structure for the pursuit of quality in this research.

The results of this first qualitative phase are discussed in Chapter Six. A discussion of the second quantitative phase in this research follows.

5.4. Quantitative research methodology (phase two)

Phase two of this research used the quantitative methodology in the form of a survey. The quantitative phase was used as a complementary phase to the primarily qualitative phase. The aim of the quantitative phase was to test and explore, in a larger sample, the identified issues in the interviews. The results of the survey were used to ascertain whether the results contradicted, confirmed or complemented the findings of the research interviews.

A quantitative methodology was chosen as the most appropriate for the purpose of this second phase of the research. Quantitative researchers are mainly interested in

making logical comparisons in order to account for the variance in some phenomena (Silverman, 2005). Particular importance is given to measurement of quantity, intensity and frequency (Denzin & Lincoln, 2005). It is for these benefits that the quantitative methodology was employed in the second phase of this research. The purpose of this second phase was to test and explore, in a larger sample, the identified issues in the interviews. The results of the survey were used to ascertain whether the results contradicted, confirmed or complemented the findings of the research interviews.

5.4.1. Research method (survey)

Quantitative research methods include surveys, numerical techniques, such as mathematical modelling, and laboratory experiments (Myers, 1997). The survey method was used in the second phase of this research. There are several reasons why a survey was used in this research. Mixed methods complement each other if used appropriately (Attewell and Rule, 1991). Interviewing key informants in phase one provided contextual understanding, while the survey method in phase two provided statistical meaning. Thus, if both methods gave the same results, then the results would become more valid. The second reason for using the survey method was the possibility of making the findings more generalisable. Generalising the findings of the interviews was more difficult because of the small number of participants. Phase two included a larger sample than in phase one (semi-structured interviews). However, it is worth emphasising that the focus of this research was not to generalise the findings, rather it aimed to explore the situation in the Gulf States in greater depth. Another reason for using a survey is to provide statistical evidence in terms of reliability and validity. Thus, the survey involved a much larger sample (309) compared to the interviews (45 interviewees), which is more likely to allow the generalisability of the research findings.

Descriptive (exploratory) and explanatory surveys are the most commonly known types of survey. Descriptive surveys aim to estimate as precisely as possible the nature of existing conditions, or attributes of a population. They also seek to describe a situation and look for trends and patterns within the sample group that can be generalised to the defined population of the study (Pickard, 2007). Explanatory

surveys, on the other hand, aim to discover causal relationships between variables. In general, descriptive surveys will have aims and objectives while explanatory surveys will state hypotheses (Pickard, 2007). This research used the descriptive survey research method because it has aims and objectives rather than trying to test theories and hypotheses. The aim of this descriptive survey was to test and explore, in a larger sample, the identified issues in the interviews (first phase). The results of the survey were used to ascertain whether the results contradicted, confirmed or complemented the findings of the research interviews. In addition, the research survey aimed to test and explore further, in a larger sample, the possible differences in perceptions between the five groups of key informants.

5.4.2. Data collection technique (online questionnaire)

Using questionnaires as a data collection technique is appropriate when there is a need to collect data from a large number of respondents in many locations. Additionally, questionnaires allow the researcher to progress from gathering the ideas and opinions of a few people at the qualitative stage to confirming whether the ideas and opinions are widely held throughout the whole target population (Cavana et al., 2001). It is also practical to use questionnaires if the researcher wants straightforward and relatively brief and uncontroversial information (Denscombe, 2007). For these reasons, the questionnaire technique was chosen in the second quantitative phase. In this phase, the targeted respondents were located in five different countries. Therefore, it was appropriate to use the questionnaire technique to gather data from a larger sample in several locations in the Gulf States.

Different methods are available for delivering questionnaires. These include postal questionnaires, telephone questionnaires, face-to-face clipboard questionnaires and internet questionnaires (Denscombe, 2007; Pickard, 2007). Internet questionnaires provide a fast and cost-effective alternative to postal questionnaires (Denscombe, 2007). There are three ways of conducting internet questionnaires; an e-mail questionnaire, a questionnaire sent with an e-mail as an attachment, and an online questionnaire (Denscombe, 2007; Pickard, 2007). For this research, an online questionnaire was conducted to gather data from respondents located in different countries. An online questionnaire is a questionnaire located on a web page, which

respondents can fill-in online (Pickard, 2007). The reason for choosing an online questionnaire was to minimise the time and the cost required to collect data. Online questionnaires can reach wide geographic locations very quickly and inexpensively (Cavana et al., 2001). However, online questionnaires have some disadvantages such as a low response rate, the fact that respondents may not be representative of the target population, and that respondents must be computer literate and have access to computers and e-mail (Cavana et al., 2001). For this research, the response rate was acceptable and exceeded the target response rate (see section 5.4.3 and Chapter 7, section 7.1). In terms of representativeness, the researcher defined clearly the characteristics of the targeted population. Moreover, the research sample consisted of persons from the university community (librarians, technicians, postgraduate officers, academic staff and students) with access to computers and e-mail.

5.4.2.1. Stages of the questionnaire process

An online questionnaire was developed based on information that the researcher obtained from the interviews (phase one). The questionnaire design followed the guidelines suggested by Pickard (2007) and Cavana et al. (2001). The results of the survey were used to ascertain whether the results contradicted, confirmed or complemented the findings of the research interviews. The focus of the questionnaire was to explore participants' attitudes towards the identified issues in the interviews. For this purpose, Likert scale questions were used in this questionnaire. The Likert scale is one of the most frequently encountered formats for measuring attitudes (Bryman & Emma, 2003). According to Pickard, this scale allows respondents to choose the responses that best represent their opinions relative to a list of statements. Basically, the rating scale (score) of each attitude was 1= *strongly disagree*, 2= *disagree*, 3= *not certain*, 4= *agree*, 5= *strongly agree*. However, the placing of "*not certain*" as a mid-point could have led to misinterpretation by the respondents (see further discussion on this in section 5.5).

Separate questionnaires were developed for the five key informants (technicians, librarians, postgraduate officers, academic staff, and postgraduate students). Web-based questionnaires were designed using a well-known, flexible and easy-to-use website called Survey Monkey (McKinney, 2007). The design of the online

questionnaire allowed for separating the questionnaire of each group. Thus, each group was directed to its relevant questionnaire. In total, the questionnaire contained 98 questions separated into three parts. Each questionnaire was available in Arabic and English because the targeted population speaks either Arabic or English. Using the two languages meant that every respondent would be able to understand the questions fully. Therefore, all questionnaires were translated from English to Arabic. The Arabic versions were reviewed and verified by two Arabic lecturers and two Arabic teachers who were proficient in both languages. The four were asked whether the translation of these questionnaires into Arabic was accurate and clear. A few changes were suggested in the wording of the Arabic version. The Arabic versions of the five questionnaires were subsequently modified to factor in these suggestions.

Two educators were also asked to review the questionnaire before the pilot study in order to ensure that the content and validity were acceptable. According to Cavana et al. (2001) content validity can be tested by sending the questionnaire to a group of experts to examine each item in the questionnaire. In addition, the questionnaire was pre-tested with two peers to determine the questionnaire's validity and to address any other issues, such as clarification of instructions and questions. As a result of the pre-testing, the questionnaire was modified accordingly. This step was beneficial to eliminate measurement errors caused by poorly worded or ambiguous questions and instructions. The results of this pre-test suggested that five items in the questionnaire should be modified as well as instructions and scales altered in order to make the questionnaire clearer.

The application to conduct online questionnaires, including a permission letter to undertake research at the targeted research sites, an invitation letter to participate in research, a consent form, and a copy of the questionnaires was approved by the Victoria University of Wellington (VUW) Human Ethics Committee (HEC) on the 6th of November 2009 (see Appendix B). The questionnaires were compiled according to the guidelines of the HEC of VUW. To ensure confidentiality respondents were not identified by name or any other identification features.

A pilot study was subsequently conducted in November 2009, which involved eight respondents; 3 academic staff, 2 postgraduate students, 2 librarians, 1 technician. No postgraduate officer participated in this pilot study. However, the questionnaire for

postgraduate officers is similar to the questionnaire for academic staff. Therefore the researcher decided that only one group needed to be asked to comment on the questionnaire. The respondents were e-mailed the link to the online questionnaire and asked to complete it. They were also asked to pay attention to the clarity of instructions and questions, the time needed to complete the questionnaire, the questionnaire design, and any other suggestions to improve the questionnaire.

The majority of the respondents noted that the questions and instructions were clear. Only two expressed confusion concerning the item scales. They also recommended the inclusion of a *not certain* option owing to concerns they may not have an opinion on the issue probed. In response to these comments, the scales for some questions were amended from *no influence, weak influence, some influence, strong influence, very strong influence* to *no influence, weak influence, not certain, strong influence, very strong influence* (the final draft of the survey questions is available in Appendix C). With regard to the questionnaire design, most respondents stated that the design was good and clear. Only one respondent suggested changes to colour and font size in the questions. As a result of this feedback, the format of the questionnaire, such as fonts and colour, was adjusted in order to make the questionnaire easy to read and answer. With regard to the time required to complete the questionnaire, the average time was 15 minutes. Thus, the researcher stated in the invitation letter to the actual participants that it would take 15-20 minutes to complete the questionnaire.

The actual data collection period using the online questionnaire started in December 2009 and ended in February 2010. Formal letters from Sultan Qaboos University (the sponsor of this research) were sent to the targeted universities in the Gulf States explaining the importance of this research and asking them to cooperate with the researcher. After obtaining the permission of university administrators, e-mails containing a link to the survey were sent to the research sample inviting them to participate in this research. Respondents were invited to participate in the questionnaire by clicking on the survey link and agreeing to the terms of the consent form. When a participant clicked on the 'submit' button the response was sent electronically to the researcher's account.

Original data from respondents were transferred to an *SPSS* database. All data were stored and treated in aggregate form only to ensure the anonymity of respondents.

5.4.3. Research sample

In accordance with the purpose of conducting this subsequent quantitative survey, the research sample targeted the same sites that were targeted initially in the first phase. However, the University of Bahrain was omitted from the survey sample. Despite several e-mails, phone calls and faxes, the researcher was unable to secure permission to conduct research at this university.

Denscombe (2007) stated that the researcher needs to predict the kind of response rate he or she is likely to achieve, based on the survey being implemented. He also indicated that the use of surveys in social research does not necessarily have to involve samples of 1,000 or 2,000 people. He further claimed that whatever the theoretical issues, the simple fact is that surveys and sampling are frequently used in small-scale research involving between 30 and 250 cases. Denscombe outlined several points that need to be stressed in relation to the use of a smaller sample size. Firstly, extra attention needs to be paid to the issue of how representative the sample is and special caution is needed concerning the extent to which generalisation can be made on the basis of the research findings. For this research, the researcher believed that the five targeted groups of key informants have a close relationship with ETD programmes. In addition, the extent of generalisability was not intended to be for different contexts. The findings were only intended to be generalisable and transferable to the similar contexts in the Gulf States. Secondly, the smaller the sample, the simpler the analysis should be (Denscombe, 2007). For the purpose of this research, only descriptive analysis and *One-Way Anova* analysis were conducted to analyse the quantitative data (discussions about data analysis in section 5.4.4). Thirdly, the sample should not involve fewer than 30 people or events. In addition to Denscombe's three points, Roscoe (1975, as cited in Cavana et al., 2001), proposed several rules for determining sample size. Firstly, a sample size larger than 30 and smaller than 500 is appropriate for most research. Secondly, where samples are to be broken into subsamples, a minimum sample size of 30 for each category is usually necessary.

Therefore, the survey targeted the same five groups that were targeted in the first phase (librarians, technicians, postgraduate officers, academic staff and postgraduate students). The researcher intended to achieve at least 30 respondents from each group.

5.4.3.1. Bias from non-responses

There are two types of non-response, both of which can lead to bias in the sample (Denscombe, 2007). The first type is non-response through refusal. If those who refuse to respond are different from those who respond, then there is the likelihood of a bias in the results. To investigate non-response bias, a comparison can be made between early and late responders using key questions (Armstrong and Overton, 1977). This method assumes that the late responders are more likely to have similar characteristics of non-responders than early responders. For this research, conducting such an investigation was not practical for several reasons. Firstly, this research was conducted in several countries. Though permissions to conduct the online questionnaires in universities in these countries were sought at the same time, some universities responded more quickly than others. As a result, some universities distributed the questionnaire to the targeted sample earlier than other universities. Secondly, responses collected were treated in aggregate form and, thus, the researcher was unable to determine the country of origin of certain responses.

The second type of non-response is non-response stemming from non-contact. The researcher needs to be sure that the targeted people are indeed contacted and included. Pertinently, the researcher needs to be sure that any non-contact with those targeted people is more or less a random occurrence (Denscombe, 2007). The researcher indicated clearly in the permission letter sent to universities the characteristics of the targeted participants. The researcher also made efforts (calling, faxing and emailing) to make sure that the invitation e-mails were sent to all the targeted respondents.

Nevertheless, non-response bias cannot be entirely eliminated (Alreck and Settle, 1985). Therefore, it is important for the researcher to be aware of the interaction that might exist between the survey topic and the likelihood of users to respond. In this research, it is obvious that the survey topic had to be of enough interest to motivate respondents to participate. From the number of completed questionnaires (309), it is believed that the motivation to respond was at an acceptable level.

5.4.4. Data analysis techniques

Simple statistical tests were used to analyse the questionnaire findings. According to Pickard (2007), the descriptive survey method does not lend itself to more sophisticated statistical analysis. Statistical Package for the Social Sciences (*SPSS*) software was used for data analysis. Amongst several benefits of using *SPSS*, this software facilitates data management, display, retrieval, and reduces time to analyse the data (Pickard, 2007; Punch, 2005). Several statistical techniques were used for analysing the questionnaire data including descriptive statistics and an analysis of variance (*One Way Anova*) test, which is used to explore the possible differences in the five groups' perceptions.

5.4.4.1. Descriptive statistics

Descriptive statistics were used to analyse the response rate and users' attitudes towards the issues included. One of the aims of descriptive survey is to describe a situation and look for trends and patterns within the sample group that can be generalised for the defined population of the study (Pickard, 2007). For this purpose, descriptive statistics including frequencies and percentages were used to identify trends and patterns within the sample group of this research.

5.4.4.2. Analysis of variance (One Way Anova)

An analysis of variance test *(ANOVA)* is used to compare the means of more than two groups. The T-test is usually used to compare means between two groups only and it is not useful for comparing means of more than two groups (Alzabi & Altalafha, 2003). Therefore, the *ANOVA* test is used to compare the means of more than two groups. The *ANOVA* test helps to ascertain whether the means of several groups are equal or not. For this research, the *One Way Anova* test was used to compare the means of the five key informant groups in this research.

Two hypotheses are used to test the significance of difference between groups; null hypothesis and the alternative hypothesis. The null hypothesis refers to the common view of something that the researcher tries to disprove or reject (Martyn, 2008). For the *One Way Anova* test, the null hypothesis means that there is no significant

difference between groups ($p > 0.05$). The alternative hypothesis means that there is a significant difference between the groups, which the researcher attempts to verify ($p <$ 0.05). As a result, if the value of the significance test of difference "Sig" is below 0.05, then the means of groups are not equal. On the other hand, if the "Sig" value is over 0.05, then the means of groups are equal and there is no significant difference between groups. The result of the analysis of variance test is discussed in Chapter Seven.

5.4.5. Evaluating quantitative research

Researchers need to make sure that their findings and interpretations are valid and accurate (Creswell, 2005). Reliability and validity are common criteria used by quantitative researchers to establish and assess the quality of the research (Bryman, 2004).

5.4.5.1. Validity

Validity in quantitative research focuses mainly on the validity of the instrument. The instrument in the second quantitative phase was an online questionnaire. Instrument validity aims to make sure that the questions being asked are measuring the concepts that are required to be measured and not measuring something else (Cavana et al., 2001). One of the approaches suggested to ensure the instrument validity is by testing whether the items presented on the questionnaire are clear and understood by the respondents. This can be monitored by giving the questionnaire to a sample of respondents to gauge their reaction to the items. The online questionnaire was pre-tested twice and a pilot study was conducted in order to determine the instrument validity (further discussion on instrument validity is presented in section 5.4.2.1).

Generalisability or external validity is another approach used to test validity in quantitative research (Creswell & Plano Clark, 2011). The researcher needs to make sure that the sample used is representative of the wider population (Pickard, 2007). For this research, the purposive sampling approach was used to ensure that people involved in ETD programmes were included in this research. However, since this research is exploratory in nature and is predominantly qualitative in its design, the

findings were not intended to be generalisable for different contexts. The findings were only intended to be generalisable and transferable to similar contexts. Nevertheless, the high number of responses to the survey (309 respondents) provided the possibility for the research findings to be generalised to other Arab countries.

5.4.5.2. Reliability

Reliability is the precision or accuracy of a measurement instrument (Kerlinger, 1973). It has been noted that if the instrument is not assessed for reliability, the interpretation of results may not be reliable (Nunnally, 1978). Reliability analysis is used to determine how dependable, consistent, predictable, accurate, and stable the instrument is (Cavana et al., 2001; Pickard, 2007). One of the approaches suggested to ensure the instrument reliability is by testing the internal consistency of each construct. This can be assessed by using Cronbach's coefficient alpha (Pallant, 2001).

However, the aim of using the survey method in this research was to validate the qualitative findings collected in the first phase. Thus, a descriptive survey method was used for the second phase. According to Pickard (2007), descriptive survey method does not lend itself to more sophisticated statistical analysis. In addition, the survey questions were treated individually using the Likert scale. Questions were not grouped under separate constructs. Moreover, the survey did not aim to test the research framework. Therefore, it was not appropriate to conduct sophisticated reliability tests, such as Cronbach's coefficient alpha in the survey.

The results of this second quantitative phase are discussed in Chapter Seven. Following are discussions of the limitations and delimitations of this research.

5.5. Limitations of the survey questionnaire

Researchers usually encounter several constraints during the research process. Section 1.8 in Chapter One discusses several limitations of the research (mainly related to the qualitative approach). This section provides discussion on the limitation of the survey questionnaire.

Generally, there is debate as to whether to offer respondents with insufficient knowledge or who have no assigned position a neutral response or "no opinion"

selection (Neuman, 2011). Matell and Jacoby (1972) studied the issue of Likert-scale items and stated that pushing responses into agree and disagree formats is expected to cause struggle for many respondents and could lead to misleading and less realistic results. It also "forces the respondents away from the middle ground" (Fink, 2009, p. 25). On the other hand, the inclusion of an intermediate response of "undecided" or "uncertain" could provide an easy escape for respondents who are reluctant to express a confident view. Others claim that it is good to offer a neutral ("no opinion") choice since people often answer questions to please others and not to appear ignorant. In addition, by offering this choice researchers can identify respondents without an opinion and separate them from respondents who really have one (Neuman, 2011). For these reasons, this research applied the "not certain" option as a mid-point.

The use of the term "not certain" in the survey question may lead to misunderstanding. The survey questions used five-level Likert items (strongly agree, agree, not certain, disagree, and strongly disagree). The placing of "not certain" in the middle of the scale could have corrupted the quality of the data since respondents might have misinterpreted it as a mid-category between agree and disagree. This weakness in the survey questionnaire was discovered after the process of data collection.

Armstrong (1987) studied the appropriate midpoint on a five-point likert scale. He stated that "neutral" and "undecided" are not the same thing. "Neutral" is generally assumed to be a middle attitude between "agree" and "disagree". However, "undecided" might indicate any situation on the part of the respondent from informed uncertainty to uninformed indifference. Armstrong concluded his study by stating that the use of "undecided" instead of "neutral" could not lead to an erosion of results. However, he added that "neutral" appears less confusing and should perhaps be employed every time a midpoint is being employed.

From the literature, it seems that the terms "uncertain", "undecided" and "neutral" do not mean the same thing. "Neutral" choice is generally placed in the middle of the scale while "uncertain" and "undecided" are normally placed at the end of the scale. For this reason, the placement of the term "not certain" in the middle between agree and disagree in this research could have been interpreted by respondents as similar to "neutral", which has a different meaning as stated earlier. Due to this weakness, the

percentages of "not certain" categories have been highlighted in the survey results and appropriate clarification has been provided in the analysis and discussion of the results.

5.6. Conclusion

The main purpose of this study was to explore the enablers and barriers to the adoption and development of ETD programmes in university libraries in the Gulf States. Understanding these factors may be crucial to the successful adoption and development of such programmes in university libraries in these states. This research aimed to develop a contextual framework of factors that have an influence on the adoption and development of ETD programmes in the Gulf States.

The primary interpretivist and secondary post positivist approaches and the mixed methodology used in this study helped the researcher gain deep insight into the factors that may affect the adoption and development of ETD programmes in university libraries in the Gulf States. Qualitative data were collected from the key informants to investigate their perceptions and understanding of the factors influencing the adoption of ETD programmes. Based on the interview findings, an online questionnaire was developed to establish whether the quantitative data contradicted, confirmed or complemented the qualitative data. This chapter also discussed the data analysis techniques that were used to analyse both qualitative and quantitative data. The following chapter analyses and discusses the interview findings.

CHAPTER SIX: ANALYSIS OF THE INTERVIEW FINDINGS

This chapter presents and analyses the findings of the interviews conducted with the five main groups of stakeholders: library managers, system managers, postgraduate officers, academic staff and postgraduate students. These findings are discussed in Chapter Eight. The key informants perceived several issues and factors that they considered that would possibly influence the adoption and development of ETD programmes in the Gulf States.

This chapter is divided into five sections. Each section presents a main issue. Issues were categorised using the terms used in the preliminary research framework. The first section presents the perceptions of the key informants towards the benefits of ETD (Appreciation of the benefits). The second section analyses issues related to the expected complexities in the technological processes required to adopt ETD programmes (Technological factor). The third section presents concerns related to ETD programmes (Concerns regarding ETD programmes). The fourth section highlights issues related to the expected influence of the availability of the required resources on the adoption of ETD programmes (Availability of resources). The fifth section identifies factors that interviewees believed could alleviate people's concerns regarding ETD programmes (Persuasive influence).

As discussed in Chapter Five (see section 5.3.5 for more details), the researcher followed the suggestions of Pickard (2007) in analysing the data. After all interviews had been transcribed, each interview was coded, as too was each site, and all the interviews were linked to the relevant site. The researcher initially read through each transcript and then read and re-read each interview individually. Based on these reviews, the researcher began to make notes and highlight the interviewees' perceptions with respect to the factors that would affect the adoption and development of ETD programmes. Similar perceptions from other interviewees were grouped together and assigned a code (initial concepts). One hundred and eighty six codes were created to describe the findings. For example, there were 19 codes describing the perceptions of the benefits of ETD programmes. Then, related concepts were grouped together under a relevant sub-category. For example, copyright issues, future publishing and plagiarism were grouped under legal issues. These issues were grouped together since they involve dealing with policies and they also relate to the content of theses. The researcher used *Nvivo* software to organise these concepts and their sub-categories (see Table 6.1 for these concepts and sub-categories). Thereafter, the researcher linked all related sub-categories to

one of five main categories. For example, the perceptions regarding the availability of appropriate staff, policies, funds and technological infrastructure were collated into a category called "the availability of resources". At this stage, the researcher paid attention to the situation and context of each concept and sub-category by focusing on the relationship between the interviewees and their position and their institution. For example, a comparison was made between the perceptions of the interviewees in each site and the documents collected at the same site. The researcher noted cases of contradictions between the interviewees' perceptions and the documents collected at the same site in terms of the availability of copyright policies. Next, the researcher noted the relationships between the factors suggested in the preliminary framework and the interview findings.

Table 6.1: Main codes and sub codes

Codes	Sub-codes	Sub-codes	No of references
Appreciation of benefits	for academic institutions	facilitate archiving	3
		good impression	2
		copyright protection	2
	for academic staff	access to student theses	7
		avoid repeating topics	5
	for libraries	control photocopying	1
		facilitate searching	10
		reduce routine work	2
		remote services	10
		save space	4
		Users' satisfaction	1
	for students	facilitate searching	25
		improve their research	16
		more known	10
		benefit other students	13
		protect copyright	4
	Influence		36
	support Arabic research		9
Technological process	no complexity	theses available in e-format	6
		availability of facilities	6
		easy process	18
	influence	no influence	20
		policies' influence	4
		time consuming	8
	scanning	time consuming	4
		Complexities	6
		lack of policies for submission of e-copy	7

Codes	Sub-codes	Sub-codes		No of references
		lack of facilities		3
	preservation	lack of policies		3
	Online security	lack of policies		3
	Integration with other systems			1
	Students' perceptions	submission of e-copy		2
		conversion to PDF		5
		submission on CDs		5
Concerns	Legal	good influence		11
		negative influence		5
		policies influence		39
		time consuming		2
		no influence		31
		gain copyright permission	Concerns	4
			no concerns	12
		copyright restriction	Concerns	4
			no concerns	12
		future publishing	Concerns	2
			no concerns	10
			suggested solution	7
		plagiarism	Concerns	16
			no concerns	25
			suggested solution	16
	quality of theses			6
	using new technologies	negative influence		1
		after evaluation		11
		based on other's experience		12
		at the beginning		19
		beneficial technology		11
		using other e-services		3
		younger generation		2
		old staff		6
	lack of awareness			15
	lack of cooperation			2
Infrastructure	technological	availability		12
		lack		5
		influence		6
	organizational	availability		3
		lack		2
		influence		6
		administrative support		2

Codes	Sub-codes	Sub-codes			No of references
		qualified staff	availability		12
			Lack		2
			more training		12
			responsibility		6
			influence		10
		champion	availability		2
			lack		6
			responsibility		26
			influence		24
		policies	copyright permission	availability	3
				lack	3
			submission of e-copy	availability	13
				lack	7
			influence		9
			Establishment of policies	facilitators	16
				obstacles	3
				time consuming	12
			adoption decision		6
		funds	availability		10
			Lack		1
			Influence		11
		private companies			2
	quantity of theses				2
	postgraduate programs				4
Persuasive influence	training				2
	promotional activities	Availability			3
		positive influence			45
		lack			3
		responsibility			14
	Peers	influence			4
		no influence			33
		reversal influence			5
	Supervisors	positive influence			13
		negative influence			5
		no influence			11
		reversal influence			1
	other institutions' experience				11
	current trend				15
	Benefits				10
	community support				25

Mainly, the researcher used categories used in the preliminary framework. However, the researcher remained open to the emergence of new concepts and themes. A few additional concepts emerged from the findings that were not part of the preliminary framework. These included the quality of theses and dissertations, the quantity of theses and dissertations, and the benefits of supporting research in the Arabic language. In addition, the preliminary framework did not highlight any relationship between categories, while the research findings noted several interactions and interrelationships between these categories. For example, promotional activities were identified as potentially having a great influence on alleviating the concerns regarding legal issues. In addition, the availability of resources was noted as having an influence on the technological factor. Moreover, the research findings revealed that the availability of resources was perceived to be the most influential factor compared to other factors.

6.1. Appreciation of the benefits

From the research interviews conducted for this research, the research participants perceived several benefits of ETD programmes. Participants highlighted benefits for postgraduate students and researchers, for academic institutions, for academic staff, for libraries and other general benefits. Examples of these include: facilitating searching for and retrieving theses and dissertations, helping to avoid repeating the same topics, saving spaces in libraries, exposing students and their work, and facilitating archiving of theses. Academic staff and postgraduate students also observed benefits related to study and research. Library managers perceived benefits for university libraries. They thought, for example, that adopting ETD programmes would result in greater user satisfaction. Postgraduate officers perceived other benefits associated with these programmes and indicated that making theses electronically available would give a good impression about the university.

The following sub-sections present the benefits that were perceived by the research participants.

6.1.1. Advantages for postgraduate students and researchers

The research interviews of this study showed that ETD programmes were perceived as providing several benefits for postgraduate students. The following sub-sections present the perceived benefits for postgraduate students. These included facilitating the search for theses

and dissertations, helping to improve students' research, making authors and their work more known and helping to protect students' copyright.

6.1.1.1. Improved access

The majority of the research participants indicated that ETD programmes would help researchers and other postgraduate students obtain access to theses and dissertations more quickly and easily. They explained that the availability of theses and dissertations on the internet would give students the ability to obtain access to these theses without the need to go to the library building. This would save students time and effort. An academic staff member highlighted this benefit by drawing a comparison between paper theses and the electronic availability of theses and stated that:

> Sometimes, a thesis may be located in a distant country, but because it is available electronically, you can access it within a few minutes. In contrast, it may take up to two to three weeks to obtain a thesis in paper form and on occasions it may get damaged or become lost along the way.

One library manager indicated that the electronic availability of theses and dissertations "would facilitate and simplify access to these theses for researchers and, as a result, save them time and effort". Another library manager stated that ETD programmes would facilitate access to theses "at any time, on any day and even outside of the library's opening hours".

Academic staff would also be able to get instant access to their students' work. As a result, research supervisors could direct recently registered students to access these electronically available theses in order to develop an understanding of appropriate writing styles and research methodologies, as one respondent stated:

> I would be able to access my students' theses instantly through the web whenever the need arose without having to resort to paper copies. And, should I need to show these theses to other students, it would be very easy if these were available online, especially with regard to new students, so that they can come to learn the appropriate writing styles and methodology.

In addition, postgraduate students highlighted that making their theses electronically available would help other researchers to get free access to their research. Some expressed that since they benefited from other people's research they too, in turn, wanted to allow other

researchers to benefit from their research. Others indicated that this sentiment is also inherent in the Islamic culture, which emphasises sharing knowledge freely with others. One student stated that "since I benefited from others' research I should also allow others to benefit from my research by making it electronically available. It is also because my religion asks me to distribute knowledge and not to hide it".

6.1.1.2. Improvement to students' research

It was also perceived that postgraduate students could use ETD programmes as a tool to improve their research. They would be able to obtain access to past theses and dissertations closely related to their area of interest either from the same university or from other universities anywhere in the world. Around a third of postgraduate students interviewed in this study stated that if theses were made electronically available, they would be able to find other research done in the same area of interest. Thus, they would be able to examine the steps of conducting research, the appropriate research methods, the results, the references and bibliographies, and even other researchers' ways of thinking. One postgraduate student stated that "if I found the theses of other students to be similar or related to my research topic then I would not start from scratch, rather benefit from and continue to build on their existing findings". Additionally, a few participants assumed that if students' theses were made electronically available, there would be opportunities to receive comments and suggestions from other researchers who may read their online theses. As a result, such comments would help students to improve their research. An academic staff member outlined that "the researcher would receive comments from other researchers about his/her research and this would help him/her to develop their scientific and research outcome".

6.1.1.3. Better exposure

Several research participants stated that making theses and dissertations electronically available could help to advertise those theses and, thus, theses' authors would be more known in their field and area of interest. They understood that access to theses would open up their research to a wider audience in their field. One academic stated that the electronic availability of theses and dissertations "will make students' theses accessible worldwide and expand the potential readership, which in turn will likely increase the number of citations and references to these theses in other research".

6.1.2. Advantages for academic staff

The majority of the perceptions gathered from academic staff in this study identified several benefits of ETD programmes. For example, they indicated that the online availability of their students' theses would allow them to get instant access to their students' work (see section 6.1.1.1).

Another benefit that several academic staff perceived was the avoidance of duplication of the same research topics. They indicated that if theses were electronically available, their students would be able to select new topics that were not already being investigated.

6.1.3. Advantages for libraries

The majority of library managers in this research highlighted several benefits that libraries could gain from ETD programmes. Library managers indicated that making theses and dissertations electronically available would allow libraries to provide remote services, reduce routine work, save space, control and manage photocopying and, as a result, increase users' satisfaction.

6.1.3.1. Provision of remote services

According to the interviews conducted, libraries would be able to provide their services remotely. This means that users would not have to go to the libraries and spend their time searching shelves and photocopying the required materials. One academic stated that "The greatest advantage of these programmes is that you can find the information you need from your desk without having to travel, come and go, mail materials or perform other such time-consuming tasks".

6.1.3.2. Increased satisfaction amongst users

Based on the above benefits, a library manager believed that by making theses electronically available, users would be more satisfied with the library services. he indicated that libraries must adopt new technologies and provide new and further electronic services to their users. Thus, the adoption of an ETD programme would be seen as a new service by library users. The library manager stated that:

As regards libraries, adopting such programmes would be seen as a great achievement on the part of the institution itself. This is because users have come to expect the introduction of all-new technologies and services in libraries and are no longer content with routine services such as book and literature provision and the answering of queries. Libraries must surprise users with modern services. Making theses electronically available on the library website will be a great achievement for the library.

6.1.3.3. Reduced routine work

A few library managers brought to light that making theses and dissertations electronically available would help simplify the process of making documents available to users. They stated that the process of making documents electronically available would be easier and faster than the process of making them available on the library's shelves. Thus, libraries could save time when providing documents electronically and, as a result, they could provide extra services to users. One library manager made a comparison between the traditional way and the electronic way of making documents available to users and stated that:

> Making documents electronically available reduces the routine work in the library and saves on cost, facility and shelf utilisation, and time and effort. As we know, paper documents need to be stamped, registered, shelved, bound, and subject to other routine tasks. For electronic documents, these first need to be scanned and converted to digital format, and then put in the system and made available to users. This will also save the library money and save time for staff, who can use this additional time to provide further professional services rather than being occupied with routine tasks.

It is important to note that this benefit was perceived only at two locations. The two sites in question have in common the fact that the process of thesis digitisation is already underway, and thus this benefit may already have been experienced at the institutions concerned.

6.1.3.4. Space savings

Several research participants, especially library managers and academic staff, also indicated that making theses and dissertations electronically available could help to save significant space in libraries. They expressed that new storage technologies could save a huge amount of

information on small storage devices. One academic staff member stated that adopting ETD programmes would help to "free up some of the shelf space usually reserved for paper theses and research. A large number of theses and research projects can be stored on a single CD or flash memory drive". One library manager also stated that "making documents electronically available reduces the routine work in the library and saves on cost, facility and shelf utilisation, and time and effort".

6.1.3.5. Controlled access to theses

A number of library managers indicated that by making theses and dissertations electronically available, libraries could easily manage the availability and use of theses and dissertations. They stated that libraries could restrict access to the electronic theses. One library manager stated that:

> In electronic form you can apply some restrictions and some criteria, for example you can disable the printing function of the entire thesis either for outside users or some groups in the university. Also, you can specify certain pages that can be printed from a thesis. Therefore, in my opinion, I believe we can very easily manage and control electronic theses more effectively than paper theses.

6.1.4. Advantages for academic institutions

A few system administrators reported that ETD programmes would facilitate the archiving of theses and dissertations. A few other participants also thought that adopting these programmes would help to give a good impression of the university.

6.1.4.1. Facilitated archiving of theses

Making theses and dissertations electronically available was perceived as facilitating the electronic archiving of theses and dissertations. One system administrator stated that ETD programmes would "facilitate the electronic archiving of these theses since all theses would be stored electronically in one database and we can go back to them any time". Another system administrator further highlighted this benefit and made a comparison between the traditional way of dealing with theses and dissertations and the electronic way and stated that

ETD programmes would "facilitate the archiving of these documents…. In contrast, difficulty is experienced in preserving paper documents and in managing them".

6.1.4.2. Good impression concerning academic institutions

The second benefit for academic institutions that a few participants (library manager, postgraduate officer) perceived was that adopting ETD programmes would give a good impression about the university in terms of its use of new technologies. They indicated that the adoption of an ETD programme would present to others the image of the university as a highly advanced institution with regard to the application of technology, given its implementation of such new technologies and programmes. One postgraduate officer stated that adopting an ETD programme creates "a good impression about the university, in that it seeks to adopt new information technologies".

6.1.5. Discouraging plagiarism

Several research participants indicated that making theses and dissertations electronically available would help uncover any instances of plagiarism involving these materials. Therefore, plagiarisers would be aware that they would be caught quickly. One postgraduate student stated that:

> If someone were to copy information from published research available on the internet from a location anywhere in the world, it would be very easy to uncover this fact by performing a corresponding search online. Therefore, uncovering instances of plagiarism and illegal copying would be easier where information is made available electronically, than if available in paper form only.

6.1.6. Strengthening of research in Arab/Arabic-speaking countries

A very few of participants (nine interviewees; postgraduate students, academic staff) observed that adopting ETD programmes would help to strengthen research written in Arabic by enabling researchers to gain access to research in the Arabic language. They pointed out that there was a lack of research in the Arabic language currently available electronically. Therefore, they believed that making theses and dissertations electronically available would

allow other researchers in Arab countries to gain access to and benefit from this research. One academic staff member explained that:

> If all theses in one specific specialisation were made available electronically, this would help researchers to select their topics and choose other ideas not previously investigated; or, they would be able to build on another student's existing research to reinforce the scientific research base in the Arab world and in the Gulf States in particular.

6.1.7. Encouraging participation in ETD programmes

All of the research participants reported that the expected benefits of ETD programmes motivated and encouraged them to support the adoption of these programmes. One postgraduate officer stated that "I strongly support the idea of making theses and dissertations electronically available because of the great benefits". In addition to the positive influence on participants of considering these benefits, several participants indicated that the benefits of ETD programmes would help to counter fears regarding the expected complexities and concerns surrounding several issues, such as copyright and plagiarism. They indicated that the various benefits of these programmes encouraged them to support the adoption of these despite harbouring concerns surrounding legal issues. One academic stated that legal issues "do not influence my decision to support this programme as the benefits of the programme outweigh the anticipated problems".

6.1.8. Summary (appreciation of the benefits)

In summary, a number of perceived benefits were highlighted in the interviews. The perceived benefits can be categorised at personal, institutional and contextual level (at contextual level means all benefits that are for the whole society and not exclusive to specific institutions or individuals). Benefits at institutional level include the good impression concerning academic institutions, facilitated archiving of theses, controlled access to theses, space saving, reduce routine work, and increased satisfaction amongst users. Benefits at contextual level include the strengthening of research in Arabic speaking countries and leading to more and better quality research being done in the Gulf States. In addition, the research participants thought that the benefits of ETD programmes would help to motivate and encourage them to support the adoption of these programmes. Several participants also

indicated that they were going to support the adoption of ETD programmes because of their benefits, despite having concerns about some legal issues, such as plagiarism (as outlined in section 6.3.1.3). It is worth noting that interviewees at one institution perceived greater additional benefits than interviewees at other institutions. Participants at this institution indicated that promotional activities regarding these programmes had been implemented. In general, these perceptions and strong appreciation of the benefits were considered as possible strong enablers to the adoption and development of ETD programmes in the Gulf States.

6.2. Technological factor

From the interviews conducted, analysis of the perceptions gathered from the research participants revealed fewer concerns surrounding technological processes. Although a select number of participants expressed some minor concerns about certain processes, such as the process of scanning printed theses, participants indicated that these processes could be established easily where the required resources were available. In general, the research participants stated that the technological processes could be established easily provided all the appropriate resources were made available. In addition, they indicated that the universities already implement several electronic systems and in that it would not be an issue to add one further electronic service like an ETD programme. However, a very few of other participants expressed increased concern surrounding the technological processes and indicated that these may entail certain difficulties. The technological processes that the research participants highlighted included converting theses from a printed format to an electronic format, long-term preservation, security and integrating the programme with other university systems.

It is necessary to mention that the technological processes were more deeply discussed with system managers and postgraduate students since these two groups have more involvement in the technological processes. The involvement of students comes when they need to submit their theses in order to participate in ETD programmes, while the involvement of system managers comes in several technological processes, such as scanning paper theses, security, and long-term preservation of these theses and dissertations. The following sub-sections outline these issues.

6.2.1. Scanning printed theses

The majority of the research participants, especially system administrators, stated that the process of converting printed theses from paper format to an electronic format would not be a difficult task. Several participants explained that the theses already exist in electronic format on computer systems and, thus, it would be very easy to make these electronically available. In addition, a few participants indicated that although some theses were available in paper format only, it would be an easy task to contact their authors and ask them to provide the relevant digital files as the authors were resident in the country.

In general, the majority of the research participants considered the process of scanning theses to be without difficulty where the appropriate resources are available. One system administrator stated that "because of the new hardware and new development in technologies related to ETD programmes, the scanning process has become very simple and easy and, therefore, problems in this respect are not anticipated".

On the other hand, a very few participants (six interviewees) perceived some difficulties associated with the scanning of paper theses and dissertations, such as difficulties in dealing with old theses that were not in a good physical condition and theses in the Arabic language. The following paragraphs outline these difficulties.

A number of system administrators indicated that there would be some difficulty when dealing with old theses. They reported that scanning old theses and dissertations would be a time-consuming process as these would require greater effort, especially if not in a good condition. One system administrator highlighted this issue and stated that "if the paper copies of theses were very old and not kept in a good state of repair, they may require more effort and the process may be made slightly more difficult". On the other hand, a number of other participants understood that if dated paper theses were in a good condition, the process of scanning them would not present a problem. One system administrator stated that "if old paper copies were stored and kept in good condition, they can be easily scanned and converted to digital files".

Only one system administrator made mention of difficulties in dealing with theses in the Arabic language. It was his opinion that scanning Arabic scripts would be more difficult than their Latin equivalents. He explained that "text recognition in the case of Arabic script is difficult, especially if the font is unclear and not precise".

In addition, a few system administrators indicated that the process of scanning paper theses varies in difficulty. It could be easy or difficult depending on the requirements of the scanning process. They indicated that the process would be easy if scanned theses were required as images only. One system administrator indicated that "if we are planning to make theses as images, the process will be easy". On the other hand, the scanning process was perceived as difficult and time consuming where extractable content and in-text searching were required. One participant highlighted this issue and stated that:

> The difficulty of scanning theses depends on what is required from these; do we need to make them readable only? or do we need to allow word searching within the thesis text? These requirements will play a significant role when it comes to the scanning process. The more exacting the requirements, the more in the way of facilities are necessary, and the longer the conversion process will take.

6.2.2. Security of electronic theses and dissertations

The majority of the system administrators highlighted the importance of thesis security when made electronically available. They indicated that theses would be more vulnerable to online attacks when made electronically available because of their accessibility to everyone. Nevertheless, they indicated that the process of security would be without difficulty provided universities have the proper plans and facilities in place. One system administrator stated that "provided protection systems to deal with viruses and other attacks are available; making online theses secure would be straightforward and no major concerns regarding this issue would be expected". In addition, a number of system administrators pointed out that since universities run many online systems, good security systems are in place. One system administrator stated that "we have more than one level and layer of security to protect our documents from internal or external attacks".

6.2.3. Integration of ETD with other systems

Only one system administrator perceived difficulties in integrating an ETD programme with other systems in the university. He suggested that an ETD programme should be able to interoperate with other systems in the university. He stated that:

I expect difficulties when attempting to make all software and hardware components work seamlessly together. I believe this may require additional outlay and may prove a bit sophisticated. We do not want the ETD programme to work in isolation. Rather we want it to work and cooperate with other systems in the university.

6.2.4. Long-term preservation

Analysis of the data indicated that the majority of the system administrators do not hold the long-term preservation of theses and dissertations to be a challenging affair. The sole concern surrounding this issue, observed by one participant (system administrator), was the cost of storage devices, especially if theses were required to be preserved and stored for extended periods. The participant stated that "if the storage period required for theses is too long, the costs would be exuberant owing to the need for additional storage devices". The remaining research participants indicated that the process of preserving theses and dissertations would be an easy one. They indicated that preserving digital content would be easier than preserving paper content. One system administrator explained that "paper content takes more space and requires a specific air temperature and humidity and warrants special treatment. In contrast, digital content can be re-saved in other media very easily and, therefore, would be easy to update".

Another system administrator pointed out that new developments in storage technology were helping to make the preservation process much easier. He drew a comparison between the storage devices of the past and of today and reported that:

> The storage process has now become very easy. In the past, people used microfilm and microfiche and these media were sensitive and could be damaged easily. However, currently there is no specific place where we can store electronic information safely away from people and dust. Many protection devices and software packages are currently available. Furthermore, we can save information in faraway places and even in other countries and access to this information can be obtained very easily via telecommunication. Therefore, it is very easy to save electronic information for many years without any difficulty.

In general, the system administrators did not perceive any difficulty in the long-term preservation of theses and dissertations, especially if all the required resources were present.

They indicated that the preservation process itself would not be difficult. One system administrator stated that "storing documents for many years does not present any problem and is very easy if we provide the appropriate facilities".

6.2.5. Availability of the appropriate resources

In addition to the individual perceptions regarding the complexity of the technological processes, the research participants highlighted other institutional factors that could influence the complexity of these processes. A number of research participants (library managers, system administrators) indicated that the technological processes would be difficult if the required resources were lacking. Some participants pointed out that there were insufficient staff numbers to perform the required technological processes. In particular, they indicated that the available staff lacked the skills required to deal with the technological processes. One library manager stated that "there is a need to train our staff in the use of this new programme and in the new working procedures introduced, such as how to deal with electronic content and make it available to users".

In addition, a number of other research participants pointed out that there was a lack of appropriate policies and plans to monitor and control ETD programmes in general and the technological processes specifically. For example, online security of theses would be difficult if there was a lack of appropriate policies. One system administrator explained this point and stated that "the electronic copies can become lost or damaged if there is no appropriate plan to have backup copies made. So, whenever there is any electronic loss or damage to any computer, there are always backup copies available". In fact, no documents collected from any of these institutions revealed any policies regarding the preservation and security of online documents.

In general, the majority of the research participants assumed that the technological processes would be straightforward if the appropriate resources were available. One system administrator stated that "once you have more highly developed facilities, software and hardware that provide more sophisticated functions and more than one person involved in scanning, the conversion process will be very simple and time will be saved". This perception highlights the influence of the availability of the appropriate resources in the technological processes. The issue of the availability of the required resources is highlighted in more detail in section 6.4.

6.2.6. Influence of the technological processes on the adoption of ETD programmes

Analysis of the perceptions gathered from the research participants indicated that the technological processes were not perceived as a possible major barrier to the adoption and development of ETD programmes, especially if all facilities and requirements were provided. The only possible influence pointed out by several research participants was the speed of adoption of these programmes. They stated that some of the technological processes, such as scanning paper theses, would be time consuming. The following paragraphs outline the participants' perceptions in regard to the influence of the technological processes on the adoption of ETD programmes.

The majority of the research participants indicated that the technological processes would have no influence on the adoption of ETD programmes. In addition, they pointed out that the expected complexity of the technological processes would not influence their support of the adoption of ETD programmes. One system administrator reported that "technological processes will not influence my support for this programme and I do not think these issues will hinder the adoption of this programme".

In addition, perceptions gathered from the research participants showed that the most visible influence of the technological processes would be in the speed of the adoption of ETD programmes. A few of participants (eight participants) indicated that the technological processes, such as scanning paper theses and dissertations, would be time consuming. One system administrator also remarked that "the conversion of dated content and theses may influence the speed of adoption because this process takes time". Another postgraduate officer reported that introducing the technological processes "may delay the adoption of this project for a period of time". It is worth noting that the delay in the adoption of ETD programmes due to the introduction of technological processes was strongly perceived at one institution. This institution had already started to digitise its paper theses and manuscripts. In addition, it had the greatest number of theses compared to other institutions (more than 10,000 theses and dissertations). Thus, they might find this process time consuming.

With regard to the influence of resources on technological processes, the majority of the system administrators interviewed indicated that the technological processes would not be difficult if all the required resources were available. These resources included appropriate

policies and plans, appropriate software and hardware, training programmes, and sufficient staff. This finding again highlights the influence of the availability of the appropriate resources on the technological processes. One library manager stated that "it would be very easy to implement the programme if all the required facilities and resources were on hand".

6.2.7. Postgraduate students' point of view

Analysis of the perceptions gathered from the interviewed postgraduate students indicated that they did not perceive any difficulty in the processes required to participate in ETD programmes. These processes included submission of electronic copies of their theses, converting their theses from the original format into a PDF format and submitting theses on CDs. The following sub-sections analyse students' perceptions with regard to the technological processes.

6.2.7.1. Submission of electronic copies of theses

The majority of postgraduate students indicated that the submission of electronic copies of their theses and dissertations would not be an issue or a difficult process since their theses were already available in electronic format. One postgraduate student stated that "I do not expect there will be any problem or difficulty in this regard because I have an electronic copy of my thesis already. So, if they were to ask me, I could easily submit the electronic copy to them".

Postgraduate students also indicated that the submission of their theses on CDs would not be a difficult process. One student reported that "in terms of submitting my thesis on CDs; this I can do myself very easily".

6.2.7.2. Converting theses to PDF

The majority of the postgraduate students questioned did not perceive any difficulty in converting their theses into PDF files. Their perceptions indicated that the conversion process of theses from the original format to PDF files would be easy. They also explained that appropriate conversion software is available and is very simple to use. In general, they explained that new technologies have become much simpler and easier to use. One postgraduate student stated "I do not expect there to be any difficulties or complexities in this

process. The conversion process of theses is currently very easy because technology always gets developed and becomes easier to use".

6.2.7.3. Support from university

In addition to the simplicity of the technological processes, the majority of postgraduate students reported that the university would provide all the support they may need in order to participate in ETD programmes. They indicated that the university was providing all the facilities they require, including computer labs and technicians. One student stated that "I think the university has all the facilities required for this programme. It provides computer laps and technological support to all students if they have any technological difficulties".

6.2.7.4. Influence of the expected complexities on students' participation in ETD programmes

Perceptions gathered from postgraduate students illustrated that their attitudes towards participation in ETD programmes would not be affected by the expected complexity of the technological processes. As outlined in the above sub-sections, the majority of students did not perceive any difficulty in the technological processes. One student stated that "I do not think such complexity may influence my participation in this programme. These are simple issues and can be solved and dealt with very easily". Several students also indicated that the technological processes would not influence their participation because they had strong appreciation of the benefits of ETD programmes. One postgraduate student reported that "Even if there are some difficulties or complexities in this process, my decision to participate in this programme will not be influenced by these as I am already very convinced of the importance of the programme". This finding highlights the influence of the appreciation of the benefits of ETD programmes with respect to technological processes.

6.2.8. Summary (Technological factor)

In summarising key informants' perceptions, it was obvious that the technological processes required to adopt ETD programmes were not perceived as a possible major barrier to the adoption and development of these programmes in the Gulf States, especially if the entire necessary technological infrastructure was available. The research participants in general and

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postgraduate students specifically thought that the technological processes required to adopt and develop ETD programmes would not be difficult. In addition, they indicated that technological processes would have no influence on their decision to support the adoption of ETD programmes. Postgraduate students specifically also stated that the technological processes would not have any influence on their decision to participate in these programmes and, thus, they would be willing to do so.

Although very few participants believed that the process of scanning paper theses would be time consuming, they indicated that this process could be handled easily once the appropriate facilities were provided. Thus, the factor that several participants believed would present a challenge was in fact the lack of appropriate resources and facilities required to adopt ETD programmes. Such resources included lack of appropriate staff to handle the technological processes, lack of the appropriate technological infrastructure and lack of the appropriate organisational infrastructure (as outlined in section 6.4). This demonstrates the influence of the availability of the appropriate resources on the technological processes. This finding also indicates that the complexity of the technological processes is influenced more by institutional factors than by personal perceptions. As a number of interviewees indicated, the technological processes can be conducted more easily once the required resources are available.

6.3. Concerns regarding ETD programmes

Analysis of the interview findings demonstrated several concerns that the interviewees had regarding ETD programmes. These concerns were mostly about legal issues, such as copyright, publication and plagiarism. A few interviewees also expressed concerns regarding the quality of theses and dissertations, while others expressed concerns regarding the use of new technologies.

6.3.1. Concerns regarding legal issues

Concerns about legal issues include concerns regarding copyright issues, future publishing, and plagiarism. These issues are outlined in the following sub-sections.

6.3.1.1. Copyright issues

Copyright issues were divided into two sub-sections: obtaining copyright permission and copyright restriction. The following two sub-sections outline these two issues.

6.3.1.1.1. Obtaining copyright permission

As discussed in the literature, students own the copyright on their theses and dissertations (Surratt, 2005). Therefore, their permission must be sought before making their theses and dissertations available online. According to the interview findings, less than a third of participants held general concerns regarding copyright permission. On the other hand, almost two thirds of the research participants (library managers, postgraduate officers, academic staff) indicated no concern regarding this issue. Those that did express concern regarding the acquisition of copyright permission explained that these concerns stem from the fact that their institutions did not have appropriate policies in place for copyright. This finding highlights the influence of the existence of copyright policies on obtaining copyright permission from students. One system administrator explained that "the issue of copyright is of some concern and it might hinder the adoption of the programme. We do not have the appropriate policies to allow the university to publish these theses and dissertations, especially dated theses".

A number of other participants expressed concern regarding copyright permission because they thought that academic advisors also had to give their permission as well as students. One academic staff member reported that:

> I think it will be very hard to obtain from students permission to make their theses and dissertations electronically available as their supervisors also have rights with regard to these and their consent must likewise be sought when making theses electronically available. So, I think students cannot make any decision in this respect without permission from supervisors.

On the other hand, almost two thirds of the research participants expressed no concern regarding the issue of copyright permission. Some explained that the existence of appropriate policies would solve this issue. One academic staff member stated that "I do not think there is any problem. The university has an appropriate form that all students have to sign when they submit their theses and, thus, can agree or refuse to make their theses electronically available".

Some of the participants believed that if students agreed to make their theses available electronically, issues regarding copyright would not be a concern. One academic stated "I do not think there is a problem with copyright, especially if the student agrees to make his/her thesis accessible online. By doing so, the student surrenders his/her copyright to the university". At this same juncture, several participants asserted that postgraduate students appreciate the idea of making their theses electronically available and, thus, would give their consent. One academic reported that "I think students appreciate the idea of making their theses and dissertations electronically available. As a result, they will agree to surrender their copyright to the university in order to make their theses electronically available as a full-text".

Several participants offered solutions to obtain the copyright agreement of students. Some asserted that students should be informed at an early stage regarding ETD programmes and be given assurances that their copyright would be protected. One academic stated that "we can easily obtain the students' permission to make their theses electronically available, especially if we convince and assure them that the university will protect and preserve their copyright". This finding highlights the importance of conducting promotional activities in order to convince students of the merit of ETD programmes.

In addition to conducting promotional activities to bolster assurances amongst postgraduate students, the majority of the research participants believed that the establishment and existence of appropriate policies would resolve the issue of obtaining copyright permission. They suggested that the electronic submission of theses and copyright agreement should be made compulsory. This finding substantiates the influence of establishing appropriate policies in obtaining copyright permission from students. One academic stated that:

> We can resolve this issue by establishing proper policies that must be applied carefully. Students need to sign a form stating that they agree to make their theses electronically available. It would then be up to the university to implement the appropriate policies and procedures to protect the copyright of students.

6.3.1.1.2. Copyright restriction

Postgraduate students asked as to whether they had any concerns, prior to the electronic publication of articles composed from the content of their thesis, regarding copyright

restrictions. The majority of these students asserted that they did not have concerns about this issue. Only a select few expressed some concern regarding the issue. For those who expressed no concern, the explanation given was that journals have no rights with regard to copyright on theses and dissertations. One postgraduate student stated that "this issue does not concern me because the copyright will remain mine. I do not think that the journal can prevent me from making my thesis electronically available".

A number of other students explained that it was common practice to publish many articles from theses. Therefore, they did not harbour any concerns regarding copyright restrictions in the event of an article's publication. One student explained that "I am not worried about this issue because I know of several cases in which theses and dissertations were published as journal articles and then subsequently made electronically available on the internet or in other databases as a full-text". Several other students explained that distinctions can be drawn between journal articles and the original theses and dissertations. Differences can be identified in terms of title, structure, and coverage. One postgraduate student stated that "usually, journal articles are completely different from the original theses. The volume of content and the structure are quite different. Journal articles are modified and edited before publication in journals".

On the other hand, only a small number of students expressed concern about copyright restrictions in the event journal articles were published prior to participating in ETD programmes. Members of this group expressed a lack of awareness regarding the likelihoods of copyright restriction in the case of publishing. One student reported that:

> I am not sure whether the journal has the right to prohibit me from making my thesis electronically available or not. So, in this case, I may have some concern if I know that the journal has the legal right to prohibit me from making my thesis electronically available on the internet as a full-text.

6.3.1.2. Future publishing

Future publishing means the possibility of publishing a journal article that is derived from a thesis already available on the internet. The interview findings indicate that the majority of postgraduate students harbour no concerns with regard to future publishing. Only a few students held such reservations. For those who expressed no concern regarding future

publishing, they explained that it was common to publish several articles from one thesis. Moreover, the students explained that a journal article usually differs from its original source thesis in a variety of ways, with differences identifiable in terms of structure, length, focus and referencing style. They also added that articles are usually reviewed and modified before being submitted to journals. One student reported that "differences are indeed discernable between journal articles and the original theses in the structure, the length and even the citation and referencing style".

On the other hand, only a small number of students expressed concern regarding future publishing, indicating that they may refuse to allow their theses to be published electronically if this were to prove detrimental to their journal publication opportunities. One student stated that "if the availability of my thesis on the university website was to affect my chances of participating in conferences or of publishing journal articles, then I might indeed refuse to make my thesis electronically available". Nevertheless, those expressing reservations regarding this issue suggested some solutions to alleviate concerns. They suggested that students should publish several articles before agreeing to make their theses electronically available. One student reported that "I suggest that whenever the researcher completes his/her thesis, he/she should pick some issues and topics out of their theses and publish these in scientific journals".

6.3.1.3. Plagiarism issues

Analysis of the interviews shows that less than half of the research participants questioned had concerns about plagiarism issues. The chief concern was that theses are more vulnerable to plagiarism when published electronically. On the other hand, more than half of the research participants questioned expressed no concern on this issue. They explained that plagiarism occurs in both eventualities; published in print or electronically. Those who expressed concern about issues of plagiarism offered solutions to protect electronic theses and dissertations. The following sub-sections outline the various perceptions regarding issues of plagiarism.

6.3.1.3.1. Concerns surrounding issues of plagiarism

Some participants who held reservations concerning plagiarism (academic staff, postgraduate students, library managers, postgraduate officers) explained that the issue is facilitated when

theses and dissertations are made electronically available. One academic staff member stated that "without any doubt, making theses and dissertations accessible online will help facilitate incidents of plagiarism". Other participants indicated that concerns surrounding plagiarism would be greater in Arab countries than in other countries. One postgraduate officer offered an explanation "I do not like the idea of making theses available electronically as full-text because in our region plagiarism occurs and I am sure it will happen if we make theses electronically available". Some of the participants explained that plagiarism occurs in the Gulf States because of the lack of appropriate policies and legislation. One academic stated that "if the electronic accessibility of theses is not connected with appropriate policies and procedures controlling this accessibility, then problems will occur". Postgraduate students in particular indicated that the absence of appropriate policies controlling and preserving their theses discourage them from participating in ETD programmes. One postgraduate student explained that "the main discouraging factor is the plagiarism issue, especially if there is a lack of appropriate policies protecting our theses". This last point indicates that the availability of appropriate policies is an important factor with regard to concerns surrounding plagiarism.

6.3.1.3.2. *No concerns surrounding issues of plagiarism*

More than half of the research participants indicated that the plagiarism issue did not concern them. Some participants (academic staff) highlighted that plagiarism was not exclusive to electronic theses. There were several other electronic resources available online and vulnerable to plagiarism, such as electronic books and electronic journals. In addition, several participants indicated that paper and printed theses were also vulnerable to plagiarism as well as electronic theses. One postgraduate student reported that "this issue does not concern me because plagiarism can also happen in the case of printed and paper documents. Therefore, there is no difference, whether kept in paper form or made electronically available".

Moreover, several participants (postgraduate students, library manager) outlined that electronic theses can be protected more effectively than their paper and printed counterparts. They reported that the electronic availability of theses can be managed and controlled by applying access restrictions. One postgraduate student expressed that:

> I believe there will be some policies and criteria established in order to manage and
> control the electronic availability of theses and dissertations, such as making available

some parts and restricting access to others. Also, there should be accessibility related policies in place; i.e. giving users read-only access to thesis with no copying or downloading capabilities.

In addition, some participants believed that the electronic availability of theses would make it very easy to discover any such instances of illegal copying. Thus, people will be more hesitant to copy illegally from the internet. One academic staff member outlined that:

> Illegal copying or quoting can happen even from library shelves and in such cases it often remains undiscovered. However, if the information is available electronically, the researcher may hesitate before making an illegal copy. This is because he/she will be aware that he/she will be discovered quickly since others will be able to trace the original source information. Therefore, making information available electronically will play a role in reducing instances of illegal copying and quoting.

Further to these perceptions, a number of participants indicated that making theses electronically available would have a positive aspect. It would challenge students to write their theses properly and adhere to the scientific methods of referencing and quoting. One academic stated that "if students know that they will be obliged to put their theses online, they will be more careful about copying from other sources".

6.3.1.3.3. Suggestions concerning issues of plagiarism

Those expressing reservations regarding plagiarism put forward suggestions to alleviate concerns. Suggestions were mostly concentrated on the institution of appropriate policies. Participants indicated that concerns surrounding plagiarism could be eliminated by establishing appropriate policies and applying access restrictions to online theses. One academic staff member suggested that "establishing and applying appropriate policies and procedures will eradicate any such concerns entirely. In addition, it will stop and frighten those considering breaching other students' copyright". Several participants specifically suggested that accessibility to electronic theses should be restricted in different ways. Such restrictions include disabling copying and printing and disabling access to theses from outside the university. One library manager reported that:

> In electronic form you can apply certain restrictions and criteria, for instance you can disable the printing function for the entire thesis either for external users or for some

groups within the university. Also, you can specify certain pages that can be printed from a thesis. Therefore, in my opinion, I think we can very easily manage and control electronic theses more effectively than paper theses.

A number of participants also suggested that students should publish journal articles and papers before making their theses electronically available. One academic stated that "it is advisable for students desiring to make their theses electronically available to first publish articles composed from the content of their theses in scientific journals".

6.3.2. Perceived quality of theses and dissertations

Some academic staff and postgraduate students mentioned that concerns regarding the perceived quality of theses and dissertations are one of the reasons for the rejection of ETD programmes by some individuals. They explained that some students may refuse to participate in these programmes if their theses are perceived to be of a poor quality in terms of following the scientific and appropriate way of conducting and writing research. Their fears surrounding the granting of online access to their theses are therefore of potential criticism by other readers. They also indicated that the university may not accept the electronic publication of theses and dissertations if not deemed to be of a good quality. One academic staff member stated that:

> One of the reasons that hinder the adoption of this project in some universities or in some specialisations is that theses and dissertations are not of a good standard and do not reach the level that allows them to be published and made available electronically on the internet. Therefore, these institutions try to use caution when publishing theses online and, therefore, do not publish substandard theses because of their representation of the university's quality and the quality of its scientific research.

6.3.3. Uncertainty regarding new technologies

The research participants were questioned as the whether they sample new technologies when first introduced or whether they prefer to wait to ascertain the experiences and suggestions of other users before trying for themselves. Around two thirds of the participants questioned agreed to the former. In particular, they indicated that if new such technologies were proven to be beneficial to them or to their organisations, they would be prepared to use these right

away. One postgraduate student stated that "if this new technology is highly beneficial to my research and I believe that I will miss out on many benefits by not using it, then, generally, I try it even if no one I know has tried it before". One library manager also stated that "I prefer to try new technologies from the outset if I think it will help my organisation".

Several other participants explained that the use of electronic resources is common place within the university community. One library manager reported that:

> The university community will appreciate this idea because they strongly appreciate any new technology. Most of our students, academic staff and researchers visit the library, but the nature of their visits today is not like it once was. In the past, visits were made in a physical sense. Today, however, visits are virtual through the library's website where access is provided to electronic resources. This style of electronic search is now commonly used and a great number of students and academic staff use this new method.

On the other hand, around one third of the research participants (all the five groups) questioned expressed that they would not use new technologies from the outset. They indicated that they would first prefer to evaluate the experiences of others. One postgraduate student stated that "I would wait for a period of time and see how others accept the new technology so that I can use and try it with greater confidence". One system administrator also reported that "I prefer not to try any new technology. I prefer to see other people trying it first because any new technology may have some problems".

A few participants explained that ETD programmes are new technologies and some people do not like to use new technologies. In particular, they claimed that older staff are more reluctant to use new technologies than their younger colleagues. One system administrator stated that:

> A minority of the university community may refuse to partake in this programme, especially those who are in the final stages of their scientific and professional lives and who have spent most of their lives dealing with traditional methods. Therefore, it may be difficult for them to adapt to new technologies.

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6.3.4. Summary (Concerns regarding ETD programmes)

In summary, the research participants expressed concerns regarding legal issues, such as obtaining copyright permission, copyright restrictions, future publishing and plagiarism issues. However, the majority of the research participants questioned did not perceive the legal issues as a barrier to the adoption and development of ETD programmes in the Gulf States, especially if the appropriate policies were available. This finding indicates that concerns regarding ETD programmes would be influenced more by institutional factors (the availability of appropriate policies). The research participants indicated that concerns regarding ETD programmes can be alleviated by establishing the appropriate policies and providing the necessary resources. Additionally, concerns surrounding the perceived quality of theses might make students and universities more reluctant to make such theses electronically available. This issue can be categorised as influenced by a contextual factor, which is the recent establishment of research programmes (discussion of this relationship is available in Chapter 8, section 8.3.4). These concerns, as a result, can be categorised as one of the possible barriers to the adoption and development of ETD programmes in the Gulf States. With regard to issues of uncertainty surrounding new technologies, these cannot be categorised as a possible main barrier to the adoption of ETD programmes because more than two thirds of the research participants indicated that they had no concern about using new or unfamiliar technologies.

6.4. Availability of resources

The majority of the research participants highlighted the importance of the availability of the required resources. They believed that the availability of technological infrastructure and organisational infrastructure would be one of the main enablers to the adoption and development of ETD programmes. The organisational infrastructure consists of appropriate staff, appropriate policies and funding as well as the availability of theses and dissertations. The following sub-sections analyse the required resources that participants believed would facilitate the adoption of ETD programmes.

6.4.1. Organisational infrastructure

The following sub-sections outline the organisational infrastructure that participants understood as would influence the adoption of ETD programmes. The organisational infrastructure includes appropriate staff, such as a project champion and other qualified staff to carry out the work necessary to adopt an ETD programme, as well as appropriate policies, and adequate funding.

6.4.1.1. Appropriate staff

The following sub-sections outline the importance of the availability of appropriate staff. The first point sheds light on the role of a project champion and his/her influence on others. The second point identifies the importance of other qualified staff involved in ETD programmes.

6.4.1.1.1. The project champion

The research participants perceived the possible influence of a project champion in the adoption and development of ETD programmes to be significant. The participants indicated that the availability of a project champion would help to motivate people to support and participate in these programmes. Some of the research participants outlined the responsibilities and duties that a project champion should take in order to adopt ETD programmes successfully. However, several participants indicated that there was a lack of such persons at their institutions.

Several participants (library managers, system administrators) indicated that a project champion should have a comprehensive knowledge of ETD programmes in order to be able to promote these effectively and motivate other people accordingly. The research participants differed in terms of who should be a project champion and lead ETD programmes. Some suggested a deanship or a college of graduate studies and others suggested academic staff. However, several participants, especially library managers and postgraduate officers, preferred libraries as an appropriate project champion to lead ETD programmes. They explained that libraries have qualified staff and maintain communication channels with libraries in other countries that may already have adopted these programmes. One library manager explained that "I think the library is qualified and ready to take this responsibility

because of its previous experience in this regard and also it has the qualified staff to assume this role".

As mentioned earlier, the research participants attributed great importance to a project champion in the successful adoption of ETD programmes. Several participants indicated that a project champion could influence other people and encourage their willingness to participate and support these programmes. They explained that a project champion could promote ETD programmes and raise people's awareness regarding these, their benefits and importance. They also indicated that a project champion should discuss all the issues related to ETD programmes, such as copyright and plagiarism with relevant persons. One academic staff member stated that "this person should conduct promotional activities to make the university community, especially students, aware of the programme and the related concerns, such as copyright issues".

In addition, a number of participants highlighted that a project champion would also be in a position to influence top-management personnel and motivate these individuals to support the adoption of ETD programmes. Some of the research participants further outlined that increasing awareness amongst top-management personnel of ETD programmes would further help to bring more administrative and financial support to these. This, as a result, would help to facilitate and foster the establishment of appropriate policies required for the successful adoption of ETD programmes. One academic staff member explained that "if this person came from high-level administration, he/she would be able to bring more administrative support to the programme. Such support would help to establish appropriate policies and also provide financial support to this idea". As in one of the research sites, the library manager stated that the university administration was encouraging the adoption of new ideas, which would, as a result, better serve the library users. He stated that:

> The university, in fact, is understanding and welcomes any new project that provides a new favourable addition to library services. The university administration always looks for new initiatives and has questioned us on many occasions over the past few years as to new ideas or new projects implemented. Therefore, because we are questioned frequently by the university administration concerning new endeavours and urged on, we have greater motivation and as a result we suppose we surprise the administration by adopting such projects in the library.

With regard to the availability of a project champion, a number of participants (library manager, postgraduate officer) reported that a project champion had already been appointed at their institution. One library manager stated that "we already have here a person directly responsible for the project and he is taking care of all the particularities related to this, including the associated technological processes, policies and procedures". However, the availability of a project champion was only noted at one institution. Other institutions had not appointed project champions responsible for ETD programmes. Several participants reported an absence of a project champion at their institutions. One library manager reported that "we do not have such a person here at the university. The main problem lies in determining who should take on the responsibility and attend to the matter at the institution" In addition, several participants indicated that the absence of a project champion was the main reason for not yet adopting ETD programmes at their institutions. They explained that no one at their institutions had raised the idea of adopting ETD programmes or led such programmes. One system administrator indicated that "I think that because no one has been asked to manage the project, no one has raised or championed the idea".

6.4.1.1.2. Other qualified staff

Analysis of the interviews indicates that the majority of the research participants understood that their institutions had the required staff to deal with and manage ETD programmes. Nevertheless, several participants, especially system administrators, believed that existing staff would need more training and appropriate workshops would need to be arranged in order to be able to manage ETD programmes effectively. On the other hand, only a very few of participants (one postgraduate officer and one system administrator) expressed that there was a lack of appropriate staff and the university would need to hire more staff in order to be able to adopt ETD programmes successfully. Overall, the research participants regarded the availability of appropriate staff at the university as an important factor in the successful adoption of ETD programmes.

Perceptions gathered from the majority of the research participants indicated that the availability of qualified staff would facilitate and foster the adoption of ETD programmes. They explained that the existence of qualified staff would help to accomplish all the required duties very quickly and professionally. Such duties would encompass scanning paper theses, long-term preservation and security of online theses. One postgraduate officer reported that

"qualified staff would be able to exert great influence and make the adoption of this programme in the university a success due to their ability to perform the required processes very quickly".

With regard to the availability of qualified staff, the majority of the research participants questioned reported that their institutions already possessed the required staff to deal effectively with ETD programmes. One postgraduate officer stated that "we have qualified staff and also in each college there are technicians qualified to deal with the digitisation process that we follow currently. We also have a centre for information technology and they have enough qualified staff". On the other hand, some participants reported that there was a lack of appropriate staff at their institutions. Some reported that the university solved this issue by outsourcing to private companies to perform certain tasks, such as scanning paper-bound copies of theses. One library manager outlined that "we have qualified staff working as technicians and we also hire a private company to perform the scanning of documents. The company has qualified staff to do this work". These participants also believed that the absence of appropriate and qualified staff was one of the reasons for not yet adopting ETD programmes at their institution. They indicated that there was a lack of qualified individuals to carry out all of the technological processes required in ETD programmes. One academic stated that "the adoption of this programme has been delayed due to the absence of professionals qualified to perform these duties". It is worth highlighting that interviewees at one institution provided contradicting perceptions in this regard. While one librarian stated that appropriate staff were available, a technician and a postgraduate officer indicated that there was a lack of appropriate staff at their institution.

More than half of the research participants indicated that existing staff lacked the appropriate skills and, thus, would need further training and workshops in order to be involved successfully in ETD programmes. One library manager stated that "some of our staff are qualified but not all of them. However, we can offer those who are not qualified, suitable training programmes and workshops to acquire the necessary skills".

6.4.1.2. Appropriate policies

The research participants valued the importance of the availability of appropriate policies in the adoption of ETD programmes. With regard to the availability of appropriate policies, some participants reported that their institution had some appropriate policies in place such as

the submission of electronic copies of theses, while others reported an absence of other appropriate policies such as copyright agreement policies. However, they assumed that it would be easy to establish such policies once the university had decided to adopt an ETD programme. The following sub-sections outline issues related to the availability, establishment and the influence of the appropriate policies.

6.4.1.2.1. Availability of appropriate policies

More than half of research participants, especially academic staff, questioned indicated that their institution had appropriate policies in place for the submission of electronic copies of theses. They also indicated that the policies in place would be enablers to the adoption of ETD programmes. One library manager stated that "I think the current policies we have facilitate making theses and dissertations electronically available. Students are required to submit two formats; a paper copy and an electronic copy of their theses to the university".

With regard to copyright agreement policies, only a very few of participants (library managers) indicated that there was an appropriate policy in place. One library manager reported that:

> We have procedures in place to deal with the new theses and dissertations we receive. These procedures include requesting permission from the author to publish the thesis electronically. However, with regard to older printed theses in our possession from before the project began, our attempts now are to contact the appropriate authors to secure their permission to publish electronically and to sign a form to this effect.

6.4.1.2.2. Lack of appropriate policies

Several participants reported a lack of appropriate policies either for submission of electronic copies of theses or for copyright agreement. With regard to submission policies concerning electronic copies of theses, several participants stated that current policies do not ask students to submit electronic copies of their theses and dissertations. One academic staff member stated that "existing policies are not appropriate for this project. Current policies do not compel students to submit electronic copies of their theses and dissertations".

With regard to copyright agreement policies, several participants also mentioned that there was a lack of such policies. One postgraduate officer stated that "we have a lack of

appropriate policies. What we need is to get the students' agreement to make their theses electronically available". However, the perception of this postgraduate officer contradicted documents collected from the same institution and also the perception of a librarian (see the librarian comment in the previous section 6.4.1.2.1).

It is also worth mentioning that even though several interviewees indicated that their universities did not have policies for submission of electronic copies of theses in place, documents collected from the same university indicated that such policies were already available. In addition, other interviewees at the same institution indicated that such policies were available. This indicates that at this time there were no promotional activities underway to raise awareness concerning the existence of some policies. It is also due to the fact that such policies had been established in certain departments, not for the whole institution.

In general, a few participants indicated that the lack of appropriate policies was one of the main reasons for not adopting an ETD programme at their universities. In particular, the research participants outlined the policy of submission of electronic copies of theses and the policy of copyright permission. One postgraduate officer stated that "the absence of proper policies for this process is the main reason for not adopting this programme".

6.4.1.2.3. Establishing appropriate policies

Analysis of data indicated that the majority of the research participants thought that the establishment of new policies or updating of existing policies would be quick and easy. They explained that once people come to appreciate the benefits and importance of ETD programmes, the establishment of appropriate policies would be straightforward. One academic staff member stated that "I think it will be easy to change the existing policies, especially if people are convinced of the importance of the programme".

On the other hand, some of the research participants perceived obstacles to establishing new policies or updating existing policies. They explained that some people might harbour concerns regarding ETD programmes and, thus, hesitate to support their adoption. One academic staff member stated that "certainly, it will be difficult to establish new policies because some people may hesitate to support the programme and harbour fears concerning the new technology".

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In addition, several research participants indicated that the establishment of new policies or updating of existing policies would be a time-consuming process. They explained that decisions pass through several committees and must be discussed before approval is given. One library manager stated that "it may take time to establish new policies because approval is required from many people at the institution".

6.4.1.2.4. Influence of appropriate policies

Analysis of the data gathered indicates that the majority of the research participants attribute great significance to the existence of appropriate policies. Several participants indicated that the existence of appropriate policies would facilitate the collection of theses and dissertations in electronic format. Others indicated that policies would help to obtain copyright permissions from postgraduate students. These policies, as a result, would make it easy to make these theses electronically available. One library manager explained that "as a result of these policies, we have all theses and dissertations available in electronic format and this will make it easy for us to publish these electronically. No manual scanning procedure is required". Another academic stated: "policies will help to collect all theses in electronic format and, at the same time, obtain the copyright from students". Other participants reported that the availability of appropriate policies would help to give people more confidence regarding ETD programmes. In particular, they indicated that appropriate policies should assure people that theses would be secured and copyright protected. These policies, as a result, would motivate and encourage people to participate in these programmes. One postgraduate student reported that:

> I think there must be some policies to protect and preserve our copyright. The existence of such policies will support and facilitate the publishing of theses and dissertations electronically on the internet. Such policies will give students more confidence and relief when they make their theses electronically available.

6.4.1.3. Funding

Analysis of the data reveals that the concerns regarding funding-related factors of the majority of the research participants are minor. The participants explained that their institutions had sufficient funds. One system administrator stated that "financial resources are available should we require anything extra for this project. Therefore, I do not anticipate any

issues with regard to the availability of funds". By contrast, just one participant indicated that financial difficulties would be expected if the university decided to adopt an ETD programme, and could affect its implementation. One postgraduate officer reported that "we do not really have money lying around waiting to be spent. In fact, we are short on funding. We have just announced a freeze on hiring for next year. Therefore, our resources are limited". However, one technician at the same institution indicated that financial resources were available at the institution. The postgraduate officer might have thought that ETD programmes would need considerable financial resources that the institution could not afford.

The majority of the research participants attributed significance to issues of funding in the successful adoption of ETD programmes. They explained that without sufficient funds, the university would not be able to provide all the required resources for ETD programmes. One system administrator reported that "the availability of sufficient funds would help us to provide all software and hardware required for the programme from the beginning and, as a result, it will be easier and faster to adopt the programme".

6.4.2. Technological infrastructure

Around two thirds of the research participants indicated that their institutions possessed the necessary basic technological infrastructure. On the other hand, only a select few participants (a postgraduate officer and four system managers) indicated that there was a need to update the existing infrastructure and purchase additional software and hardware. In general, the majority of the research participants highlighted the importance of the availability of the appropriate technological infrastructure. The following paragraphs analyse participants' perceptions with regard to the technological infrastructure.

Those who reported that their institutions had the basic required technological infrastructure explained that their institutions were already providing several electronic services and, thus, the technological infrastructure was already in place. Such infrastructure includes software, hardware, an internet connection and other networking services. One library manager stated that "we do not have any shortfall in the technological infrastructure required as we already provide many other electronic services".

Only a few participants, especially system administrators, indicated that there was a lack of appropriate technological infrastructure for ETD programmes. They emphasised that they

possessed the basic technological infrastructure. However, they believed that there was a need for more advanced software and hardware to accommodate ETD programmes. In particular, they acknowledged the need for additional storage facilities and more advanced scanning equipment. One system administrator stated that "I think we will need extra facilities such as extra storage space and more advanced scanners to convert theses from printed to electronic formats".

Although a few participants reported shortfalls in the availability of appropriate technological infrastructure, they pointed out that their institutions were in a position to provide the required technological infrastructure if required. One system administrator expressed that "the existing technological infrastructure is not sufficient. However, I am quite sure that the university will provide all that is required for this programme".

With regard to the importance of technological infrastructure, the majority of the research participants stressed the significance of the availability of appropriate technological infrastructure for ETD programmes. They indicated that without the appropriate technological infrastructure, the technological processes would not be conducted properly. This finding highlights the influence of the availability of the appropriate technological infrastructure on the technological processes (as highlighted in section 6.2). One system administrator stated that "this will greatly affect the adoption of this programme and may even completely derail plans for implementation due to incapacities resulting from the lack of proper software and hardware".

6.4.3. Quantity of theses and dissertations

Several participants, especially academic staff and library managers, expressed their belief that the current volume of theses was one of the reasons why ETD programmes had yet to be adopted at their universities. They indicated that the number of postgraduate students was very low compared to the number of undergraduate students and, thus, the number of theses and dissertations was likewise very small. The participants questioned believed that the university administration would be reluctant to invest in providing technologies to adopt ETD programmes given the small volume of theses and dissertations on record. They explained the reason for having a small collection of theses and stated that with postgraduate programmes beginning only recently, the number of postgraduate students and theses were as yet not at the extent sufficient to warrant the adoption of an ETD programme. One library manager

explained that "postgraduate studies are relatively new in the country and the university. The university started postgraduate programmes in the mid to late-1990s. Therefore, due to the low priority given to research programmes in the Gulf States, there was no strong desire for ETD programmes". Hence this issue can be categorised as a contextual factor that influenced participants' personal perceptions regarding the quantity of theses and dissertations.

6.4.4. Summary (Availability of resources)

In summary, the research participants highlighted the importance of the availability of required resources to adopt ETD programmes in the Gulf States. These resources include organisational infrastructure, technological infrastructure and the availability of theses and dissertations. These resources can be categorised as institutional factors that affected the personal perceptions of the research participants. The organisational infrastructure includes the availability of appropriate staff, appropriate policies and sufficient funding. The technological infrastructure includes all the software and hardware required to adopt ETD programmes. With regard to the organisational infrastructure, there was variation in perceptions in terms of the availability. There was availability of financial resources and qualified staff. However, there was a lack of appropriate policies and project champions. Thus, on the one hand, the availability of financial resources and qualified staff was seen as a possible enabler to the adoption and development of ETD programmes in the Gulf States, and on the other hand, the lack of appropriate policies and project champions was seen as a possible barrier to the adoption and development of ETD programmes in the Gulf States. With regard to the technological infrastructure, the majority of the research participants questioned believed that it was already in place due to the fact that their institutions were already providing several electronic services. Thus, the availability of the appropriate technological infrastructure was seen as a possible enabler to the adoption and development of ETD programmes in the Gulf States. Therefore, it can be safely concluded that the availability of resources is one of the main factors affecting, either positively or negatively, the adoption and development of ETD programmes in the Gulf States. The effect depends on the availability or absence of the required resources.

6.5. Persuasive influence

Section 6.3 showed that the interviewees had several concerns regarding ETD programmes. To counter these, they identified several persuasive factors that could help to alleviate these concerns and also could influence the attitudes of people regarding ETD programmes. These include the influence of other people on the research participants, the influence of academic supervisors on students' attitudes, the influence of promotional and advocacy activities on a university community and the influence of seeing other universities already adopting ETD programmes.

6.5.1. Peers' influence

Perceptions gathered from the research participants showed that the attitudes of the majority of the research participants would not be influenced by the opinions of others. The participants explained that they were already very much convinced of the importance of ETD programmes and, and such, would be unlikely to change their stance. Some further claimed that they were able to change the opinions of other individuals regarding these programmes. However, a minority of participants expressed some likelihood of their attitudes changing towards ETD programmes. Reference was given to the relative recentness of the ETD concept and their lack of knowledge concerning it. The influence of other individuals is discussed below.

As previously stated, the majority of the research participants indicated that they were already very much convinced of the idea of making theses and dissertations electronically available and, thus, would be unlikely to change their attitudes towards ETD programmes. One academic staff member reported that "I will never change my attitude because I am already very convinced of the importance of the programme". One postgraduate student also stated that "I am personally convinced of the great benefits of making theses and dissertations electronically available on the internet and therefore, my mind is made up".

A number of the research participants (postgraduate officer, academic staff) not only indicated that they would not change their own attitudes towards ETD programmes, they also expressed that they were in a position to convince other individuals of their merit. One academic staff member stated that "I've reached a stage whereby I can help convince others about the programme". One postgraduate officer, in addition, stated: "I do not think anyone

can influence my positive personal opinion about the idea of making theses electronically available. In contrast, I believe I can influence others by convincing them of the importance of this project".

A small number of the research participants (postgraduate officer, academic staff, postgraduate students) on the other hand, expressed the possibility of changing their attitudes towards ETD programmes based on the opinions of others and recommendations. Some explained that they have deficient knowledge concerning ETD programmes at the present time. They also expressed that they would be prepared to change their attitudes if others provided compelling evidence to do so. One academic stated that "if there are serious problems that I do not perceive at this moment, I may have to change my thinking". Another postgraduate officer also expressed that "I may indeed change my mind if others provide compelling evidence to do so".

6.5.2. Research supervisors' influence on students' attitudes

The research interviews focused on the relationship between academic supervisors and their postgraduate students in terms of participation in ETD programmes. Academic supervisors were asked whether or not they intended to advise their students to participate in ETD programmes. Postgraduate students were also asked if their attitudes towards ETD programmes would be influenced by their supervisors. Perceptions gathered from academic staff showed that the majority intended to advise their students to participate in ETD programmes. With regard to students' perceptions, the majority indicated that their attitude would not be influenced by their supervisors' advice. Nevertheless, a small number explained that they may change their attitudes in recognising the broader experience and knowledge of their supervisors regarding these programmes.

All but one of the academic supervisors questioned indicated that they intended to advise their postgraduate students to participate in ETD programmes and to make their theses electronically available. These perceptions reflect supervisors' appreciation of the benefits of these programmes. One academic staff member reported that "I will encourage my students to participate in this programme". On the other hand, only one academic staff member indicated that he might advise his students to impose access restrictions of some variety on their theses if deficiencies in appropriate copyright policies were evident. He explained: "I will advise my students to participate, but with access restrictions of some nature applied. I

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would not advise my students to agree to make their theses electronically available before being sure that their copyright is protected".

Analysis of postgraduate students' perceptions demonstrated that the attitudes of the majority would not be influenced by their supervisors owing to their conviction with respect to the importance of ETD programmes. Even though these students indicated that they would note to the points of view of their supervisors, they believed that their own positive attitudes towards ETD programmes would remain intact. One postgraduate student stated that "I will listen to my supervisor's point of view and in the end I will follow my own opinion as I am already very much convinced of the great benefits and importance of this programme". Several students further expressed that their supervisors had no role or authority over their decision to participate in ETD programmes. They also believed that the copyright of the theses belonged to students only and supervisors had no authority over theses. One student stated: "because the thesis is my own work and my supervisor is involved in an advisory capacity only, the copyright belongs exclusively to me and the researchers; supervisors have no claim to the thesis' copyright". In addition to these opinions, other students expressed confidence about their attitudes towards ETD programmes and indicated that they might be able to change the attitude of their supervisors towards ETD programmes. One postgraduate student claimed that "I do not believe that my supervisor will change my opinion regarding the programme. Rather, I will try to convince him of my viewpoint".

On the other hand, a small number of postgraduate students indicated that they may change their attitudes based on their supervisors' opinions and advice, especially if they provided evidence and convincing arguments. One postgraduate student reported that "if my supervisor provided evidence in support of his/her claims, I'd change my opinion".

6.5.3. Influence of promotional and advocacy activities

The interviews demonstrated that the research participants placed emphasis on promotional activities in the successful adoption of ETD programmes. The majority of the participants perceived that conducting appropriate promotional and advocacy activities would help to attract people to ETD programmes by making people aware of ETD programmes and their importance and benefits. In addition to this, several participants, postgraduate students and academic staff in particular, suggested that promotional activities should give people assurance that copyright is protected and preserved. Such awareness, as a result, would

encourage the university community to appreciate and support the adoption of these programmes. On the other hand, a minority of participants highlighted that promotional activities were not undertaken properly at their universities. The following sub-sections outline the influence of promotional and advocacy activities.

From the interviews conducted, the majority of the research participants suggested that promotional activities should inform people about ETD programmes and their importance and benefits. They thought that once people became aware of ETD programmes and their benefits, they would be more willing to support and participate in these. One library manager outlined this idea and stated that "I believe the implementation of promotional activities will have a positive influence on the programme's adoption. Such activities will create awareness amongst students and academic staff of the benefits of the programme and its importance". In addition, a small number of participants indicated that promotional activities would help to bring more administrative support to these programmes. They explained that by creating awareness amongst people at a higher level regarding these programmes and their benefits, administrators would be more willing to support their adoption. One postgraduate officer reported that "making people aware of the importance and benefits of ETD programmes would give the project wide support from administrators and other related persons". One library manager also reported that:

> Appreciation of the programme at administration level is the main enabler to the adoption of ETD programmes. It is essential that persons with the authority to make decisions in this regard appreciate the importance of the project. If such individuals are convinced of and appreciate the importance of the project, they will provide and offer all the financial support and hardware and software required, and establish all the necessary policies and legislation.

In addition, the majority of the academic staff and postgraduate students questioned indicated that promotional activities should encompass copyright issues and clarify how theses are protected and preserved. They also observed that once individuals are confident that copyright issues are managed appropriately, they would be encouraged to support and participate in these programmes. One student expressed that "promotional activities would give me greater confidence regarding the programme, especially if I knew that there would be protection of my copyright by the university". One academic staff member suggested that

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"one aim of promotional activities should be to convince people about ETD programmes and assure them that copyright is protected and preserved".

Nevertheless, a number of participants (postgraduate officer, academic staff) expressed concern about promotional activities at their universities. They indicated that such activities are either limited in scope or not available at all. One academic staff member expressed that "I wasn't aware of any promotional or advocacy activity concerning these issues". Such a lack of appropriate promotional activities would have a negative influence in terms of encouraging more people to support the adoption of ETD programmes. Additionally, the absence of promotional activities would result in a lack of awareness and appreciation with regard to the importance of ETD programmes, especially at the administration level. One academic staff member stated that "the lack of awareness on the part of university administrators concerning the importance of this project is the main barrier to the adoption of these programmes". Thus, based on these perceptions, it can be concluded that the lack of appropriate promotional activities would be considered as one of the main possible barriers to the adoption and development of ETD programmes in the Gulf States.

6.5.4. Influence of other universities

From the interviews conducted, library managers and postgraduate officers indicated that seeing other universities already adopting ETD programmes would motivate and encourage them to adopt these programmes themselves. They explained that seeing other universities adopting ETD programmes would give them the opportunity to benefit from their experience. In particular, they would be able to benefit from their experience in dealing with legal issues, such as copyright and plagiarism. As a result, participants thought that benefiting from others' experience would save much time and effort for their institutions. One library manager stated that "certainly, such institutions have already been through all of the associated adoption procedures and come to grips with the challenges faced and developed sufficient experience, which if they shared with us would indeed save us much time and effort".

6.5.5. Summary (Persuasive influence)

In summary, the research participants highlighted four persuasive factors that could alleviate concerns and also could influence the attitudes of people towards ETD programmes. For

example, conducting appropriate promotional activities would have a positive influence on the adoption of these programmes. However, a few participants indicated that there was a failure to conduct appropriate promotional activities at their institutions. Thus, the absence of appropriate promotional activities is considered as one of the possible barriers to the adoption and development of ETD programmes in the Gulf States.

Additionally, the research participants highlighted the benefit of seeing other universities already adopting ETD programmes. They considered the ability to learn from others' experience as an enabler to the adoption and development of these programmes. With regard to the influence of others on the research participants, the majority indicated that others would not be able to change their attitudes towards ETD programmes. This reflected strong motivation and appreciation of the benefits of ETD programmes. This finding aligns with the findings of the first section whereby all the research participants perceived several benefits of ETD programmes (section 6.1). Additionally, we have seen that academic advisors intend to advise their students to participate in ETD programmes and to make their theses available electronically. Thus, this also can be considered as a possible enabler to the adoption and development of ETD programmes in the Gulf States.

6.6. Summarisation of key findings from the interviews

Interviews with the research participants have revealed several possible enablers and barriers to the adoption and development of ETD programmes in the Gulf States. The major perceived possible enabler was the appreciation of the importance and the benefits of ETD programmes at individual, institutional, and contextual levels. All of the research participants questioned perceived personal and public (institutional and contextual) benefits with regard to ETD programmes. As a result of recognising and appreciating these benefits, the research participants were more willing and motivated to support the adoption of these programmes. In addition, they stated that they would be prepared to support the adoption of ETD programmes despite some concerns surrounding some legal issues, such as future publishing and plagiarism. Furthermore, appreciation of the benefits helped reinforce attitudes against conflicting influences from other parties. Such outcomes demonstrate the influence of appreciating these benefits on people's concerns regarding legal issues. Once people have a greater appreciation of the benefits, they are unlikely to change their attitudes if challenged by others. Similarly, if people harbour concerns regarding legal issues and the use of new

technologies, this would not deter such individuals from supporting the adoption of ETD programmes due to their appreciation of their benefits.

Another factor perceived as possibly enabling the adoption of ETD programmes is the ease associated with the technological processes required to adopt these programmes. For example, the security of online theses and dissertations was not perceived to be a difficult task. Universities usually provide several online services and, thus, always have good security systems. Only a select few participants reported potential difficulties when scanning dated paper theses. Nevertheless, they claimed that once the required facilities and resources are provided, the scanning process of paper theses would not be a problem. This again highlights the influence of the availability of the required resources (institutional factors) on the technological processes (personal perceptions). In terms of postgraduate students, these reported that they had the skills and confidence to handle the technological processes required to participate in ETD programmes. These students attested to the ease of the task of converting their theses into PDF files for submission on CD.

There were mixed reactions with regard to the availability of appropriate infrastructure and whether this factor was thought to influence positively or negatively the adoption of ETD programmes in the Gulf States. On the one hand, universities in the Gulf States reported having the basic required technological infrastructure. The research participants explained that their institutions already provided several electronic services that required appropriate technological infrastructure. They also stated that their institutions had the required staff in order to adopt and develop ETD programmes. Similarly with regard to financial resources, the research participants asserted that financial resources were available at their institutions. Thus, the availability of such resources was seen as possibly enabling the adoption of ETD programmes. On the other hand, the research participants indicated that deficiencies identified in the availability of other resources were a possible barrier to the adoption of these programmes. A lack of project champions and appropriate policies has been reported. Such policies include the submission of electronic copies of theses and copyright policies.

With regard to project champions, the research participants asserted that such a person would be able to promote ETD programmes within the university community and discuss all the associated legal issues with them and, as a result, motivate them to support and participate in these. They also indicated that a project champion would be able to discuss the idea of ETD programmes with the university administration and, as a result, would be able to bring more

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administrative and financial support and also foster the establishment of appropriate policies and legislation required to adopt these. These findings highlight the possible influence of the availability of a project champion on the appreciation of the benefits and importance of ETD programmes. They also highlight the influence of the availability of a project champion on people's concerns regarding legal issues.

With regard to the existence of appropriate policies, this factor was held to be highly beneficial by the research participants. For example, it was thought that the existence of appropriate policies would help in the collection of theses and dissertations in electronic format and this, in turn, would facilitate their electronic publication. It was also believed that the availability of appropriate policies would help to give people, especially students, more confidence about ETD programmes by giving assurances that thesis copyright would be protected. Therefore, the research participants expressed that the absence of appropriate policies would be considered as one of the main possible barriers to the adoption and development of ETD programmes in the Gulf States. However, the research participants indicated that the establishment of appropriate policies would not be a concern if there was willingness and motivation to adopt ETD programmes. This highlights the influence of the appreciation of the benefits on the decisions to adopt these programmes. From these findings, it can be seen that there is a relationship between the existence of appropriate policies and concerns surrounding legal issues.

Several participants indicated that the number of theses would be a possible barrier to the adoption of ETD programmes in the Gulf States. This issue emerged from the interview findings, which were not included in the preliminary framework. Members of this group explained that postgraduate programmes began only recently and the number of postgraduate students still remained small compared to western countries. Thus, it was not worth adopting ETD programmes with such a small collection of theses and dissertations.

Concerns regarding ETD programmes were identified to be strongly influencing the adoption and development of ETD programmes in the Gulf States. The concerns on most peoples' minds were issues surrounding plagiarism. This problem was held to be one of the main possible barriers to the adoption of ETD programmes, especially if appropriate policies had yet to be implemented. This again highlights the importance and the influence of the existence of appropriate policies on reducing concerns surrounding legal issues. Other legal concerns were not considered to be barriers to the adoption of these programmes. These

include obtaining copyright permission, copyright restrictions and future publishing. On the other hand, concerns surrounding the perceived quality of theses and dissertations were seen as one of the issues that might be a barrier to the adoption of ETD programmes. This issue emerged from the interview findings, which was not included in the preliminary framework. Members of this group explained that the poor quality of theses might be the reason that tempts some people, especially students, to hesitate from making these available publically on the internet. A number of students expressed that making their theses electronically available would make these more accessible and, thus, create avenues for their work to be criticised. Concerns regarding the quality of theses and dissertations were expressed due to the newness of the research programmes in the Gulf States. Therefore, the issue of thesis quality can be categorised as a contextual factor that existed in the Gulf States, which influenced the perceptions of those participants (more discussions about this in Chapter 8, section 8.3.4). Another issue of concerns was the issue of using uncertain new technologies. The research participants expressed little concerns about the use of new or uncertain technologies.

The research participants also identified factors that could have a favourable influence (Persuasive influence) on the attitudes of people towards ETD programmes. For example, promotional activities were said to raise awareness regarding ETD programmes and their benefits. Additionally, promotional activities would help to make clear how theses' copyright is protected. As a result of such activities, people would be motivated and more willing to support the adoption of ETD programmes and also would help to bring more administrative support to these. However, several participants indicated that there were no such activities at their institutions. Thus, the absence of these activities would be considered as one of the possible barriers to the adoption and development of ETD programmes in the Gulf States. Other possible influencing factors, such as the influence of other people, were expressed as further enablers to the adoption of these programmes. Academic advisors indicated their intention to advise their students to participate in ETD programmes and make their theses available electronically. Postgraduate students, on the other hand, felt that their attitudes towards ETD programmes would not be influenced by their supervisors, especially if the influence was negative. Interviewees in both groups explained that they were already very much convinced of the importance of ETD programmes. In addition, with regard to the influence of seeing other universities adopting ETD programmes, the interviewed participants

indicated that this would give them more motivation and willingness to do the same. These perceptions of the influence of these factors would be considered as possible enablers to the adoption and development of ETD programmes in the Gulf States.

No clear difference has been observed between the different groups of key informants in their perceptions regarding the possible factors affecting the adoption of ETD programmes. The only observable difference concerned the plagiarism issue. Plagiarism was mostly a concern to academic staff and postgraduate students. This might reflect their close contact with the copyright of theses and dissertations. Students write theses and supervisors guide students on their research. The research survey tested and explored further, in a larger sample, the possible differences in perceptions between the five groups of key informants (Chapter 7).

Based on the analysis of the interview findings, the preliminary framework was modified outlining the identified factors that have been understood as possibly influencing the adoption and development of ETD programmes in the Gulf States (Figure 6.1). In addition, a number of additional factors emerged that had not been outlined in the preliminary research framework presented in Chapter Four. These included concerns surrounding the perceived quality of theses and the quantity of theses and dissertations, which were perceived due to the newness of research programmes in the Gulf States. In addition, ETD programmes were perceived as increasing the currently limited availability of Arabic research on the internet. Moreover, as these states have strong economies, academic institutions were mostly equipped with the required technological infrastructure. The framework also highlights the influence of certain factors on other factors. These relationships between factors are discussed in Chapter Eight. The framework is presented below.

Figure 6.1: Framework of the factors influencing the adoption of ETD programmes based on the interview findings
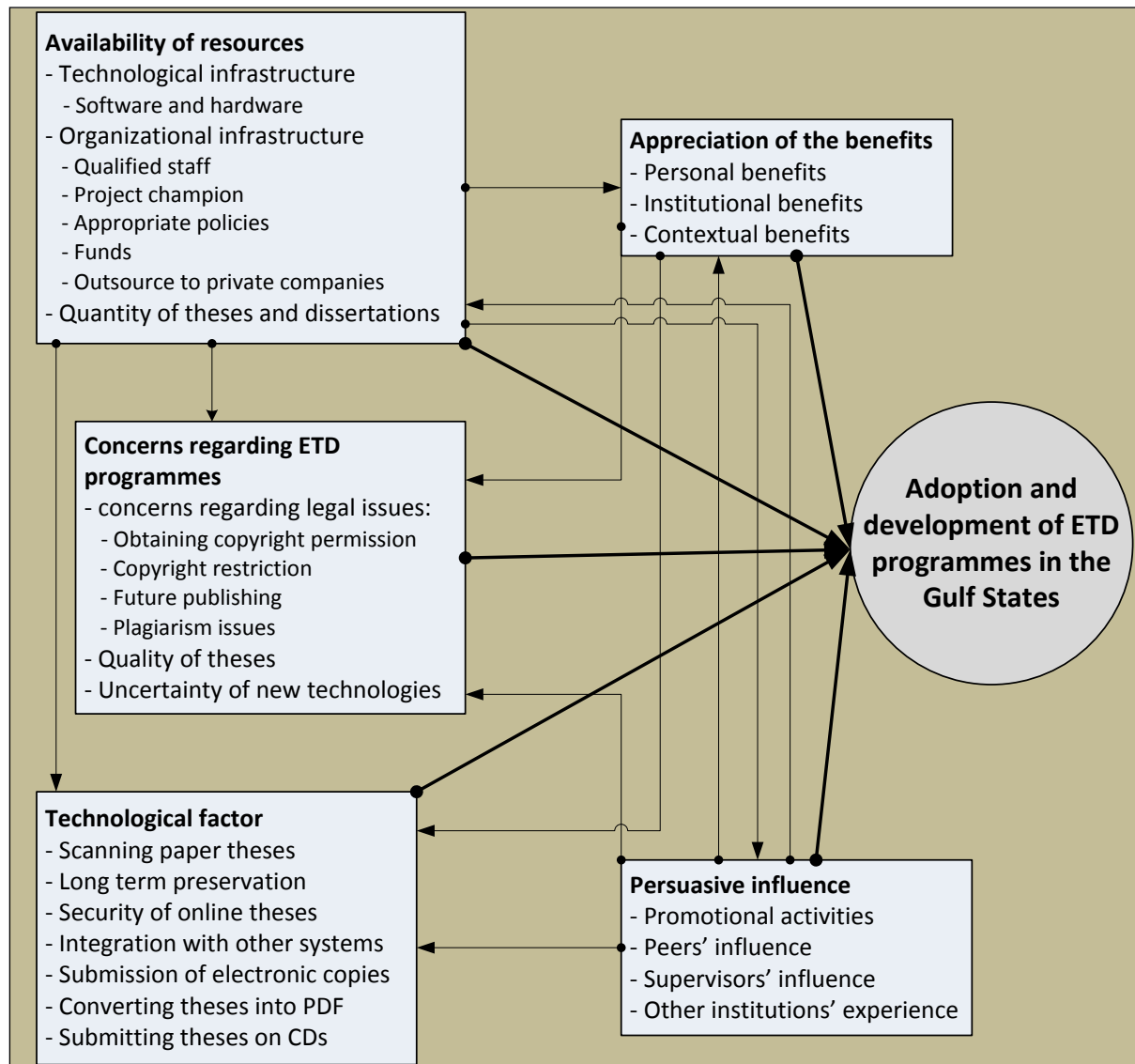
Note. ⬤➤ This means that this factor has an influence on the adoption of ETD programmes according to the interviewees.

⬤➤ This means interviewees perceived that this factor has an influence on the other factor.

Based on the findings from the interviews, a survey questionnaire was developed. The survey tested and explored, in a larger sample, the issues identified in the interviews. The results of the survey helped to ascertain whether these contradicted or confirmed the findings of the research interviews. The survey tested and explored further the possible differences in perceptions surrounding the identified issues between the five types of respondent. The following chapter analyses the survey findings.

CHAPTER SEVEN: ANALYSIS OF SURVEY FINDINGS

This chapter presents and analyses the findings of the online survey. The research survey tested and explored, in a larger sample, the issues identified in the research interviews. The survey results were used to ascertain whether the findings contradicted, confirmed, or complemented the findings of the research interviews. The survey also tested and explored further the possible differences in perceptions surrounding the identified issues between the five types of respondent.

A *One Way Anova* test was used to explore the possible differences in perceptions surrounding the identified issues between the five groups. Only seven questions were found to have a significant difference between groups out of 77 questions that were common to all groups (see Chapter 5, section 5.4.4.2 for elaboration on the significant value of *Anova* test). The difference between groups is highlighted within the relevant questions.

The details of this survey are presented in Chapter Five, including the purpose, scope, data collection method, and data analysis. Related materials including information sheet, consent forms, and questionnaire are available in Appendix B and C.

7.1. Respondent characteristics

The online survey targeted the same five groups of respondents as in the interviews: technicians, librarians, postgraduate officers, academic staff, and postgraduate students.

Table 7.1: The survey respondents

Groups	N	%
Technicians	40	12.9
Librarians	43	13.9
Postgraduate officers	39	12.6
Academic staff	60	19.4
Postgraduate students	127	41.1
Total	309	100.0

Table 7.1 shows that there were 309 respondents to the online survey (question A) in total. The number of responses reflects the distribution of the population in universities. A larger number of postgraduate students were included in the survey than academic staff members

who teach and supervise master's and PhD students. Because of the method applied in distributing the questionnaires, the actual number of individuals receiving the survey was not known. Therefore, calculating the response rate was not possible. However, the number of responses from each group met the minimum target for the study of at least 30 respondents from each group (as discussed in Chapter 5, section 5.4.3).

The following sections present the survey findings. The findings are presented in tables and figures. Percentages are used in all figures.

7.2. Appreciation of the benefits

Based on the interview findings, the awareness and appreciation of the benefits of ETD programmes was seen as one of the main possible enablers to the adoption and development of ETD programmes in the Gulf States. Analyses of the responses to questions related to the benefits of ETD programmes are presented in the following.

(**question C.1**): Before enquiring as to the respondents' perceptions regarding the benefits, they were first asked to indicate their appreciation of the idea of ETD programmes. Figure 7.1 illustrates the appreciation of the idea of making theses and dissertations electronically available. More than two thirds of the research participants (69.1% n=206 out of 298 respondents) agreed that theses should be made freely available online (includes the "agree" and "strongly agree" categories). However, 20.5% (n=61) of the respondents did not agree with this idea.

Figure 7.1: Users' appreciation of the idea of ETD programmes
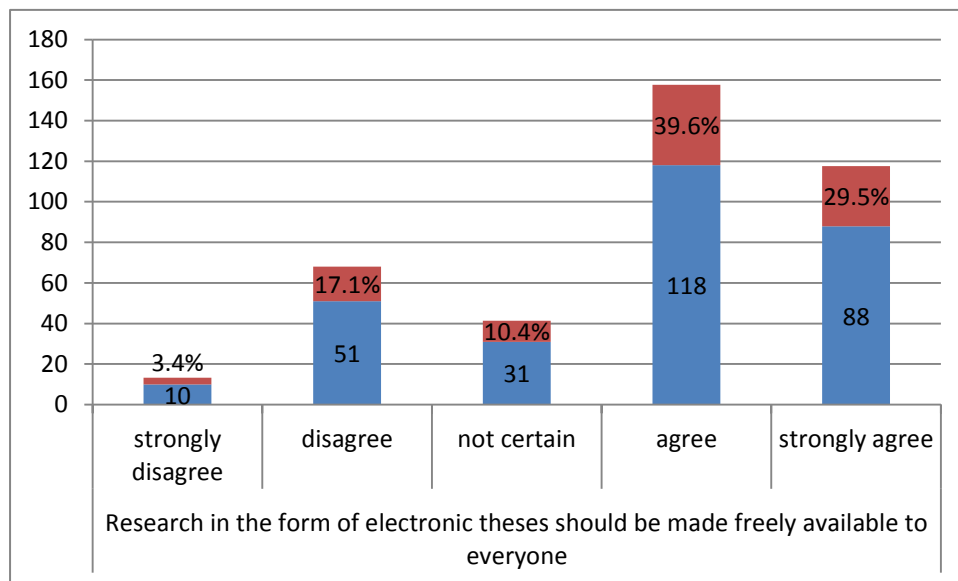
One of the benefits that several participants identified in the interviews was that making theses and dissertations electronically available would facilitate the discovery of plagiarism. As a result, people were said to fear plagiarising online documents as they were aware that they would be easily caught (Chapter 6, section 6.1.5). Responses to the online survey illustrated that more than two thirds of the respondents (68.5% n=204 out of 298 respondents) agreed that making theses and dissertations electronically available would facilitate the discovery of plagiarism (question C.9), while 9.1% (n=27) of respondents did not agree with this statement. Similarly, 62.4% (n=186 out of 298) of respondents agreed that the ease of discovering plagiarism when theses are electronically available would eliminate the possibility of plagiarism (Figure 7.2). On the other hand, 11.1% (n=33) of the respondents did not agree that this would eliminate the possibility of plagiarism (question C.10).

Figure 7.2: Users' appreciation of the benefit of eliminating plagiarism

Legend:
- Discovering plagiarism is easier when theses are electronically available
- The ease of discovering illegal copying when theses are electronically available would eliminate the possibility of plagiarism
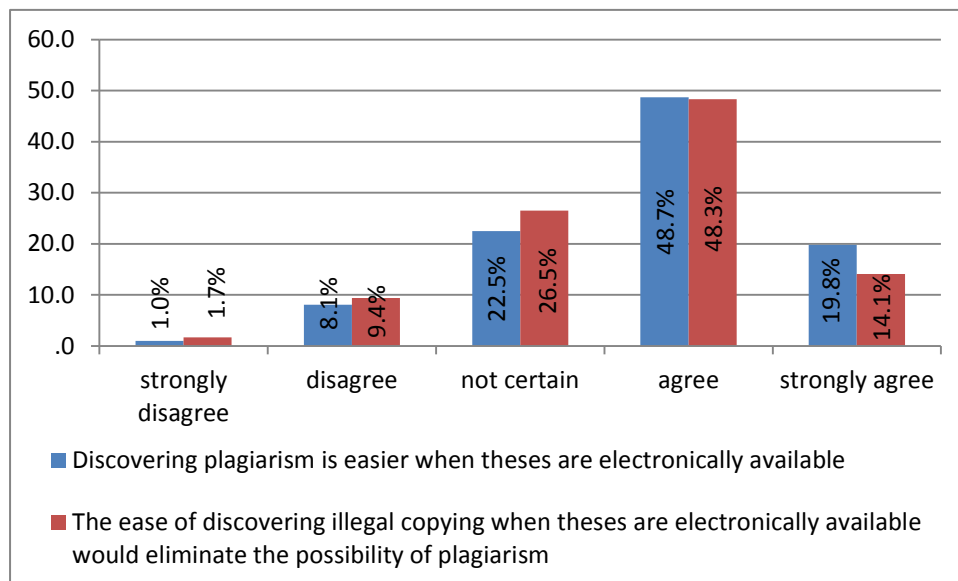
To highlight the influence of the benefits of ETD programmes on respondents' concerns about plagiarism, the research participants were asked whether they agree with the following statement "*The benefits of ETD programmes more than compensate for concerns surrounding plagiarism*" (question C.11). The results illustrate that about two thirds of respondents (63.7% n=190 out of 298 respondents) agreed that the benefits of ETD programmes do indeed outweigh concerns about plagiarism issues (Figure 7.3). About 7.0% (n=21) did not agree with this statement.

Figure 7.3: Influence of perceived benefits on concerns surrounding plagiarism

The benefits of ETD programmes override the concern about the plagiarism issue
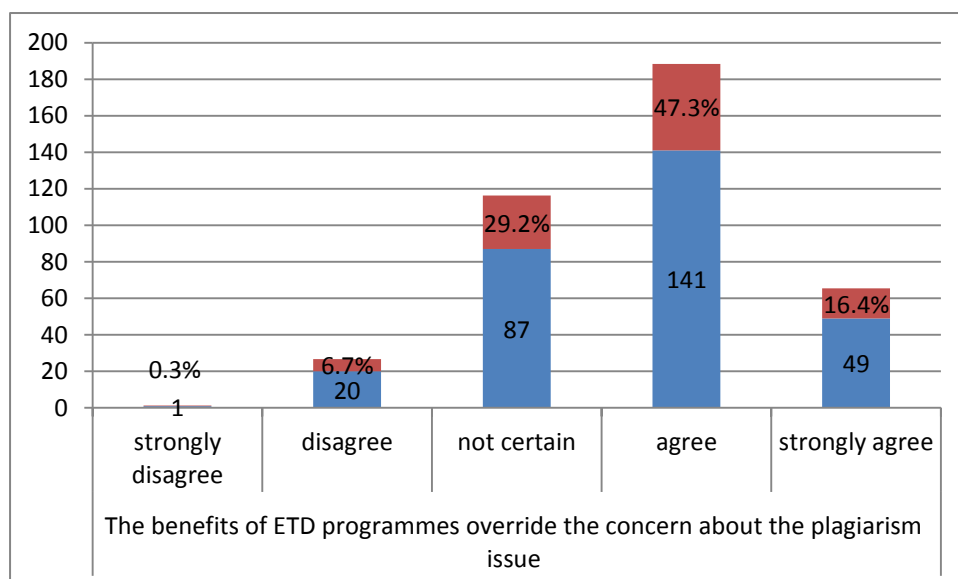
To summarise the influence of the benefits of ETD programmes on their adoption, respondents were asked to indicate the extent of the positive influence of the following statement on the adoption of ETD programmes "*People's appreciation of the various benefits of ETD programmes*" (question K.1). Table 7.2 illustrates that the majority of the respondents (79.4%, n=197) believed the appreciation of the benefits of ETD programmes would have a strong or very strong positive influence on the adoption of these programmes. Thus, the appreciation of the benefits was considered as one of the possible enablers to the adoption of these programmes. Only 6.8% of respondents believed that the appreciation of the benefits of ETD programmes would have a weak or no influence on the adoption of these programmes.

Table 7.2: Influence of perceived benefits on the adoption of ETD programmes

People's appreciation of the various benefits of ETD programmes					
no influence at all	weak influence	not certain	strong influence	very strong influence	Total
2 (0.8%)	15 (6.0%)	34 (13.7%)	153 (61.7%)	44 (17.7%)	284

7.2.1. Summary (Appreciation of the benefits)

As in the interview findings, the survey results show that there was much appreciation of the benefits of ETD programmes. In addition, the majority of the respondents agreed that making theses and dissertations electronically available would facilitate the discovery of plagiarism. Almost the same proportion of respondents agreed that making theses electronically available would eliminate the possibility of plagiarism because plagiarism would be easily discovered when theses are electronically available on the internet (Figure 7.2). Moreover, the majority of respondents further agreed that their concerns regarding plagiarism would be small given the numerous benefits offered by ETD programmes (Figure 7.3). This finding, in particular, emphasises the possible influence of the appreciation of benefits on concerns surrounding plagiarism. Once participants have come to greatly appreciate the benefits of ETD programmes, their concern about plagiarism issues becomes less important. In general, the respondents believed that appreciation of the benefits could be one of the main possible enablers to the adoption and development of ETD programmes in the Gulf States (Table 7.2). Thus, these results complement the interview findings (as outlined in Chapter 6, section 6.1).

7.3. Technological factor

The interview findings elicited the perceptions of the participants about the technological processes required in the adoption and development of ETD programmes. In general, the interview findings showed that participants did not express much concern about the technological processes, especially if the required technological infrastructure was provided. The following sub-sections outline the responses to questions related to the technological processes.

7.3.1. The technological processes

As highlighted in Chapter Six, the interview findings identified several technological processes that need to be considered when adopting ETD programmes. These include the scanning of paper theses, long-term preservation, security of online theses and making ETD programmes compliant with other university systems.

Figure 7.4 shows that more than two thirds of respondents (72.5% n=132 respondents out of 182; librarians, technicians, academic staff, and postgraduate officers) believed that their university could easily manage the technological processes required to adopt ETD programmes (question B.1). Only 7.1% (n=13) of respondents did not agree with this statement.

Figure 7.4: General attitudes towards the ease of managing technological processes
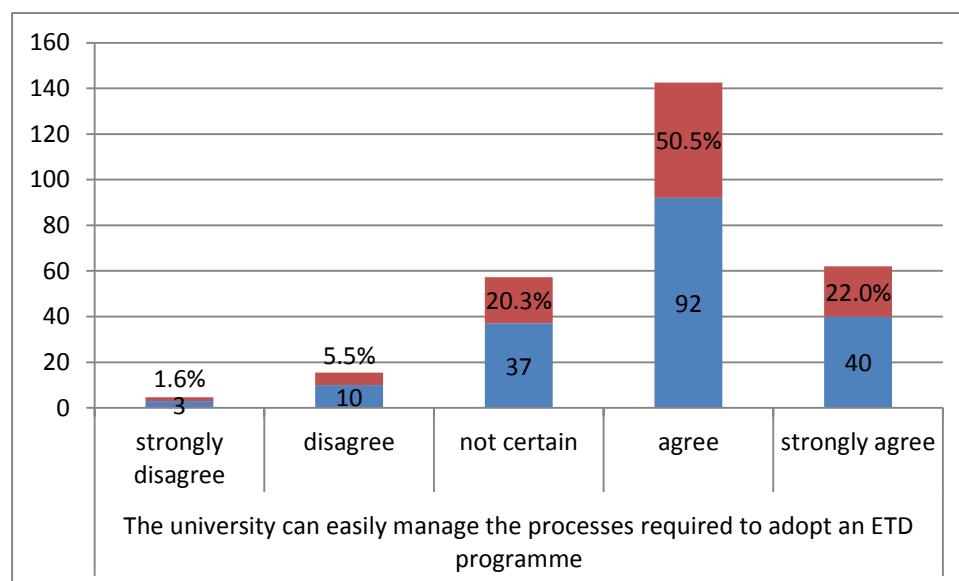
Conducting an analysis of variance test (*One Way Anova*) indicates that there was a significant difference between groups' perceptions about this question (Sig= 0.004). Figure 7.5 shows that technicians and academic staff expressed more disagreement (12.5% n=5, 11.7% n=7 respectively) with the statement *"the university can easily manage the technological processes required to adopt ETD programmes"* than librarians (0.0%) and postgraduate officers (2.6% n=1).

Figure 7.5: Difference in groups' perceptions about general attitudes towards the ease of managing technological processes
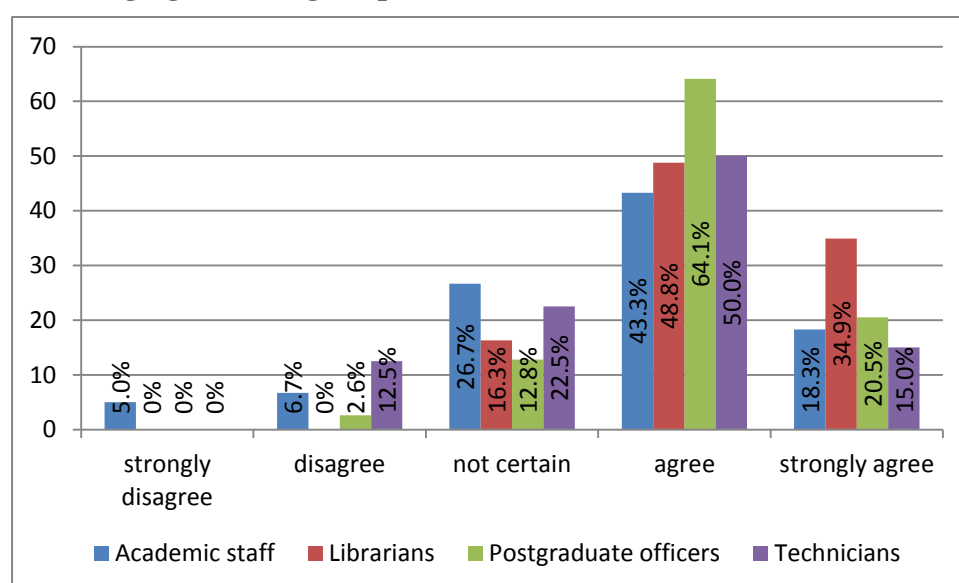
Respondents' perceptions about the ease of the technological processes were also supported by the following results of other questions related to some of the technological processes.

Participants were asked to indicate the level of expected complexity of the technological processes when the appropriate technological infrastructure is available (question E.1). About three quarters of respondents (76.0% n=117 out of 154 respondents; librarians, technicians, academic staff, and postgraduate officers) did not perceive complexity or perceived only slight complexity in the technological process when the necessary technological infrastructure is in place (Figure 7.6). Only 5.2% (n=8) of the respondents thought that there would be considerable complexity in the technological processes even though the appropriate infrastructure is in place.

Similarly, the availability of theses in electronic format was seen as a potential facilitator of the technological processes (question E.2). About 76.6% (n=118 out of 154) of the respondents (librarians, technicians, academic staff, and postgraduate officers) believed that

the availability of theses in electronic format would make the technological processes much easier (Figure 7.6). The same figure also illustrates that about two thirds of the technicians questioned (66.6% n=24 out of 36) believed that there would not be much complexity when trying to make the ETD programme compliant with other university systems (question E.3). On the other hand, about 11.1% (n=4) of the technicians questioned thought that there would be considerable complexity in this process.

Figure 7.6: The complexity of technological processes in the following circumstances
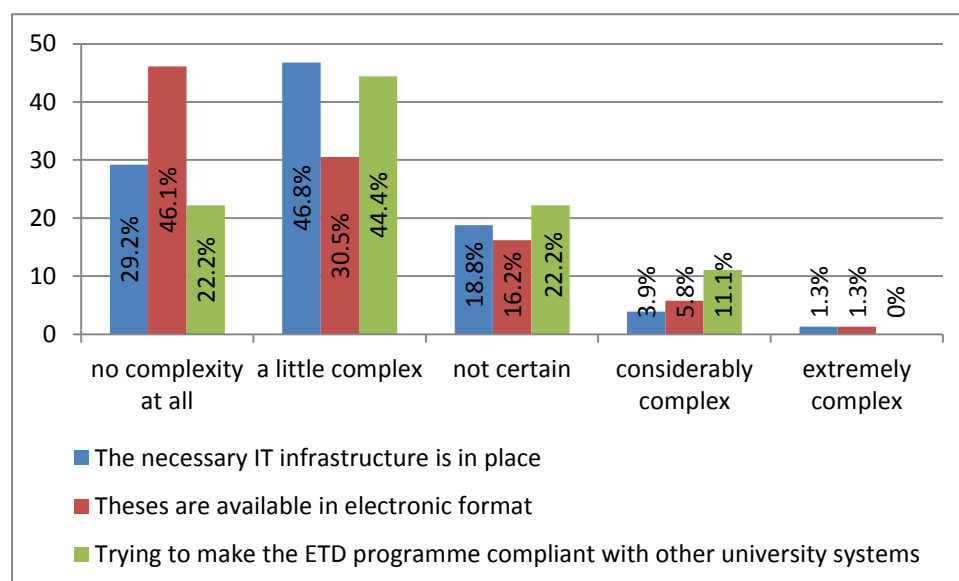
7.3.1.1. Scanning printed theses

Technicians and librarians were asked four questions about the process of scanning printed theses. Table 7.3 shows that about two thirds of respondents (63.9%) did not perceive much complexity in the process of scanning paper theses (question E.4). On the other hand, about 22.3% of the respondents questioned believed that the process would be considerably or extremely complex. Table 7.4 and Table 7.5 explain why these respondents believed that considerable complexity would be experienced in the process of scanning printed theses.

Table 7.3: The complexity of the process of scanning printed theses

The process of scanning printed theses					
no complexity at all	a little complex	not certain	considerably complex	extremely complex	total
18 (25.0%)	28 (38.9%)	10 (13.9%)	13 (18.1%)	3 (4.2%)	72

Table 7.4 shows that 65.0% of the respondents questioned believed that making scanned theses in-text searchable would be easier than producing them as images only. However, 18.1% of respondents did not agree with this statement (question B.4). They thought that making scanned theses in-text searchable would be much more difficult than producing these in image format only.

Table 7.4: The complexity of making scanned theses in-text searchable

Making scanned theses in-text searchable is easier than producing these in image format only					
strongly disagree	disagree	not certain	agree	strongly agree	total
3 (3.6%)	12 (14.5%)	14 (16.9%)	28 (33.7%)	26 (31.3%)	83

Table 7.5 shows that about one third of the respondents (33.7%) believed that scanning Arabic script would be more difficult than scanning Latin script (question B.5). Another result from this question is that less than half of the respondents (43.4%, n=36) answered "not certain" to this issue. This might be due to the fact that the respondents have not had the opportunity to scan both Arabic and scripts in order to compare the degrees of difficulty in this respect. On the other hand, 22.9% of the respondents indicated that scanning Arabic script would not be more difficult than scanning script.

Table 7.5: The difficulty of scanning Arabic script

Scanning Arabic script is more difficult than scanning script					
strongly disagree	disagree	not certain	agree	strongly agree	total
6 (7.2%)	13 (15.7%)	36 (43.4%)	19 (22.9%)	9 (10.8%)	83

Question B.3: Figure 7.7 shows that the majority of the respondents questioned (94.0%, n=78 out of 80) thought that new scanning technologies would improve the scanning of printed theses. This finding highlights the influence of the availability of an appropriate technological infrastructure in performing the technological processes. The availability of a suitable, advanced technological infrastructure would facilitate the performance of the technological processes, especially the scanning process.

Figure 7.7: The influence of new scanning technologies

New scanning technologies improve the scanning of printed theses
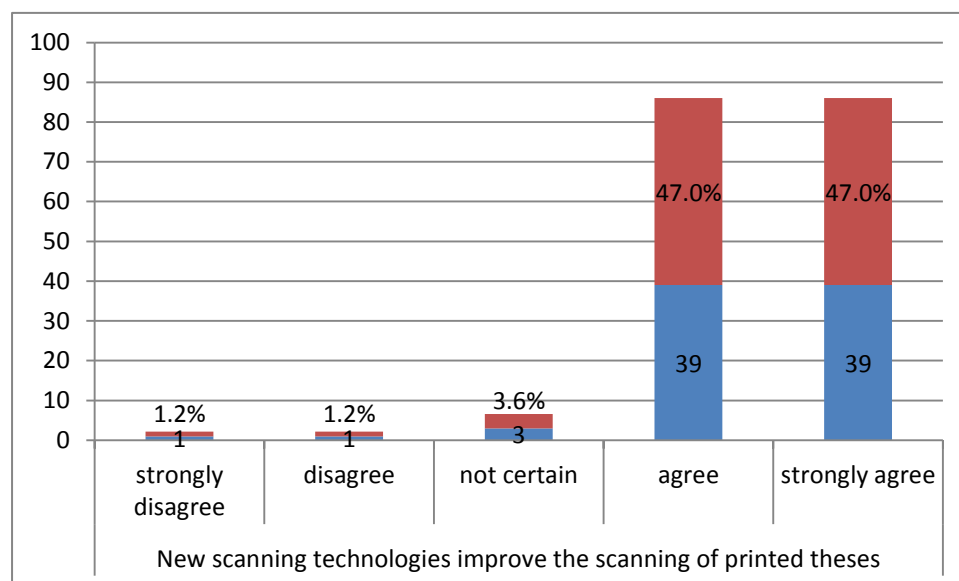
7.3.1.2. Security of electronic theses and dissertations

Technicians were asked three questions about the security of electronic theses. Table 7.6 illustrates that nearly one third of the technicians (30.0%) questioned agreed that the security level of their institutions' systems for safeguarding the use of and access to electronic theses was adequate (question B.8). On the other hand, 17.5% of respondents thought that the security level of their institutions' systems was inadequate. It is also worth mentioning that more than half of the technicians questioned (52.5%, n=21) answered "not certain" to this issue. This might be due to a lack of knowledge on the part of these respondents regarding this issue.

Table 7.6: The adequacy of system security

The security level of my university's system for safeguarding the use of and access to electronic theses is adequate					
strongly disagree	disagree	not certain	agree	strongly agree	total
2 (5.0%)	5 (12.5%)	21 (52.5)	10 (25.0%)	2 (5.0%)	40

Figure 7.8 shows that more than half of the technicians (50.0% n=18 out of 36) questioned thought that the level of complexity in the process required to ensure the security of electronic theses would be minimal (question E.5). On the other hand, about one third of the technicians (30.5% n=11) surveyed thought that the level of complexity in the security process would be high.

Figure 7.8: Complexity in the process of safeguarding electronic theses
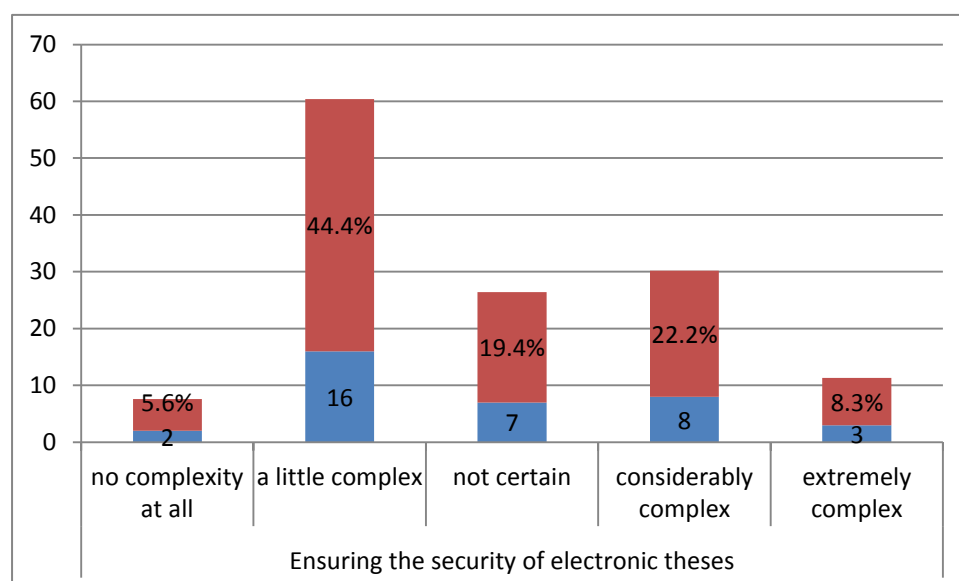
However, when the technicians were questioned as to the importance of an appropriate security policy, almost all respondents (95.0%, n=38) indicated that there was a need to establish an appropriate security policy and procedures in order to ensure the security of electronic theses and dissertations (Table 7.7, question B.7). This finding also highlights the expected influence of the existence of appropriate policies on the security process of online theses.

Table 7.7: The influence of the existence of policy-based security procedures

Policy-based security procedures should be available to ensure the security of processing electronic theses					
strongly disagree	disagree	not certain	agree	strongly agree	total
0	0	2 (5.0%)	20 (50.0%)	18 (45.0%)	40

7.3.1.3. Long-term preservation

Three questions about the long-term preservation of electronic theses were presented to technicians only. Less than half of the technicians (40.0%) questioned thought that migrating electronic theses to other media would be an easy process (question B.9). Table 7.8 also shows that 40.0% (n=16) of the technicians surveyed indicated that they were "not certain" about this issue. This might be due to the fact that these technicians in particular possessed little knowledge regarding the migration process of electronic theses. On the other hand, less

159

than one quarter (20.0%) of the technicians surveyed indicated that there would be difficulty in the process of migrating electronic theses to another medium.

Table 7.8: Migrating electronic theses

	For preservation purposes, it is easy to migrate electronic theses to another medium				
strongly disagree	disagree	not certain	agree	strongly agree	total
2 (5.0%)	6 (15.0%)	16 (40.0%)	12 (30.0%)	4 (10.0%)	40

It can also be observed from Table 7.9 that the majority of respondents (87.5%) agreed that preserving electronic theses would be easier than preserving paper theses (question B.10). This finding shows that participants perceived the long-term preservation of electronic theses to be easier compared to the long-term preservation of paper theses. This finding was also supported by the result of the following question (Figure 7.9, question E.6).

Table 7.9: Preservation of electronic theses compared to paper theses

The long-term preservation of electronic theses is easier than the long-term preservation of printed theses					
strongly disagree	disagree	not certain	agree	strongly agree	total
1 (2.5%)	0	4 (10.0%)	22 (55.0%)	13 (32.5%)	40

Figure 7.9 indicates that a high proportion of technicians (75.0% n=27 out of 36 respondents) perceived no or little complexity in the process of preserving electronic theses (question E.6) over the long term. Only 8.4% (n=3) of respondents perceived the process to be considerably or extremely complex.

Figure 7.9: Long-term preservation of electronic theses
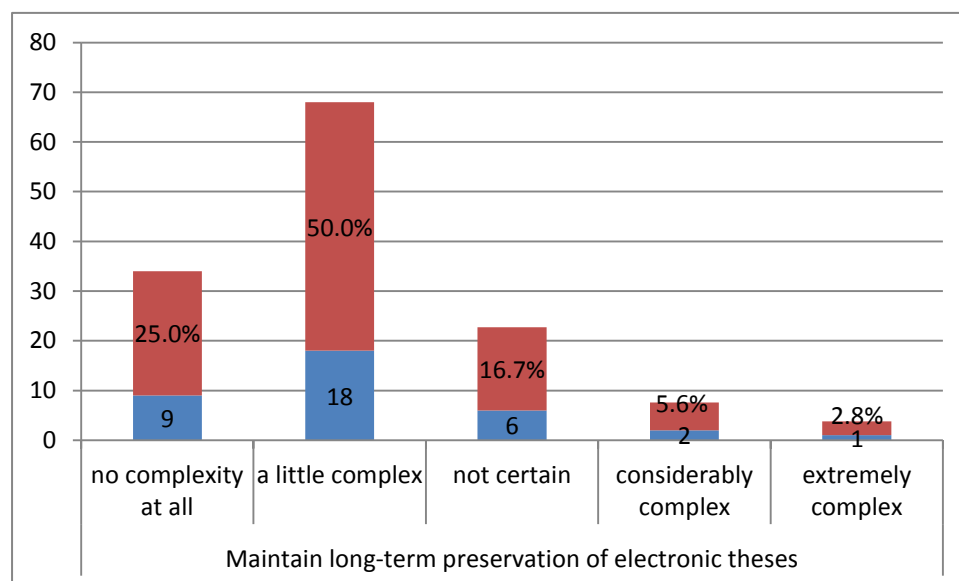
7.3.1.4. Time expenditure

One of the findings identified in the research interviews was that the technological processes required to adopt ETD programmes would be time consuming. The survey findings also revealed that roughly half of the respondents questioned (technicians, librarians, academic staff, and postgraduate officers) indicated that the technological processes would be time consuming (Figure 7.10, question B.1 and question B.6). About half of the respondents questioned (49.4% n=90 out of 182) agreed that the process of scanning printed theses would be time consuming (question B.6). Similarly, 40.7% (n=74 out of 182) of the respondents indicated that the technological processes required to adopt ETD programmes would be time consuming (question B.1). On the other hand, less than half of the respondents (35.7% n=65) thought that the technological processes would not be time consuming.

Figure 7.10: Time expenditure of the technological processes

Legend:
- ■ The process required to adopt an ETD programme is very time consuming
- ■ The process of scanning printed theses is very time consuming
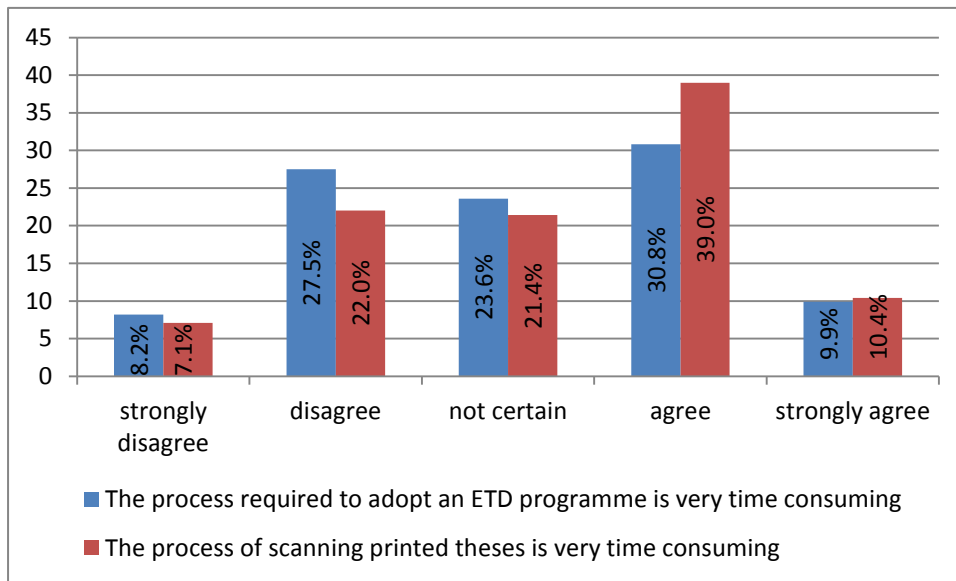
7.3.1.5. Student perceptions

Postgraduate students were asked two separate questions about some of the technological processes, such as the process of converting their theses into PDF and submitting their theses on CDs. It can be seen from Figure 7.11 that the majority of students perceived no or little complexity in some of the processes required to participate in ETD programmes. For example, 72.4% (n=76 out of 105) of the students surveyed thought that the act of converting their theses to PDF would be an easy process (question E.9). Similarly, 74.2% (n=78 out of 105) of respondents thought that the process of submitting their theses on CDs would not be a difficult task (question E.10).

Figure 7.11: Student perceptions of the complexity of the technological processes in the following circumstances
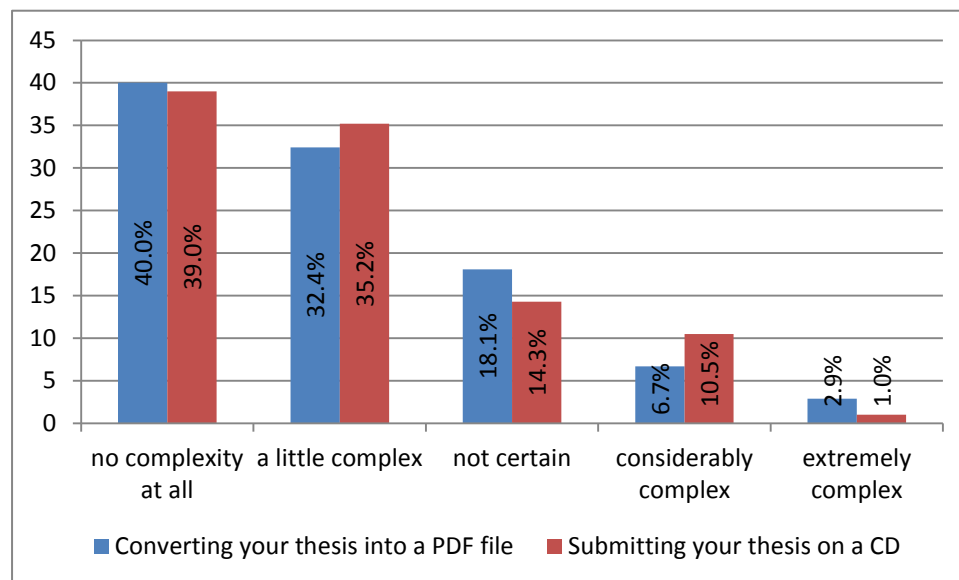
7.3.2. Summary (Technological factor)

The survey findings were generally consistent with the interview findings with regard to the expected complexity of the technological processes. An overview of the survey findings concerned with technological processes indicated that respondents perceived less complexity in these. The responses also indicated that the technological processes were not perceived to be negatively influencing the adoption of ETD programmes in the Gulf States. Like the interview findings, the majority of the survey respondents thought that their institutions could easily manage the technological processes required to adopt ETD programmes (Figure 7.4). However, a few technicians and, to a lesser degree, academic staff were less supportive of this perception (Figure 7.5).

The participants also emphasised the influence of the availability of the appropriate technological and organisational infrastructure on the difficulty of the technological processes. The majority of respondents believed that the technological processes could be performed much more easily if the appropriate technological infrastructure was in place and theses were available in electronic format (Figure 7.6). Even though less than a quarter of the technicians and librarians thought that the scanning process would be complex (Table 7.3), especially when theses are required to be in-text searchable (Table 7.4), the majority (94.0%) believed that the availability of new scanning technologies would facilitate and improve the

scanning process of theses and dissertations (Figure 7.7). Another example shows the expected influence of the existence of appropriate policies on concerns surrounding the issue of security. Even though around one quarter of the technicians expressed concern about the security level of the university system and indicated that ensuring the security of online theses would be very complex (Table 7.6 and Figure 7.8), almost all of the respondents pointed out that the availability of appropriate security policies and procedures would facilitate providing security to online theses and dissertations (Table 7.7).

Other technological processes, such as those required for long-term preservation and making ETD programmes compliant with other university systems were not perceived as likely to be highly complex (Figure 7.6 and Figure 7.9). Even though around 20.0% of the technicians questioned believed that it would not be an easy process to migrate electronic theses to other media (Table 7.8), the majority (75.0%) thought that the long-term preservation of electronic theses would not be a highly complex undertaking (Figure 7.9). The majority of the technicians indicated that the long-term preservation of electronic theses would be much easier than the long-term preservation of paper theses (Table 7.9).

The main perceived barrier was the issue of time expenditure. About half of the participants believed that the technological processes would be time consuming, especially the scanning process (Figure 7.10). This finding also corroborated the findings of the interviews.

From the students' perspective, the majority believed that the technological processes would be straightforward. They indicated that the processes of converting their theses into PDF format and submitting these on CDs would not be highly complex (Figure 7.11).

In summary, the overall perception about the technological processes was that they would not be a strong barrier to the adoption and development of ETD programmes in the Gulf States, especially if the appropriate technological infrastructure was available and the appropriate policies were established.

7.4. Concerns regarding ETD programmes

The interview findings indicated that concerns regarding ETD programmes would have a major impact on the adoption and development of ETD programmes in the Gulf States. One of the main issues highlighted in the interviews were concerns regarding legal issues. Other issues included concerns regarding the quality of theses and dissertations and concerns

regarding the use of unfamiliar technologies. The following sub-sections outline the survey responses to questions related to these concerns and issues.

7.4.1. Concerns regarding legal issues

Concerns surrounding legal aspects include concerns relating to copyright, future publishing and plagiarism issues. Copyright issues also encompass other considerations, such as obtaining copyright permission from students, copyright restrictions from commercial journals, and future publishing. The following sub-sections outline these issues according to the perceptions of the survey participants.

7.4.1.1. Copyright issues

As regards students' perceptions, the majority (96.1%) agreed that protection of their copyright by the university would give them greater confidence to participate in ETD programmes (Table 7.10; question C.3).

Table 7.10: The influence of copyright protection on students' participation

Protecting my copyright by the university will give me more confidence to participate in this programme					
strongly disagree	disagree	not certain	agree	strongly agree	Total
0	2 (1.6%)	3 (2.4%)	32 (25.2%)	90 (70.9%)	127

Participants were also asked about the issue of obtaining copyright agreement before making theses and dissertations electronically available. More than half of the respondents, including postgraduate students (58.4% n=174 out of 298), stated that the supervisors' agreement would be essential before making their students' theses electronically available, while less than a third (31.6% n=94) did not agree with this statement (Figure 7.12; question C.2). In a related question, 59.0% (n=101 out of 171) of the respondents (technicians, librarians, academic staff, and postgraduate officers) did not agree with the statement "*the university does not* have *to get prior agreement from students when making their theses electronically available*", while 26.3% (n=45) agreed with this statement (question C.4).

Figure 7.12: Obtaining copyright agreement from supervisors before making theses electronically available
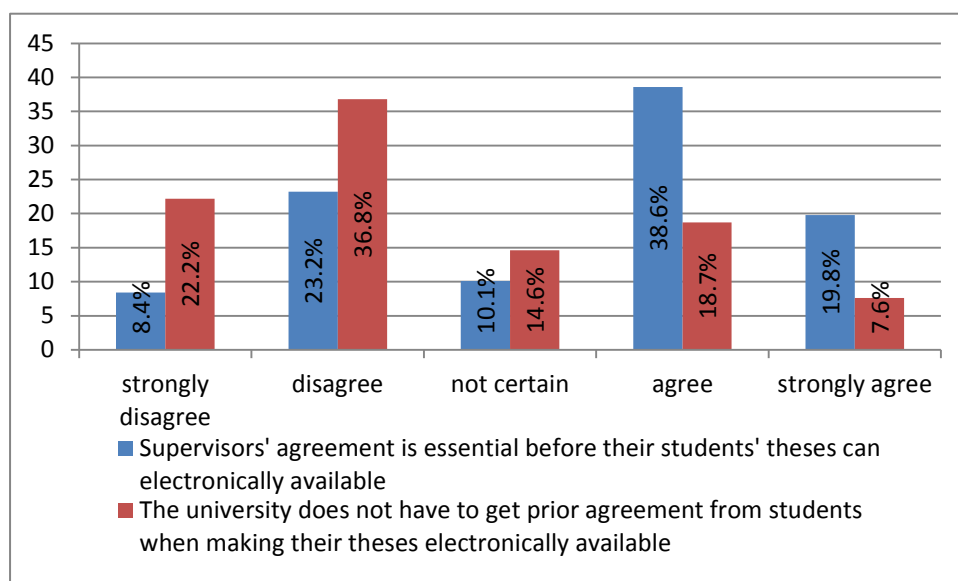
Conducting an analysis of variance test (One Way Anova) indicates that groups varied in their response to the question about the agreement of supervisors prior to making their students' theses electronically available (Sig= 0.001). Figure 7.13 shows that postgraduate officers were less supportive (32.4% n=12 out of 37) of the idea that the university should have the supervisors' agreement before making their students' theses electronically available compared to other groups (question C.2).

Figure 7.13: Differences in groups' perceptions about obtaining copyright agreement
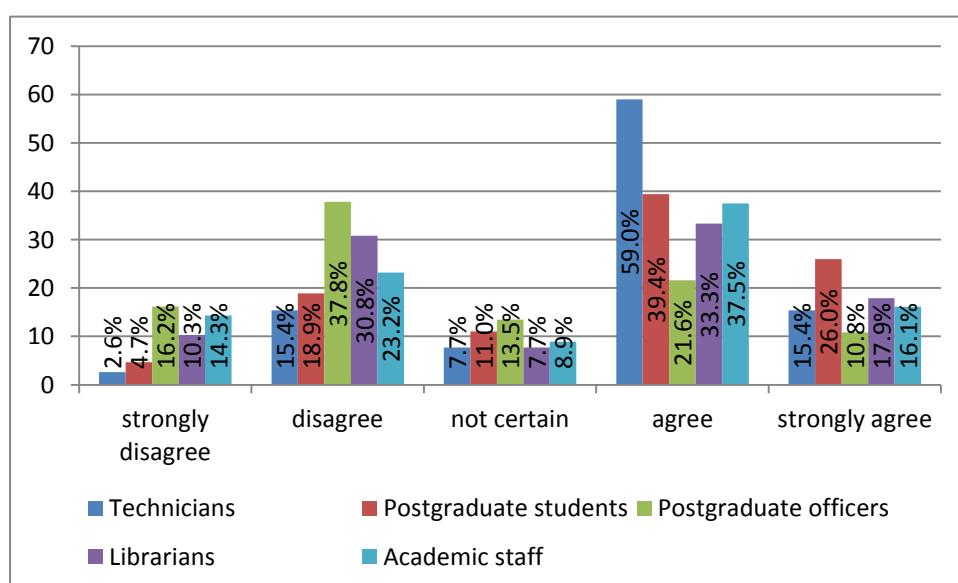
However, in terms of obtaining copyright agreement from students, perceptions varied concerning current and past students. With regard to obtaining copyright permission from current students (question E.7), 68.2% (n=105 out of 154) of respondents (technicians, librarians, academic staff, and postgraduate officers) stated that it would not be a complex process (Figure 7.14). However, 40.2% (n=62 out of 154) of the respondents stated that it would be a complex process to retrospectively obtain copyright permission from past students who submitted their theses in the past (question E.8).

Figure 7.14: The complexity of obtaining students' permission to make their theses electronically available
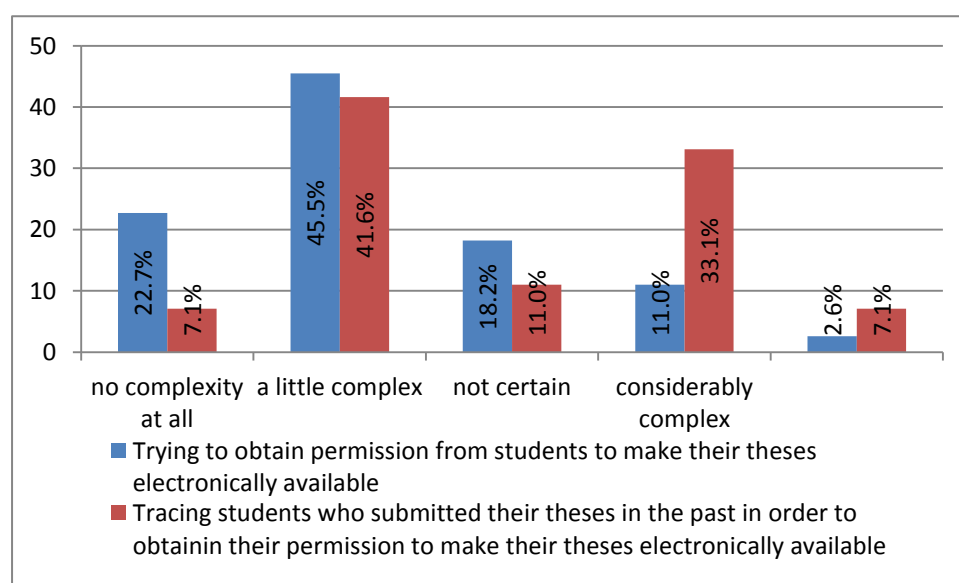
Table 7.11 shows variation in perceptions about the issue of making theses electronically available without gaining prior permission from students. About 39.0% of the respondents (technicians, librarians, academic staff, and postgraduate officers) stated that this issue either would not concern them at all or is of little concern to them, while 45.4% of respondents stated that it would concern them a great deal (question G.4).

Table 7.11: Concern surrounding the electronic publication of theses without copyright permission

Electronic publication of theses without obtaining prior permission from students					
no concern at all	a little concern	not certain	considerable concern	extreme concern	total
24 (15.6%)	36 (23.4%)	24 (15.6%)	47 (30.5%)	23 (14.9%)	154

7.4.1.2. Plagiarism issues

Plagiarism issues were significantly highlighted in the interview findings. The survey respondents were also asked four questions about plagiarism issues. Figure 7.15 shows that more than half of the respondents (54.7% n=163 out of 298) agreed with the statement "*theses are more vulnerable to plagiarism when they are electronically available*", while 26.5% (n=79) did not agree with this statement (question C.6). However, almost two thirds of the participants (63.1% n=188 out of 298) indicated that printed documents were as vulnerable to palagiarism as electronic documents, while 23.2% (n=69) of respondents did not agree with this statement (question C.7).

Figure 7.15: Plagiarism issues and making theses electronically available
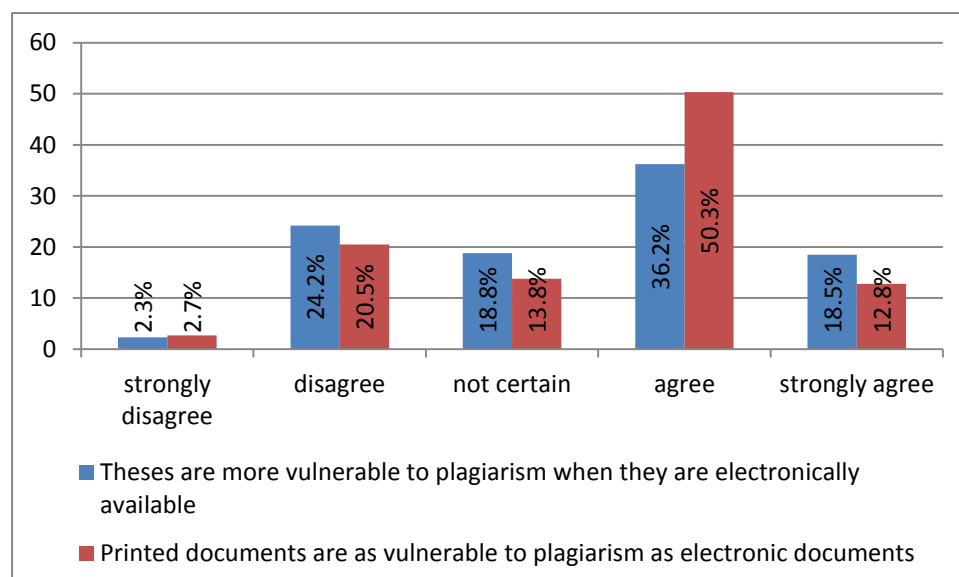
Table 7.12 illustrates that about two thirds of the respondents (62.9%) were not especially concerned about the possiblity of plagiarism when theses were made electronically available; less than a third (30.5%), however, did express significant concern in this respect (question G.1).

Table 7.12: Concern about plagiarism when theses published electronically

Possibility of plagiarism when theses published electronically					
no concern at all	a little concern	not certain	considerable concern	extreme concern	total
36 (13.9%)	127 (49%)	17 (6.6%)	56 (21.6%)	23 (8.9%)	259

To gauge overall perceptions about the influence of plagiarism issues on the adoption of ETD programmes, participants were asked to rate the possible influence of this factor on the adoption of ETD programmes. Table 7.13 shows that 37.6% of the particpants thought that plagiarism issues would not be barriers to the adoption of ETD programmes, while 47.9% of respondents thought that they would be strong barriers to the adoption of these programmes (question L.1).

Table 7.13: The influence of concerns surrounding plagiarism on the adoption of ETD programmes

Possibility of plagiarism when theses published electronically					
no influence at all	weak influence	not certain	strong influence	very strong influence	total
11 (4.5%)	80 (33.1%)	35 (14.5%)	85 (35.1%)	31 (12.8%)	242

7.4.1.3. Copyright restriction

Postgraduate students were asked additional questions about the issues of copyright restriction and future publishing as outlined in the interview findings. In general, the number of students expressing concern over these issues was slightly higher than the number of students who did not harbour concerns in this respect (Table 7.14). For example, 29.5% of students did not express much concern about the possibility of copyright restriction in the event of their articles' publication in commercial journals, while 38.1% expressed significant concern in this regard (question G.2).

Table 7.14: Concern about copyright restriction when publishing journal articles

A journal may prevent you from making your thesis electronically available if you choose to publish an article from your thesis, since in such cases the journal becomes the owner of the article's copyright					
no concern at all	a little concern	not certain	considerable concern	extreme concern	total
4 (3.8%)	27 (25.7%)	34 (32.4%)	28 (26.7%)	12 (11.4%)	105

7.4.1.4. Future publishing

Similar to the issue of copyright restriction, 34.3% of students expressed little concern about future publishing in the event their theses were published electronically, while 38.1% of students expressed significant concern in this respect (Table 7.15; question G.3).

Table 7.15: Concern about future publishing when theses published electronically

Journals may refuse to publish articles from your thesis if your thesis is already published electronically					
no concern at all	a little concern	not certain	considerable concern	extreme concern	total
12 (11.4%)	24 (22.9%)	29 (27.6%)	26 (24.8%)	14 (13.3%)	105

Figure 7.16 shows that more than half of the students (56.6% n=72 out of 127) indicated that they might refuse to particpate in ETD programmes if their particpation was going to eleminate the chances of publishing in the future, while 25.5% (n=32) of respondents indicated that they would participate in these programmes despite this possible consequence (question C.13).

Figure 7.16: Students' participation in ETD programmes if it is going to affect their future publishing
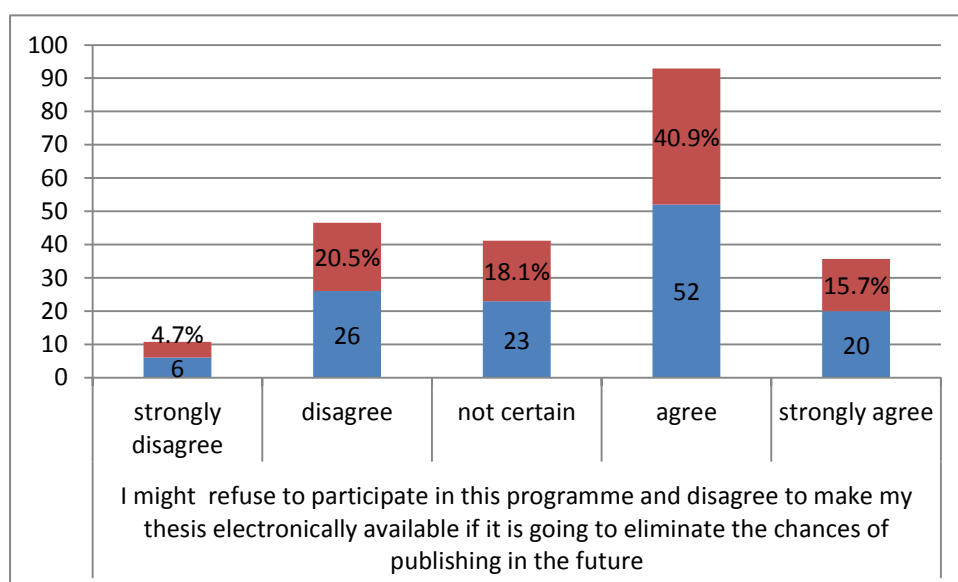
Students were also asked the following question in order to develop an overall understanding of the influence of the issue of future publishing on students' particpation in ETD programmes (Table 7.16). Less than half of the students questioned (43.5%) indicated that the issue of future publishing would strongly influence their particpation in ETD programmes, while 25.3% stated the influence of this issue on their participation to be zero or slight only (question L.16).

Table 7.16: The influence of the future publishing issue on students' participation in ETD programmes

Making my thesis electronically available might eliminate my chances of publishing papers from my thesis					
no influence at all	weak influence	not certain	strong influence	very strong influence	total
6 (6.1%)	19 (19.2%)	31 (31.3%)	27 (27.3%)	16 (16.2%)	99

7.4.2. Perceived quality of theses and dissertations

Concerns surrounding the perceived quality of theses were reported by a number of research participants in the first phase of this research (interviews). The survey respondents were asked to rate the possible negative influence of concerns about the perceived quality of theses on the adoption of ETD programmes (question L.9). About one third (29.4% n=42 out of 143) indicated that the quality of theses would not negatively or weakly influence the adoption of ETD programmes, while more than one third (39.9% n=57) indicated that it would negatively influence the adoption of these programmes (Figure 7.17).

Figure 7.17: The influence of thesis quality on the adoption of ETD programmes
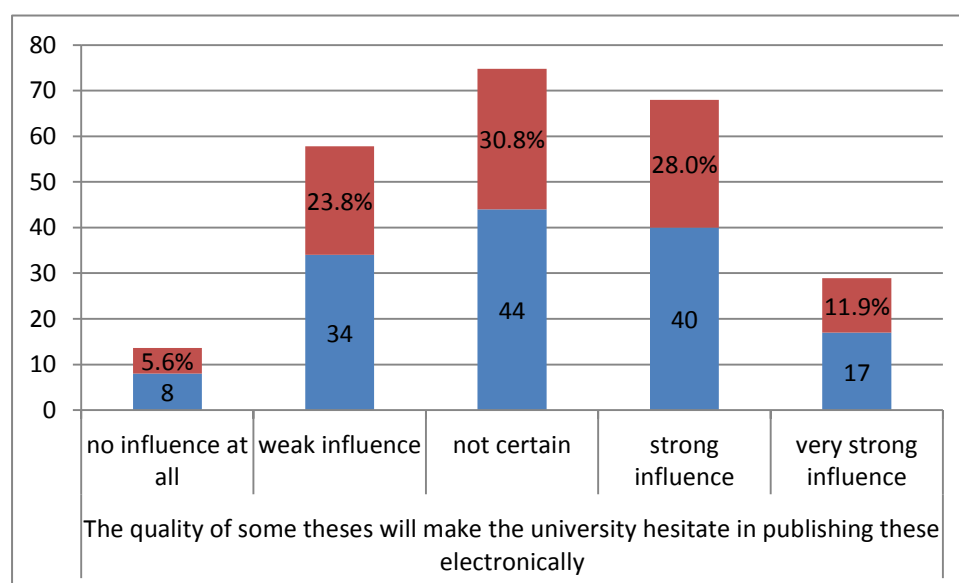
In terms of establishing new policies to govern the selection of theses, 77.2% of respondents agreed that the university should establish certain criteria in selecting theses for electronic publication (Table 7.17). However, 12.9% of respondents did not agree with this proposal (question C.14).

Table 7.17: Policies for thesis selection

I believe universities should establish certain criteria in selecting theses for electronic publication in their ETD programmes					
strongly disagree	disagree	not certain	agree	strongly agree	total
6 (3.5%)	16 (9.4%)	17 (9.9%)	95 (55.6%)	37 (21.6%)	171

7.4.3. Uncertainty of new technologies

Avoidance of using new technologices was one of the concerns reported in the interview findings. The survey respondents were asked to rate the possible negative influence of this issue on the adoption of ETD programmes in the Gulf States. Figure 7.18 shows that 34.0% (n=50 out of 143) of the respondents (technicians, librarians, academic staff, and postgraduate officers) thought that resistance to new technologies from staff who have worked in the university for a long time would not negatively influence the adoption of ETD programmes, while 46.2% (n=66) believed that this issue would strongly influence the adoption of ETD programmes (question L.11). As a general concept, 38.0% (n=92 out of 242) of the respondents (all five groups) believed that people's resistance to new technologices would not negatively influence the adoption of ETD programmes, while 38.8% (n=94) of respondents thought that it would strongly influence the adoption of these programmes (question L.14).

Figure 7.18: The influence of uncertainty surrounding new technologies on the adoption of ETD programmes

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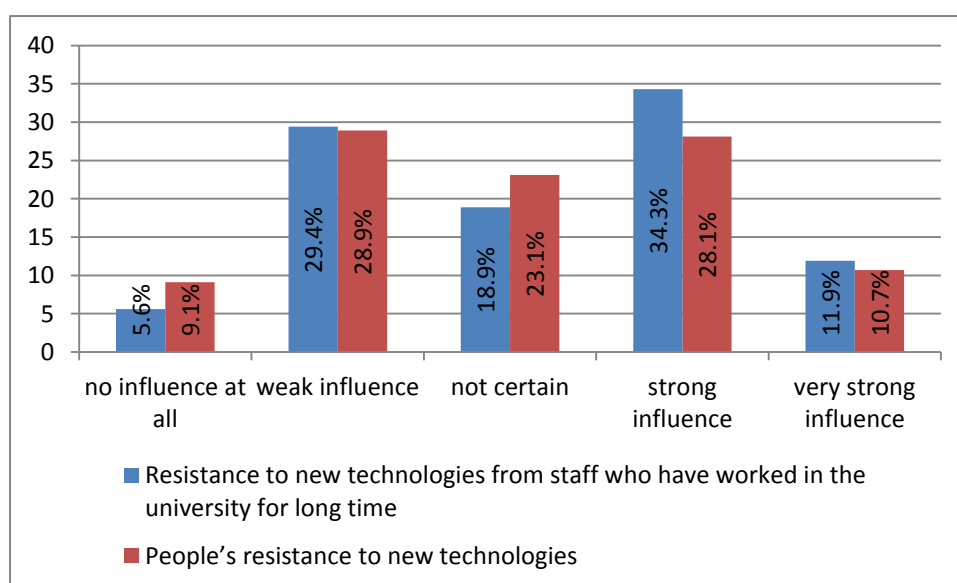
7.4.4. Summary (Concerns regarding ETD programmes)

The survey respondents highlighted several concerns regarding ETD programmes that could possibly influence the adoption and development of these programmes in the Gulf States. These included concerns regarding legal issues, concerns regarding the quality of theses and dissertations and concerns about the use of new technologies.

With regard to the copyright issues, more than half of the participants indicated that the university should seek the supervisors' permission as well as students' permission before making theses available electronically (Figure 7.12). This could be why less than half of the participants expressed concern about making theses electronically available on the internet without gaining prior permission from authors (Table 7.11). However, there was variation in perceptions about obtaining copyright permission from current and past students. While the majority of the participants thought that obtaining copyright permission from current students would pass without issue, less than half of the respondents indicated that obtaining copyright permission from past students could be a more complex undertaking (Figure 7.14). These findings contradicted the interview findings, in which one postgraduate officer mentioned that it would not be difficult to obtain copyright permission from past students. The officer explained that the university could easily contact past students because of their resident status and ask them to submit an electronic copy of their theses and sign the copyright agreement.

With regard to the issue of plagiarism, even though more than half of the particpants indicated that making theses electronically available on the internet makes these more vulnerable to palgiarism, less than two thirds of the particpants believed that printed documents were as vulnerable to plagiarism as electronic documents (Figure 7.15). This indicates that plagiarism issues are not perceived as exclusive to electronic documents, as paper documents are also vulnerable to such problems. Overall, about two thirds of the participants expressed only slight concern regarding the likelihood of plagiarism when theses were made electronically available (Table 7.12). On the other hand, less than half of the participants pointed out that concerns about plagiarism issues would negatively influence the adoption of ETD programmes in the Gulf States (Table 7.13). Nevertheless, the issue of plagiarism was rated as one of the least influential in negatively affecting the adoption of ETD programmes in the Gulf States (Table 7.35). In addition, the majority of postgraduate students (78.9%) indicated that protection of their copyright offered by the university would

give them more confidence to participate in ETD programmes (Table 7.10). This finding highlights the expected influence of the existence of appropriate copyright policies on concerns surrounding plagarism.

Postgraduate students were also asked about their concerns regarding possible copyright restrictions in the event they published journal articles based on their theses and the possibility of publishing articles from their theses in the future if their theses were already electronically available on the internet. The number of students expressing concern about the possiblity of copyright restrictions and future publishing was higher than that of students expressing no concern (Table 7.14 and Table 7.15). About half of postgraduate students indicated that they might refuse to participate in ETD programmes if their participation affected the possiblity of publishing in the future (Figure 7.16 and Table 7.16). These findings contradicted the interview findings, in which the students interviewed expressed little concern about these two issues.

One of the concerns that was perceived as a possible barrier to the adoption of ETD programmes in the Gulf States concerned the perceived quality of theses and dissertations. More than one third of the respondents believed that the quality of some theses could make the university hesitate in making them electronically available (Figure 7.17). The majority of the respondents agreed that the university should establish certain criteria in selecting appropriate theses to be made electronically available on the internet (Table 7.17). However, it is worth noting that the perception of the quality of theses as a possible barrier was not considered significant compared to other perceived barriers. Table 7.35 illustrates that concerns about the perceived quality of theses was one of the issues least considered as a possible barrier to the adoption of ETD programmes (Table 7.35 is presented at the end of this chapter).

With regard to the uncertainty of using new technologies, the number of participants who thought that the uncertainty of new technology would negatively influence the adoption of ETD programmes was greater than that of those who thought that it would not influence adoption. In particular, greater emphasis was given to staff who had worked in the university for a long time as they had greater reservations regarding the use of new technologies (Figure 7.18). Comparing this issue with other issues, the uncertainty of using new technology was perceived as one of the least influential issues in negatively affecting the adoption of ETD programmes in the Gulf States (Table 7.35).

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In summary, the survey participants mainly confirmed the findings from the research interviews, especially in their perceptions surrounding legal issues. As highlighted above, plagiarism issues were perceived as a possible major concern, especially when theses were electronically available on the internet. However, participants believed that with the appropriate security and copyright protection in place, this would be a lesser concern. It is also worth mentioning that these concerns regarding legal issues were influenced by other issues identified earlier and later, such as the appreciation of the benefits factor, the availability of resources factor (next section) and the availability of promotional activities (section 7.6.1). Once appropriate policies and promotional activities as well as appreciation of the benefits of ETD programmes have been established, concerns surrounding legal issues would be alleviated.

7.5. Availability of resources

The interview findings revealed that several resources are required in order to adopt and develop ETD programmes successfully. The following sub-sections outline the survey findings concerning these required resources.

7.5.1. Organisational infrastructure

The organisational infrastructure includes appropriate staff, such as a project champion and other qualified staff to carry out the required work necessary to adopt an ETD programme, appropriate policies, and sufficient funding.

7.5.1.1. Qualified staff

The response to questions related to the availability of qualified staff varied. While 31.2% (n=48 out of 154) of the respondents (technicians, librarians, academic staff, and postgraduate officers) indicated that sufficient staff numbers to manage ETD programmes were either "not available at all" or "inadequately available", 27.3% (n=42) indicated that sufficient staff numbers were adequately available (question F.8). Similarly, 23.3% (n=36 out of 154) indicated that qualified staff who can deal with the process required to adopt an ETD programme were inadequately available, while 37.6% (n=58) indicated that qualified staff were adequately available (Figure 7.19, question F.9). A further outcome revealed from these

responses is that more than one third of respondents (41.6% n=64, 39.0% n=60 respectively) answered "not certain" to these questions.

Figure 7.19: The availability of qualified staff
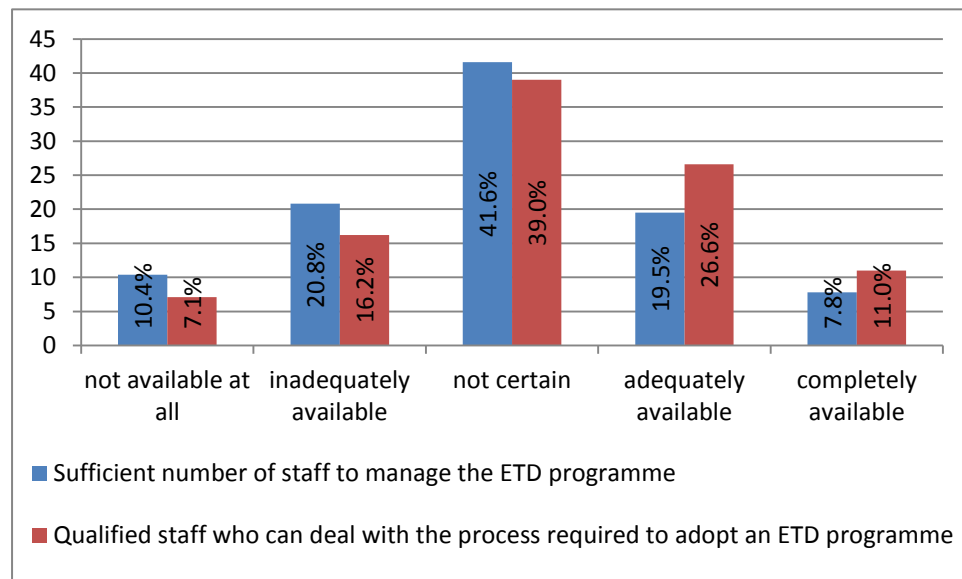
Conducting an analysis of variance test (*One Way Anova*) indicates that groups varied in response to these two questions (Sig= 0.024, 0.037 respectively). Figure 7.20 shows that librarians and technicians believed that sufficient staff numbers to manage the ETD programme were adequately available (52.8% n=19 out of 36, 27.8% n=10 out of 36 respectively) more so than academic staff (16.3% n=8 out of 49) and postgraduate officers (15.2% n=5 out of 33). On the other hand, postgraduate officers and academic staff believed that staff numbers were inadequate at their institutions (42.4%, n=14; 30.6%, n=15 respectively) more so than librarians and technicians (question F.8).

Figure 7.20: Differences in groups' perceptions about the availability of sufficient staff numbers
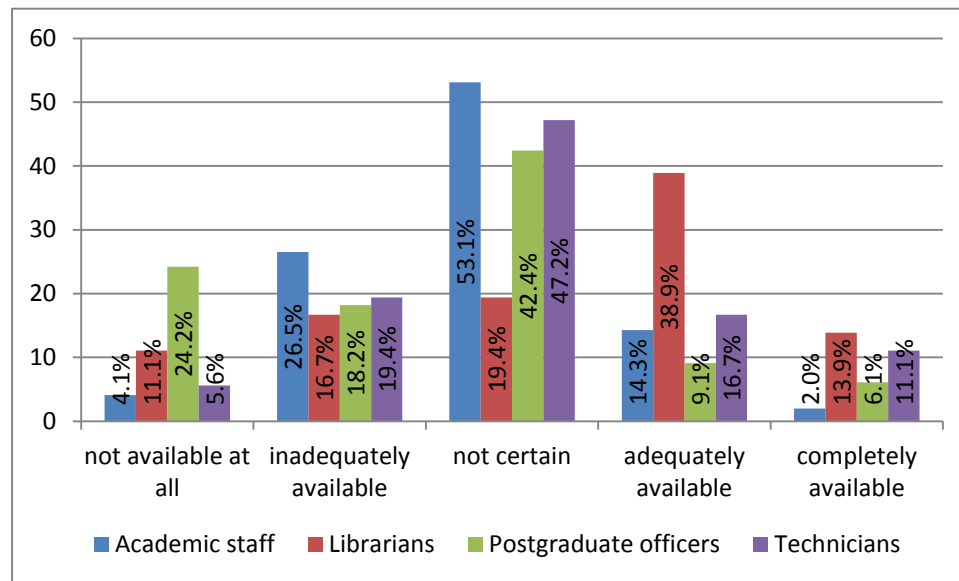
To determine the overall possible influence of the availability of qualified staff on the adoption of ETD programmes, the survey respondents (technicians, librarians, academic staff, and postgraduate officers) were asked to rate the positive or negative influence of the following statements in the adoption of ETD programmes. Figure 7.21 shows that the majority of the respondents indicated that the availability of qualified staff (89.2%, n=132 out of 148; question K.6) and training programmes (83.8%, n=124 out of 148; question K.11) could be one of the possible enablers that strongly influence the adoption of ETD programmes. On the other hand, they indicated that the lack of qualified staff could be one of the barriers that strongly influence the adoption of these programmes (72.0% , n=103 out of 143; question L.3).

Figure 7.21: The influence of the availability of qualified staff on the adoption of ETD programmes
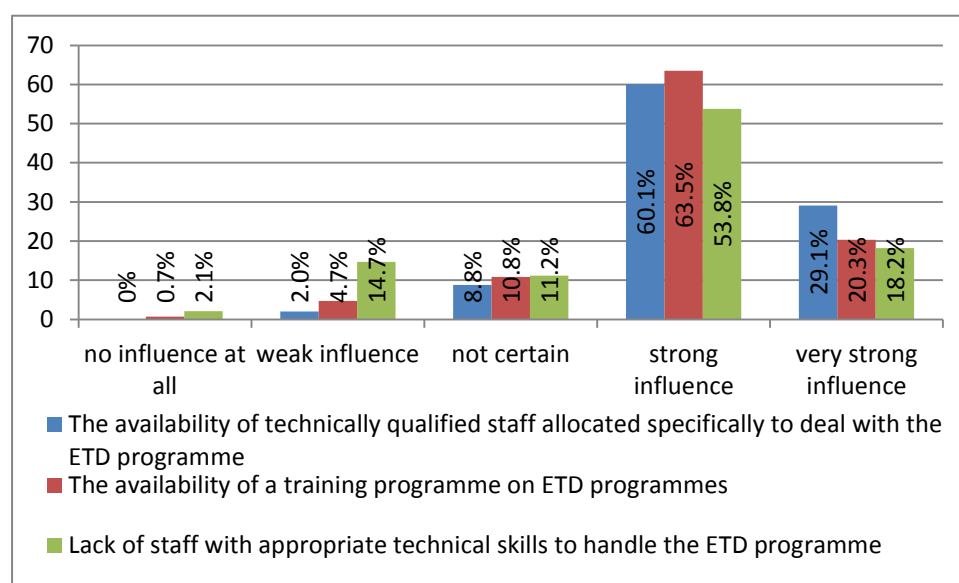
Respondents (technicians, librarians, academic staff, and postgraduate officers) were also asked to rate the influence of the administrators' support on the adoption of ETD programmes. The majority indicated that the availability of administrative support could be one of the enablers to the adoption of ETD programmes. Table 7.18 shows that 90.5% of the respondents indicated that the availability of administrative support to adopt ETD programmes could positively and strongly influence the adoption of these (question K.8). On the other hand, 81.9% of the respondents indicated that the lack of administrative support could negatively and strongly influence the adoption of ETD programmes (question L.4).

Table 7.18: The influence of the availability and lack of administrative support on the adoption of ETD programmes

The availability of administrative support to adopt an ETD programme					
no influence at all	weak influence	not certain	strong influence	very strong influence	total
0 (0%)	1 (0.7%)	13 (8.8%)	62 (41.9%)	72 (48.6%)	148
Lack of administrative support for the ETD programme					
2 (1.4%)	7 (4.9%)	17 (11.9%)	66 (46.2%)	51 (35.7%)	143

7.5.1.2. Project champions

The respondents were asked several questions about the availability and the possible influence of a project champion on the adoption and development of ETD programmes.

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Firstly, the respondents (technicians, librarians, academic staff and postgraduate officers) were asked about the appropriate people to promote and lead ETD programmes. Figure 7.22 shows that the majority of the respondents (58.7%, n=144 out of 168) thought that academic staff should take the lead in promoting the idea of an ETD programme (question D.1). The same Figure also shows that 72.7% (n=122 out of 168) of the respondents thought that the college or deanship of postgraduate studies should lead the ETD programme in the university (question D.2), while 68.4% (n=115 out of 168) thought that the library should lead these programmes (question D.3).

Figure 7.22: The appropriate people to promote and lead ETD programmes
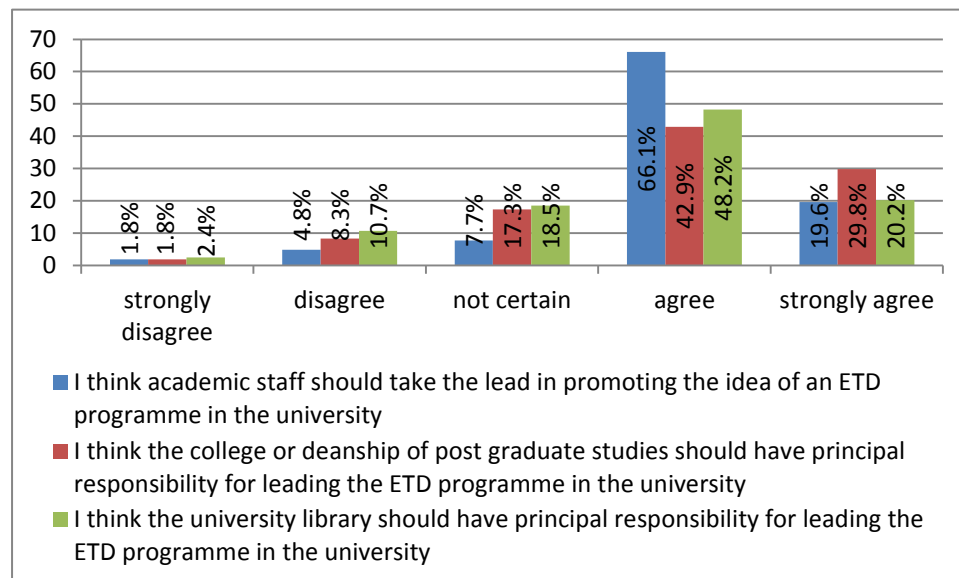
Conducting an analysis of variance test (*One Way Anova*) indicates that groups varied in response to the question about the role of academic staff (Sig= 0.000; question D.1). Figure 7.23 shows that a small number of academic staff (13.0% , n=7 out of 54) did not agree that academic staff should take the lead in promoting the idea of an ETD programme ahead of other groups.

Figure 7.23: Differences in groups' perceptions about the role of academic staff
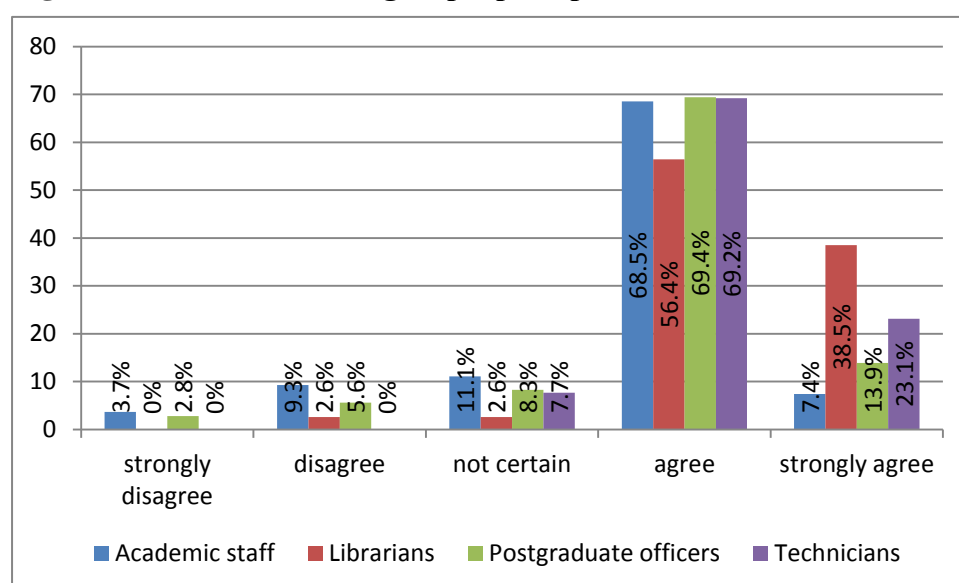
In terms of the availability of a project champion, 35.7% of the respondents (technicians, librarians, academic staff, and postgraduate officers) thought that their institution did not have a project champion who could lead the adoption of ETD programmes (Table 7.19, question F.5). Similarly, 31.8% of respondents thought that no one at their institution had a comprehensive understanding of ETD programmes (question F.6). Another result is that less than half of the respondents answered "not certain" to these two questions.

Table 7.19: The availability of a project champion

A project champion to lead the adoption of the ETD programme					
not available at all	inadequately available	not certain	adequately available	completely available	total
35 (22.7%)	20 (13.0%)	67 (43.5%)	29 (18.8%)	3 (1.9%)	154
A project champion with a comprehensive understanding of ETD programmes					
17 (11.0%)	32 (20.8%)	72 (46.8%)	26 (16.9%)	7 (4.5%)	154

In terms of the perceived influence of a project champion, Figure 7.24 shows that a project champion was commonly perceived to have a good positive influence on the adoption of ETD programmes. The majority of the respondents (73.4%, n=113 out of 154) thought that a project champion would be able to bring more administrative support to ETD programmes (question J.1). Similarly, 67.5% (n=104 out of 154) of the respondents (technicians, librarians, academic staff, and postgraduate officers) thought that a project champion would help to influence other people in the university (question J.2). In addition, 55.9% (n=86 out of

154) of the respondents thought that a project champion would be able to bring more financial support to the ETD programme (question J.3).

Figure 7.24: The influence of a project champion

Legend:
- Would help to bring more administrative support to the ETD programme
- Would help to influence other people in the university
- Would help to bring more financial support to the ETD programme
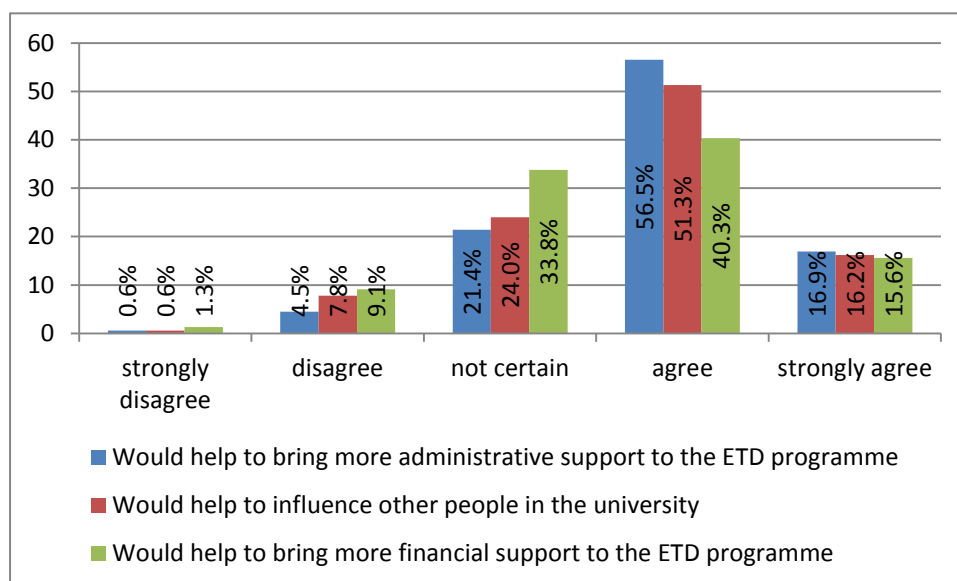
Table 7.20 shows that the majority of the respondents (89.9%; technicians, librarians, academic staff, and postgraduate officers) thought that allocating specific people to manage ETD programmes would possibly enhance the adoption process for these (question D.4).

Table 7.20: The influence of allocating specific people to manage ETD programmes

Allocating specific people to manage this programme would enhance the adoption process					
strongly disagree	disagree	not certain	agree	strongly agree	total
1 (0.6%)	4 (2.4%)	12 (7.1%)	99 (58.9%)	52 (31.0%)	168

Table 7.21 shows that the majority of the respondents (technicians, librarians, academic staff, and postgraduate officers) indicated that the availability or absence of a project champion would strongly influence the adoption of ETD programmes. About 81.8% of the respondents thought that the availability of a project champion would be one of the possible enablers to the adoption of ETD programmes (question K.9). On the other hand, 70.6% thought that the absence of a project champion would be one of the possible barriers to the adoption of ETD programmes (question L.10).

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Table 7.21: The influence of the availability or absence of a project champion in the adoption of ETD programmes

The availability of a project champion to lead the ETD programme					
no influence at all	weak influence	not certain	strong influence	very strong influence	total
0 (0%)	6 (4.1%)	21 (14.2%)	74 (50.0%)	47 (31.8%)	148
Lack of a project champion to lead the ETD programme in the university					
2 (1.4%)	16 (11.2%)	24 (16.8%)	72 (50.3%)	29 (20.3%)	143

7.5.1.3. Appropriate policies

The survey respondents were asked sixteen questions about the existence and the possible influence of the existence of appropriate policies on the adoption of ETD programmes. The first two questions asked the respondents (technicians, librarians, academic staff, and postgraduate officers) to indicate the availability of the appropriate policies. Figure 7.25 shows variance in responses concerning the availability of appropriate policies. About one quarter of the respondents (24.0%, n=37 out of 154) thought that policies that clearly allow the university to make theses electronically available were either "not available at all" or "inadequately available", while 29.2% (n=45) thought they were adequately available (question F.2). Similarly, 33.1% (n=51 out of 154) of the respondents thought that policies asking students to submit electronic copies of their theses were either "not available at all" or "inadequately available", while 28.6% (n=44) thought they were adequately available (question F.3). In addition, 46.8% and 38.3% respectively of the respondents answered "not certain" to these two questions.

Figure 7.25: The availability of appropriate policies
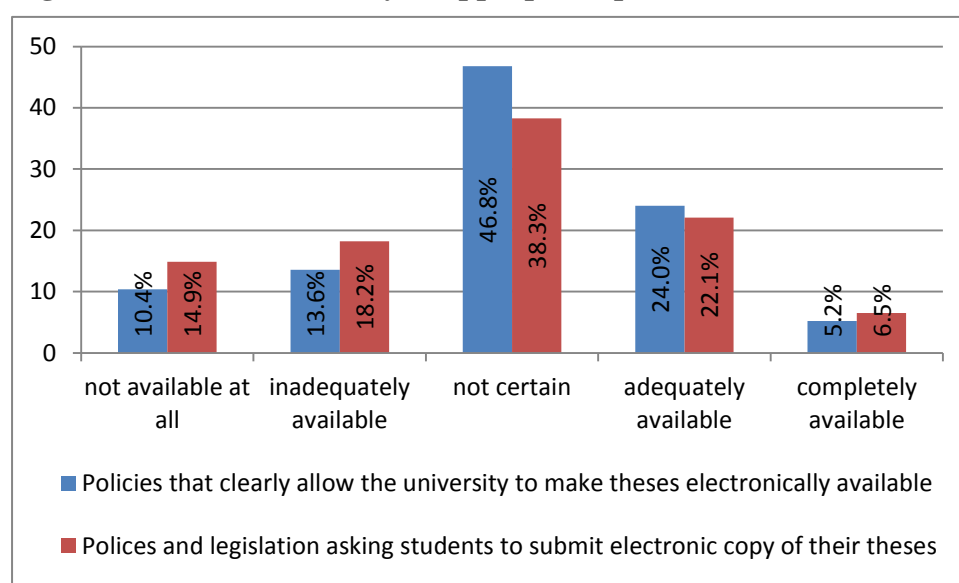
In terms of the implementation and enforcement of copyright policies in the Gulf States, the majority of the respondents (62.4%; technicians, librarians, academic staff, and postgraduate officers) thought that these policies were weakly enforced in the Gulf States (Table 7.22). Less than one third (30.2%) answered "not certain" to this question (question C.8).

Table 7.22: Enforcement of copyright policies in the Gulf States

Copyright policies and legislation are weakly enforced in the Gulf States					
strongly disagree	disagree	not certain	agree	strongly agree	total
3 (1.0%)	19 (6.4%)	90 (30.2%)	121 (40.6%)	65 (21.8%)	298

In terms of students' cooperation (question C.15), more than half of the respondents (51.7%) agreed that students' cooperation would be weak if participation was made voluntary, while 20.8% did not agree with this statement (Table 7.23).

Table 7.23: Students' cooperation when participation is voluntary

Students' cooperation will be weak if participation is made voluntary					
strongly disagree	disagree	not certain	agree	strongly agree	total
4 (1.3%)	58 (19.5%)	82 (27.5%)	124 (41.6%)	30 (10.1%)	298

The respondents (technicians, librarians, academic staff, and postgraduate officers) were also asked two questions about updating and changing copyright policies (Figure 7.26). About one quarter of the respondents (25.1% n=43 out of 171) did not agree that updating and changing copyright policies would be a time-consuming endeavour, while 26.3% (n=45) agreed with

this statement (question C.16). However, 48.5% answered "not certain" to this statement. On the other hand, 86.5% (n=148 out of 171) of the respondents agreed that updating and changing university policies to support the adoption of ETD programmes would be easier if the university administration supported the idea of ETD programmes (question C.17).

Figure 7.26: Updating and changing policies
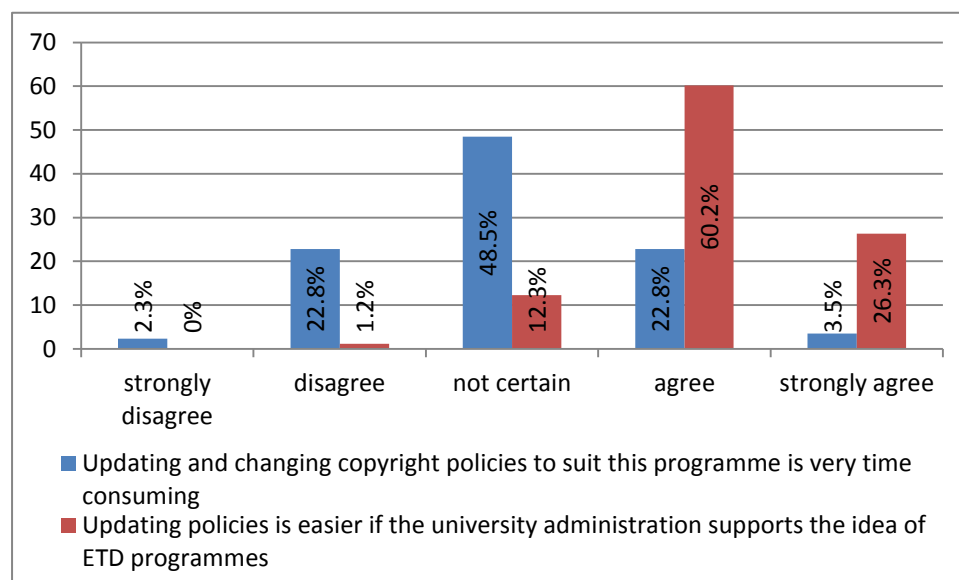
The particpants were also asked seven questions about the benefits of the availability of appropriate policies. Table 7.24 shows that the majority of the respondents (92.9%; technicians, librarians, academic staff, and postgraduate officers) agreed that if the university administration took a decision to adopt an ETD programme, providing the necessary technolgical infrastructure would be easier (question D.5).

Table 7.24: The influence of the decision to adopt ETD programmes

Higher level management decision to adopt an ETD programme will facilitate the provision of appropriate IT infrastructure					
strongly disagree	disagree	not certain	agree	strongly agree	total
1 (0.6%)	3 (1.8%)	8 (4.8%)	84 (50.0%)	72 (42.9%)	168

The research participants (all five groups) were asked to rate the effectiveness of adopting the following policies in eleminating the possiblities of plagiarism (questions H.1, H.3, H.4, and H.5). In general, the majority thought that these policies would be very effective (Figure 7.27). Establishing appropriate plagiarism policies received the most support from the participants (83.7%, mean= 4.16 n=217 out of 259), followed by creating access restrictions

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(65.2%, mean= 3.53 n=169 out of 259), making access exclusive to registered library users (52.5%, mean= 3.33 n=136 out of 259), and providing only the abstract (45.9%, mean= 3.17 n=119 out of 259).

Figure 7.27: The influence of policies on plagiarism concerns
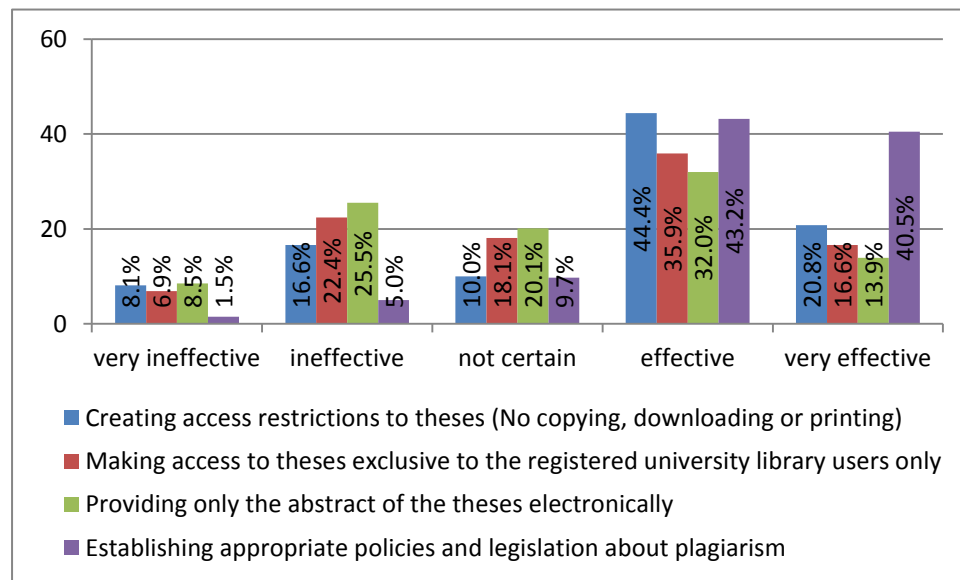
The majority of the respondents indicated that the availability of appropriate policies, such as a compulsory particpation policy and a management decision to adopt ETD programmes would possibly be strong enablers to the successful adoption of ETD programmes (Figure 7.28; questions K.4, K.7, and K.10). However, less appreciation was given to the compulsory particpation policy (48.4%, n=121 out of 248). Figure 7.29 explains why this question received less support from the participants.

Figure 7.28: The influence of policies in the successful adoption of ETD programmes
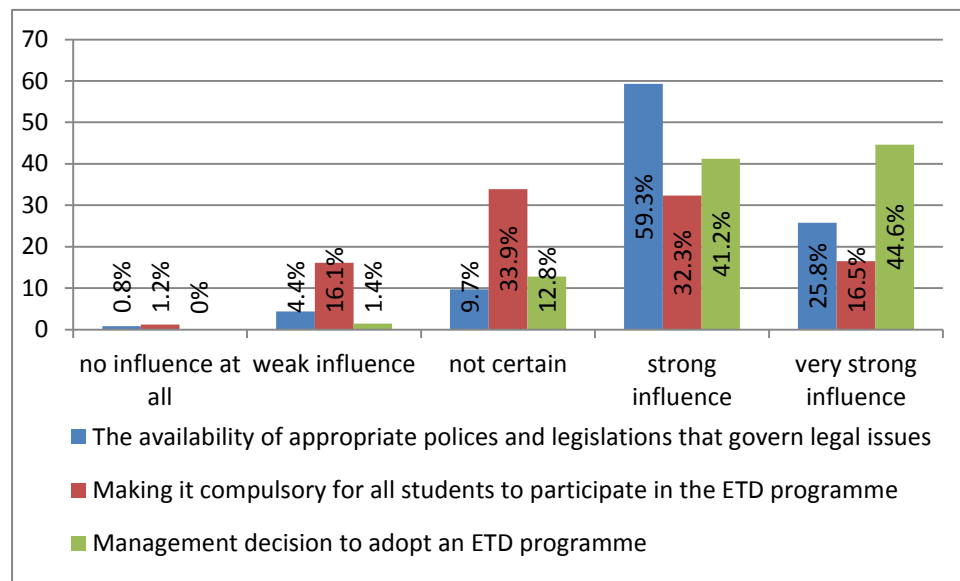
Conducting an analysis of variance test (*One Way Anova*) indicates that groups varied in response (Sig= 0.000) to the question concerning the influence of a compulsory participation policy (question K.10). Figure 7.29 shows that postgraduate students were less supportive (32.0% n=32 out of 100) of the assertion that "*Making it compulsory for all students to participate in the ETD programme*" would strongly enable the adoption of these programmes, than other groups: technicians (53.2% n=17 out of 32), postgraduate officers (60.6% n=20 out of 33), librarians (58.8% n=20 out of 34), and academic staff (65.3% n=32 out of 49).

Figure 7.29: Differences in groups' perceptions concerning the influence of a policy of compulsory participation in ETD programmes on the adoption of these programmes
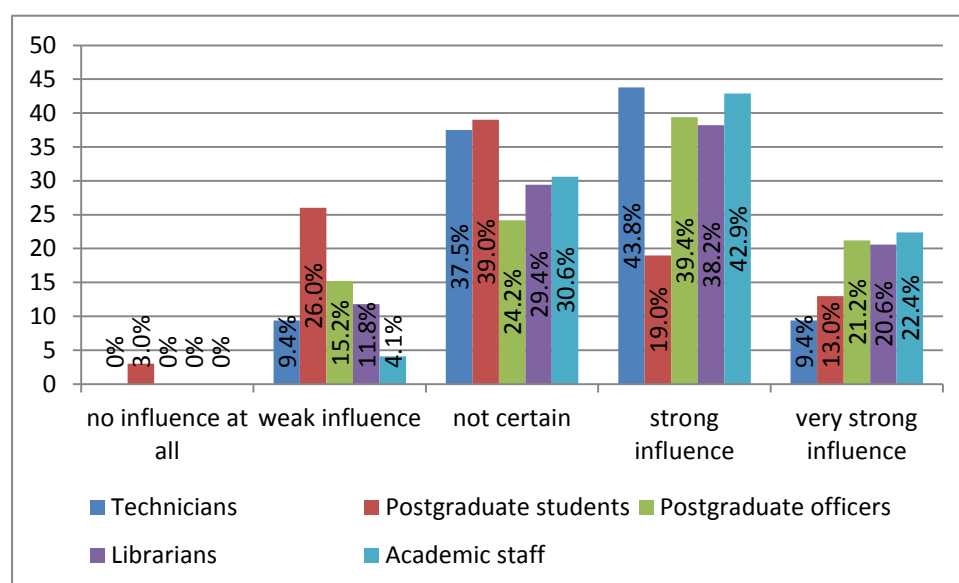
Table 7.25 shows that the majority of the respondents thought that the absence of appropriate policies would negatively influence the adoption of ETD programmes. The majority of the respondents (78.9%) thought that the lack of appropriate copyright policies would negatively influence the adoption of ETD programmes (question L.5). Similarly, 71.1% of respondents pointed out that a lack of cooperation from students in the event of voluntary participation would also negatively influence the adoption of these programmes (question L.7).

Table 7.25: The influence of the absence of appropriate policies

Lack of appropriate policies and legislation to govern the copyright of theses					
no influence at all	weak influence	not certain	strong influence	very strong influence	total
2 (0.8%)	17 (7.0%)	32 (13.2%)	107 (44.2%)	84 (34.7%)	242
Lack of cooperation and commitment from students to the ETD programme if participation is voluntary					
2 (0.88%)	25 (10.3%)	43 (17.8%)	121 (50.0%)	51 (21.1%)	242

7.5.1.4. Availability of funds

The survey respondents (technicians, librarians, academic staff, and postgraduate officers) were also asked four questions about funds availablility and its possible influence on the adoption of ETD programmes. Table 7.26 shows that 38.1% of the respondents thought that suffcient financial resources were available at their institutions, while 20.7% believed that

such resources were either "*not available*" or "*inadequately available*" (question F.7). About 44.2% of the respondents answered "*not certain*" to this question.

Table 7.26: The availability of sufficient funds

Sufficient funds for adopting the ETD programme					
not available at all	inadequately available	not certain	adequately available	completely available	total
15 (9.7%)	17 (11.0%)	68 (44.2%)	40 (26.0%)	14 (9.1%)	154

Table 7.27 indicates that 46.4% of the respondents thought that the cost of the technological infrastrucutre required for ETD programmes would not be burdensome, while 12.5% did not agree with this statement (question D.6).

Table 7.27: The cost of the technological infrastructure

The financial cost of IT infrastructure requirements for ETD programmes is not burdensome					
strongly disagree	disagree	not certain	agree	strongly agree	total
5 (3.0%)	16 (9.5%)	69 (41.1%)	58 (34.5%)	20 (11.9%)	168

Participants were asked to rate the influence of financial considerations in order to gauge overall perceptions. Figure 7.30 illustrates that the majority of respondents (89.1% n=132 out of 148) agreed that the availability of financial support would strongly influence the adoption of ETD programmes (question K.12). On the other hand, 81.2% (n=116 out of 143) of respondents believed that a lack of financial support would strongly and negatively influence the adoption of these programmes (question L.8).

Figure 7.30: The influence of financial support on the adoption of ETD programmes

A bar chart showing the influence of financial support on the adoption of ETD programmes.

Category	The availability of financial support	Lack of financial support to adopt the ETD programme
no influence at all	0%	0.7%
weak influence	1.4%	6.3%
not certain	9.5%	11.9%
strong influence	45.9%	37.1%
very strong influence	43.2%	44.1%
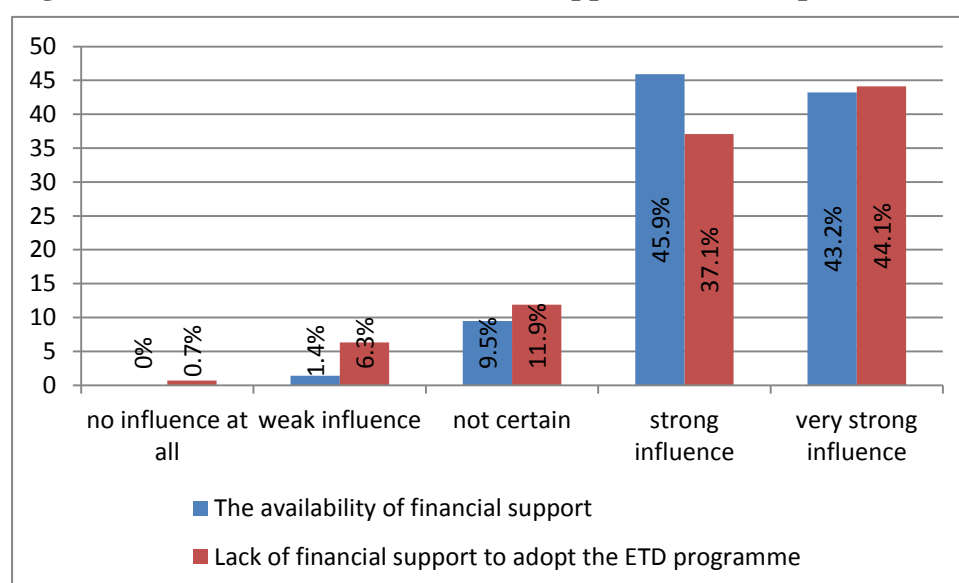
7.5.2. Technological infrastructure

The online survey asked respondents (technicians, librarians, academic staff, and postgraduate officers) six questions about the availability and the possible influence of the availability of the appropriate technological infrastructure on the adoption of ETD programmes. Table 7.28 shows that 63.2% of respondents agreed that their institutions possessed the required technological infrastructure, while 8.7% thought that their universities did not have the required infrastructure (question B.11). Less than a third of respondents (28.0%) answered "not certain" to this question.

Table 7.28: The availability of adequate technological infrastructure

Current IT infrastructure in my university is sufficient to adopt an effective ETD programme					
strongly disagree	disagree	not certain	agree	strongly agree	total
3 (1.6%)	13 (7.1%)	51 (28.0%)	76 (41.8%)	39 (21.4%)	182

More than half of respondents (52.6%) also indicated that the technological infrastructure required for the adoption of ETD programmes was adequately available, while 21.4% stated that it was inadequately available (Table 7.29; question F.1).

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Table 7.29: The availability of suitable technological infrastructure

Technological infrastructure suitable for the adoption of an ETD programme					
not available at all	inadequately available	not certain	adequately available	completely available	total
6 (3.9%)	27 (17.5%)	40 (26.0%)	62 (40.3%)	19 (12.3%)	154

In terms of the possible influence of the availability of the appropriate technological infrastructure on the technological processes, the majority of the respondents (76.0%) indicated that the technological processes would not be complex if the necessary technological infrastructure were in place (Table 7.30). Only 5.2% of respondents indicated that complexity would remain despite the existence of the necessary infrastructure (question E.1).

Table 7.30: The complexity of technological processes when the technological infrastructure is available

The necessary IT infrastructure is in place					
no complexity at all	a little complex	not certain	considerably complex	extremely complex	total
45 (29.2%)	72 (46.8%)	29 (18.8%)	6 (3.9%)	2 (1.3)	154

To gauge overall perceptions regarding the possible influence of the availability of the appropriate technological infrastructure on the adoption of ETD programmes, participants were asked to rate the influence of this factor. Figure 7.31 shows that the majority of the respondents indicated that the availability of the appropriate technologcal infrastructure would be one of the possible enablers that would strongly influence the adoption of ETD programmes in the Gulf States. For example, 54.1% (n=80 out of 148) of respondents indicated that outsourcing to a private company to scan theses and dissertations would be one of the possible enablers, while 13.6% (n=20) did not agree with this statement (question K.2). Generally, 87.2% (n=129 out of 148) of respondents indicated that the availability of the appropriate technological infrastructure would be one of the possible enablers that would strongly influence the adoption of ETD programmes (question K.3). On the other hand, 72.7% (n=104 out of 143) of respondents indicated that the lack of appropriate technological infrastructure would be one of the possible barriers that would strongly influence the adoption of these programmes (question L.2).

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Figure 7.31: The influence of the availability of the required technological infrastructure on the adoption of ETD programmes
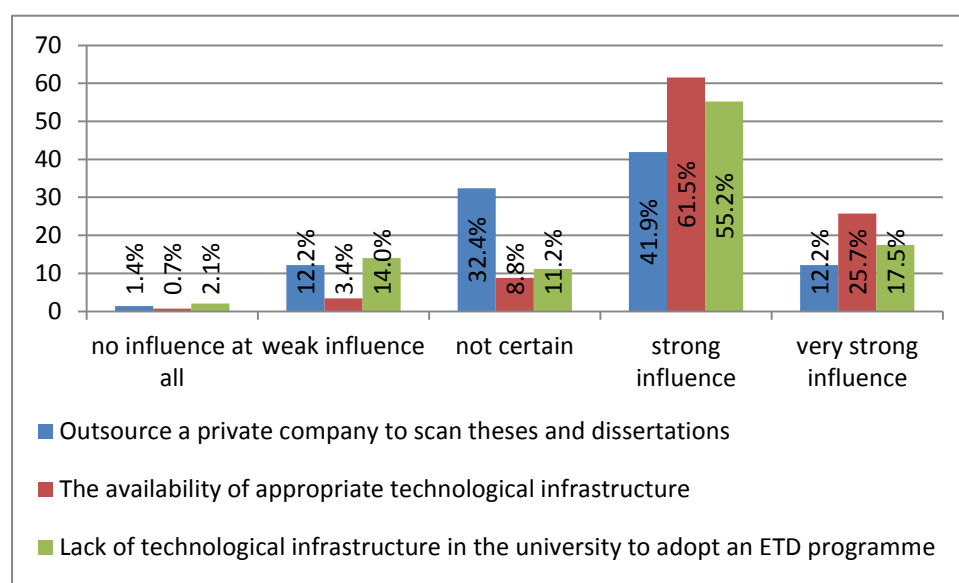
7.5.3. The quantity of postgraduate students

The limited number of postgraduate students was reported as one of the possible barriers to the adoption of ETD programmes by a few interviewees. More than half of the survey respondents (52.5%) indicated that the limited number of postgraduate students compared to bachelor students would not be a barrier to the adoption of ETD programmes, while 21.7% indicated that it would be a possible barrier (Table 7.31; question L.12).

Table 7.31: The influence of the limited number of postgraduate students on the adoption of ETD programmes

Postgraduate students are limited compared to bachelor students and thus it is not worthwhile to make theses electronically available					
no influence at all	weak influence	not certain	strong influence	very strong influence	Total
18 (12.6%)	57 (39.9%)	37 (25.9%)	21 (14.7%0	10 (7.0%)	143

7.5.4. Summary (The availability of resources)

In line with the interview findings, the survey respondents emphasised the importance of the availability of the appropriate technological and organisational infrastructure. However, in terms of the availability of the appropriate infrastructure, the survey data differed from the interview findings. In general, the majority of the respondents agreed that the availability of

the appropriate infrastructure would be a possible strong factor positively influencing the adoption and development of ETD programmes in the Gulf States.

With regard to the organisational infrastructure, the availability of qualified staff, a project champion, appropriate policies and sufficient funds were seen as would strongly influence the adoption of ETD programmes in the Gulf States. With regard to the availability of qualified staff, there was variation in responses to this issue. About one third of the respondents questioned indicated that the staff numbers required to manage ETD programmes were insufficient at their institutions, while about one quarter of the respondents indicated that staff were available in sufficient numbers. On the other hand, less than half believed that the number of qualified staff available was adequate, while 23.3% thought that number of qualified staff was inadequate (Figure 7.19). These findings indicate that staff numbers were more of a concern than the skills and qualifications of staff members in managing ETD programmes. Even though the difference was not substantial, the participants believed that universities needed more staff in order to be able to manage ETD programmes effectively, even though they had qualified staff members on board. It is also worth mentioning that about one third of the respondents answered "not certain" to these questions.

Even though participants varied in their perceptions about the availability of qualified staff at their universities, the majority agreed that the availability of qualified staff would be one of the possible enablers that could strongly influence the adoption and development of ETD programmes in the Gulf States (Figure 7.21). They pointed out that the availability of staff with appropriate technical skills would possibly facilitate the performance of the necessary technological processes. This finding highlights the possible influence of the availability of qualified staff in managing the complexity of the technological processes. In addition to the availability of qualified staff, the majority of the participants thought that the availability of administrative support to ETD programmes would strongly influence the adoption of these programmes (Table 7.18).

Responses also varied concerning the availability of a project champion. About one third of the participants thought that a project champion with a comprehensive understanding of ETD programmes and a project champion who could lead ETD programmes were inadequately available at their universities (Table 7.19). However, more than one fifth of the participants believed that a project champion was adequately available in their institutions. Less than half of respondents also answered "not certain" to these questions. These findings indicate that

participants perceived there to be a lack of such project champions with an appropriate understanding of ETD programmes and with the capabilities to lead the adoption of these programmes in the Gulf States. Thus, this was perceived as one of the possible barriers to the adoption of ETD programmes in these states.

The majority of the survey respondents indicated that the existence of a project champion would possibly help to positively influence other people concerning ETD programmes and would also help to bring more administrative support as well as more financial support to these (Figure 7.24). These findings also emphasise the possible influence of the availability of a project champion on people's attitudes about ETD programmes. In general, the majority of the respondents indicated that the availability of a project champion and allocating specific individuals to manage ETD programmes would positively influence the adoption of these programmes in the Gulf States (Table 7.20 and Table 7.21).

The respondents highlighted the role of certain people and departments at their universities. For example, the majority of the respondents agreed that academic staff should promote the idea of ETD programmes in the university (Figure 7.22). It was perceived that academic staff could possibly influence their postgraduate students and raise their awareness about ETD programmes. However, in terms of the leadership of ETD programmes, the responses varied. The majority of the respondents indicated that the college or deanship of postgraduate studies should be responsible for leading the ETD programme in the university. At the same time, the majority indicated that libraries should take this responsibility to a lesser degree (Figure 7.22). The participants may be under the impression that the deanship of postgraduate studies manages all theses and dissertations and, at the same time, is able to establish all the necessary policies.

The issue of the existence of appropriate policies was highlighted by the majority of the interviewees. As with the interview findings, the survey respondents also highlighted the importance and the possible influence of the existence of appropriate policies on the adoption of ETD programmes. However, the responses varied regarding the existence of appropriate policies. While about one third of the participants believed that appropriate policies, such as policies governing copyright issues and policies asking students to submit electronic copies of their theses were inadequately available, the other one third believed that these were adequately available (Figure 7.25). However, the rest of the respondents (less than half)

answered "not certain" to these questions. This confirmed the interview findings where interviewees' responses varied regarding the availability of appropriate policies.

Not only was it perceived that the appropriate policies did not exist, there was also the issue of the weak enforcement of policies that had been implemented, especially copyright policies. The majority of the participants perceived that copyright policies had been weakly enforced in the Gulf States (Table 7.22).

In terms of establishing and updating policies, the majority of the respondents thought that it would be an easy process, especially if the university administration supported the adoption of ETD programmes (Figure 7.26). However, participants thought that the process of updating and changing policies would be a time-consuming process (Figure 7.26). This confirmed the interview findings.

In terms of the possible influence of the availability of appropriate policies, the majority of the respondents pointed out that the availability of appropriate policies would have a strong influence on the adoption of ETD programmes in the Gulf States (Figure 7.28, Table 7.24 and Table 7.25). For example, the majority of the respondents indicated that the capability of management to rule on the adoption of ETD programmes would be a strong enabler to the adoption of these programmes (Figure 7.28). Specifically, a management decision to help facilitate the provision of the necessary technological infrastructure was perceived as important (Table 7.24). Participants also indicated that the existence of appropriate policies to govern legal aspects would be one of the possible enablers that strongly influence the adoption of ETD programmes (Figure 7.28 and Table 7.25).

The respondents were also presented with a number of options that could help in eliminating the chances of plagiarism. The findings indicate that the majority of respondents perceived that the implementation of appropriate policies to deal with plagiarism issues would be more influential than creating access restrictions to theses (no copying, downloading or printing), making access to theses exclusive to registered university library users only or proving only the abstract of theses electronically (Figure 7.27). This may reflect the participants' appreciation of the idea of making theses freely available to everyone (Figure 7.1). Therefore, in solving plagiarism issues they preferred alternative solutions that would not be associated with imposing access restrictions on theses and dissertations.

In addition, the majority of the participants indicated that the act of making student participation in ETD programmes compulsory would be one of the possible enablers to the adoption of ETD programmes (Figure 7.28 and Table 7.25). This finding reflects the participants' concerns that students' participation would be weak if participation were voluntary (Table 7.23).

There was also variation in opinions concerning the availability of sufficient financial resources to adopt ETD programmes in the Gulf States. While more than one third of the participants thought that the financial resources were adequately available, about one fifth thought that such resources were inadequately available (Table 7.26). However, less than half of the participants answered "not certain" to this question. However, about half of the participants indicated that the financial cost of the technological infrastructure required to adopt ETD programmes would not be burdensome (Table 7.27). In general, the majority of the respondents thought that the availability of sufficient financial resources would be one of the strong enablers to the adoption of ETD programmes (Figure 7.30 and Table 7.34).

With regard to the availability of the appropriate technological infrastructure, the majority of the participants believed that their universities had the appropriate technological infrastructure necessary to adopt ETD programmes (Table 7.28 and Table 7.29). The majority of the participants also highlighted the importance of the availability of appropriate technological infrastructure in the adoption of ETD programmes (Figure 7.31). In particular, they indicated that the availability of an appropriate technological infrastructure would possibly facilitate and simplify the performance of the associated technological processes (Table 7.30). This finding highlights the possible influence of the availability of the required technological infrastructure on the performance of associated technological processes (Technological factor).

A very few of interviewees (four; a librarian and academic staff) indicated that the low number of postgraduate students compared to the number of bachelor students might hinder the adoption of ETD programmes in the Gulf States. However, more than half of the survey respondents indicated that the low number of postgraduate programmes would not be a possible barrier to the adoption of ETD programmes in the Gulf States (Table 7.31).

In terms of the difference in groups' perceptions about the availability of appropriate infrastructure, the results show that librarians were the most supportive of the idea of having

necessary infrastructure in place. For example, librarians and technicians believed more so than the other groups that the number of qualified staff available was adequate (Figure 7.19). This finding, in fact, is consistent with the interview findings, in which library managers asserted that their libraries had the appropriate staff and infrastructure. Additionally, academic staff were less supportive of the suggestion that academic staff should take the lead in promoting the idea of ETD programmes (Figure 7.23).

Another difference between the groups was identified on the matter of making participation in ETD programmes compulsory. For this question, postgraduate students were less supportive of the suggestion compared to the other groups (Figure 7.29).

In summary, it is clear from the above analysis that the availability of the appropriate organisational and technological infrastructure was perceived as one of the main possible enablers to the adoption and development of ETD programmes in the Gulf States. In fact, the availability of resources factor was seen as would directly influence all of the other factors identified in this research: appreciation of the benefits factor, technological factor, concerns regarding ETD programmes factor and persuasive influence. From the survey findings, the availability of qualified staff, especially project champions, was found to be insufficient and the existence of appropriate policies, especially policies governing legal issues, was found to be deficient. Thus, such deficiencies in the availability of these resources would be perceived as a possible barrier to the adoption of ETD programmes in the Gulf States. However, in terms of the financial resources and technological infrastructure, there seemed to be very little concern in this regard as these were adequately available. Thus, the availability of these resources would be perceived as a possible enabler to the adoption of ETD programmes in the Gulf States.

7.6. Persuasive influence

As identified in the interview findings (Chapter 6, section 6.5), several persuasive factors were highlighted that could alleviate peoples' concerns and also could possibly influence the attitudes towards ETD programmes. The survey findings asserted the interview findings.

7.6.1. Promotional activities

As outlined in the literature review (Chapter 3 section 3.3.1.3) and as identified in the interviews findings (Chapter 6, section 6.5.3), conducting appropriate promotional activities results in a positive influence on people's opinions about ETD programmes and, thus, was considered as one of the possible enablers to the adoption and development of ETD programmes. Similarly, the survey findings also highlighted the importance of promotional activities in positively influencing other people's opinions. Figure 7.32 shows that the majority of the research respondents thought that conducting appropriate promotional activities would have a strong positive influence on people's opinions about ETD programmes. For example, 73.4% (n=190 out of 259) of the respondents thought that promotional activities could motivate the university community to be more willing to cooperate with the ETD programme (question I.1). Similarly, 77.2% (n=200 out of 259) of the respondents thought that promotional activities could motivate students to be more willing to participate in the ETD programme (question I.3). In addition, 72.7% (n=112 out of 154) of the respondents (technicians, librarians, academic staff, and postgraduate officers) thought that these activities could possibly convince the high-level administration to adopt an ETD programme (question I.2).

Figure 7.32: The influence of promotional activities
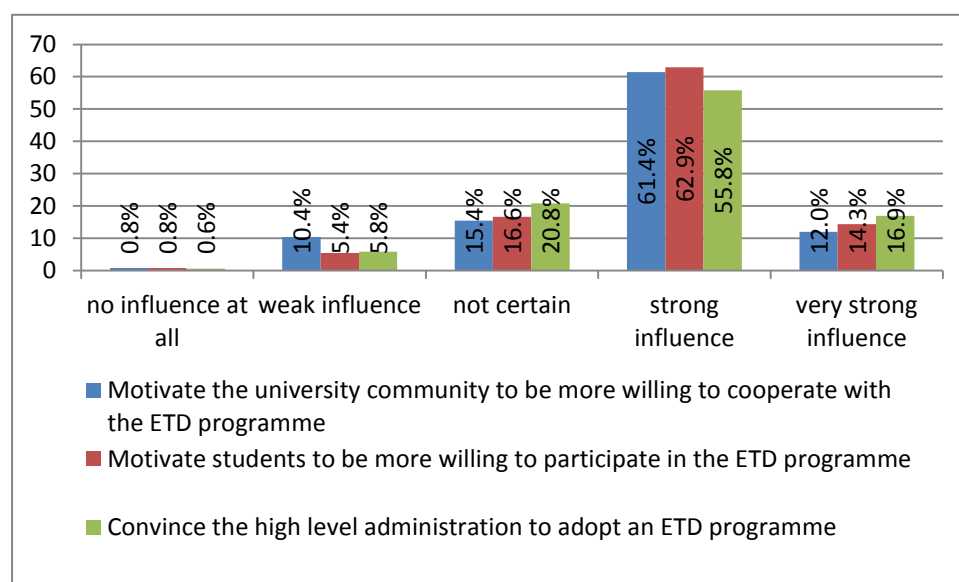
The results of the analysis of variance test (*One Way Anova*) indicate that there was a significant difference in groups' perceptions about the statement "*Convince the high level*

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administration to adopt an ETD programme" (Sig= 0.001; question I.2). Figure 7.33 shows that postgraduate officers were the group (51.5% n=17 out of 33) that least thought promotional activities could help to convince the high-level administration to adopt an ETD programme compared to other groups (academic staff 71.4% n=35 out of 49, librarians 83.3% n=30 out of 36, and technicians 83.4% n=30 out of 36).

Figure 7.33: Difference in groups' perceptions about the influence of promotional activities in convincing the university administration
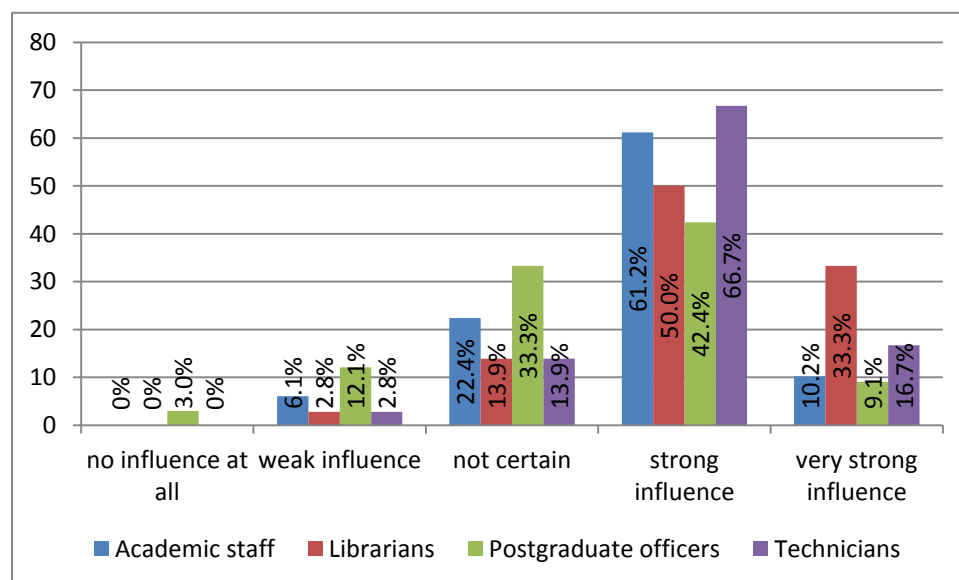
Participants were also asked to rate the possible effectiveness of making people aware of other's copyright in eliminating the chances of plagiarism. The majority of the respondents (73.0%) thought that informing people about copyright issues and others' rights would be an effective approach that could lead to reducing the chances of plagiarism (Table 7.32). This, in turn, highlights the influence of the existence of appropriate promotional activities on concerns about plagiarism issues.

Table 7.32: The influence of promotional activities on plagiarism issues

Making people aware of others' copyright					
very ineffective	ineffective	not certain	effective	very effective	total
5 (1.9%)	35 (13.5%)	30 (11.6%)	129 (49.8%)	60 (23.2%)	259

However, in terms of the existence of promotional activities at universities, less than half of the research respondents (48.0%; technicians, librarians, academic staff, and postgraduate officers) indicated that promotional activities either were not in existence at all or were

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currently inadequate (question F.4). Less than a quarter of respondents (21.4%) believed that such activities were in existence at their institutions (Table 7.33).

Table 7.33: Existence of promotional activities

Promotional activities to increase awareness of ETD programmes					
not available at all	inadequately available	not certain	adequately available	completely available	total
39 (25.3%)	35 (22.7%)	47 (30.5%)	28 (18.2%)	5 (3.2%)	154

To gauge the overal opinion regarding promotional activities, the respondents were asked two separate questions. On the one hand, 69.9% (n=169 out of 242) of the participants indicated that a lack of awarness about ETD programmes amongst the university community would be one of the possible barriers that would strongly influence the adoption of these programmes (question L.6). On the other hand, 82.2% (n=204 out of 248) of respondents indicated that conducting appropriate promotional activities would be one of the possible enablers that would strongly influence the adoption of these programmes (question K.5). The Combined findings of these two questions (Figure 7.34) indicates that the majority of the respondents valued the importance of the existence of appropriate promotional activities at their institutions in order to successfully adopt ETD programmes.

Figure 7.34: The influence of promotional activities on the adoption of ETD programmes

■ Lack of awareness about ETD programmes by the university community

■ The availability of promotional activities to make the university community aware of ETD programmes and their benefits
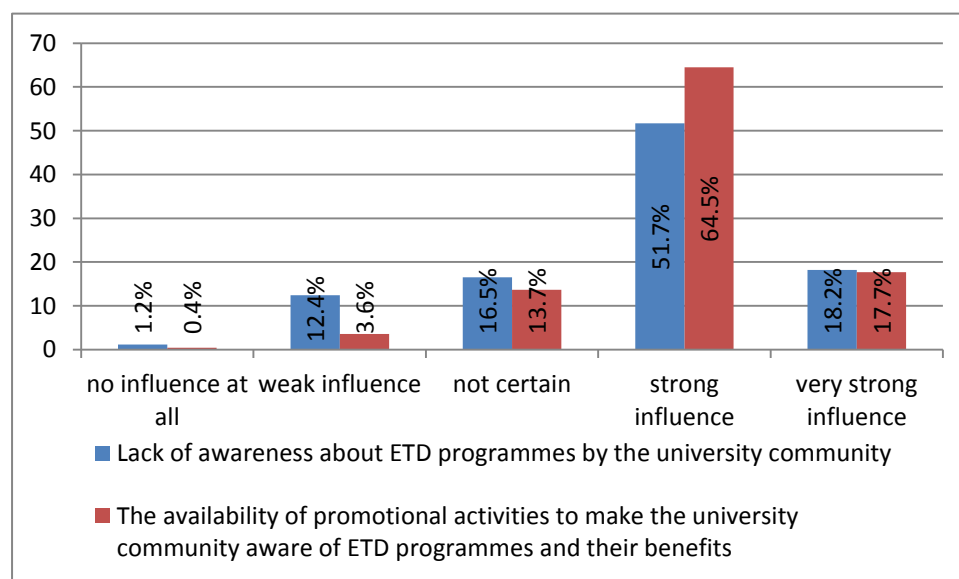
7.6.2. Current global trends and others' experience

The respondents were also asked two questions about the influence external factors, such as current global trends and others' experience could have on their attitudes towards ETD programmes. The majority of respondents (85.8% n=127 out of 148; technicians, librarians, academic staff, and postgraduate officers) indicated that benefiting from the experience of other universities in adopting ETD programmes would possibly have a strong positive influence on the adoption of these (Figure 7.35, question K.13). Similarly, 74.6% (n=185 out of 248) of respondents indicated that a global trend towards the adoption of ETD programmes would possibly have a strong positive influence on the adoption of these programmes by their institutions (question K.13).

Figure 7.35: The influence of current global trends and others' experience on the adoption of ETD programmes
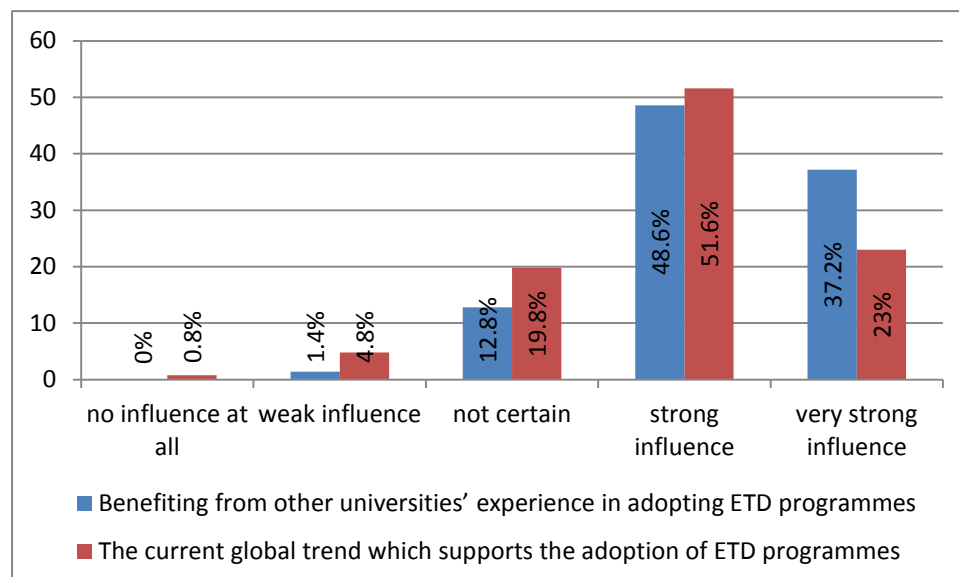
7.6.3 Summary (Persuasive influence)

The survey respondents highlighted the importance of persuasive factors, such as promotional activities, others' experiences and the global trend supporting adoption of ETD programmes, in having a favourable influence on the attitudes of individuals towards these programmes. These responses corroborated the interview findings. The majority of the respondents pointed out that conducting appropriate promotional activities could strongly influence the university community as well as the university administration to cooperate with and adopt ETD programmes (Figure 7.32). The university community and the university administration

would be more enthusiastic and motivated to pursue ETD programmes once they know more about the benefits of these (Figure 7.32 and Figure 7.34). In addition, the majority of respondents believed that promotional activities would help to reduce the likelihood of plagiarism when people had a good understanding of copyright issues (Table 7.32).

The survey findings also emphasised the influence of promotional activities on the other identified issues. As the survey revealed, conducting appropriate promotional activities would help the university community to gain awareness and appreciation of the benefits of ETD programmes (Figure 7.32 and Figure 7.34). The findings also highlight the influence of promotional activities in reducing concerns surrounding plagiarism (Table 7.32). The survey respondents believed that increasing people's awareness about the copyright of others could help to reduce the occurrence of plagiarism.

In general, the majority of the survey respondents indicated that the existence of appropriate promotional activities to help raise awareness about ETD programmes and their benefits could possibly be a strong factor in positively influencing the adoption of these programmes in the Gulf States (Figure 7.34). Based on these findings, promotional activities were perceived as one of the main possible enablers to the adoption and development of ETD programmes in the Gulf States. However, in terms of the existence of promotional activities, less than half of the respondents indicated that appropriate promotional activities were "not available" or "inadequately available" at their university (Table 7.33). On the other hand, less than a quarter thought that such activities were in existence at their university. Therefore, based on this finding, a lack of promotional activities was perceived as one of the possible barriers to the adoption of ETD programmes in the Gulf States.

With regard to the difference in groups' opinions about promotional activities, the results show that postgraduate officers were less supportive of the idea that promotional activities would help to convince the high-level administration to adopt an ETD programme (Figure 7.33).

Another influencing factor was the influence of other people on the adoption of ETD programmes. The majority of the respondents indicated that the influence of other people would strongly influence the adoption of ETD programmes. For example, seeing other universities adopt similar programmes and benefiting from their experience were perceived as would strongly and positively influence the adoption of these programmes in the Gulf

universities (Figure 7.35). Similarly, the current global trend, which supports the adoption of ETD programmes, was seen as one of the possible enablers to the adoption of these.

7.7. Summary of key findings from the survey

Overall, the survey findings generally corroborated the interview findings. There was only a slight difference in perceptions between the interview and the survey findings on a few issues, such as the difference in obtaining copyright permission from past students. Conducting an analysis of variance test (*One Way Anova*) highlighted several differences in perceptions among the five survey groups (technicians, librarians, academic staff, postgraduate officers, and postgraduate students). The differences in groups' opinions were highlighted accordingly in the relevant sections.

With regard to the appreciation of the benefits of ETD programmes, the survey findings revealed that these were indeed greatly recognised and found to be influential on the adoption and development of these programmes in the Gulf States. The findings also confirmed the claim that appreciation of the benefits helps to reduce concerns surrounding plagiarism. Therefore, the appreciation of the benefits of ETD programmes was considered as one of the main possible enablers to the adoption of ETD programmes in the Gulf States.

With regard to the complexity of the technological processes (Technological factor), the survey findings were also consistent with the interview findings. Generally, the participants did not perceive much complexity in the technological processes required to adopt ETD programmes. Even though several participants expressed more concern about some technological processes, such as scanning paper theses and providing security to online theses, they pointed out that the provision of the appropriate technological and organisational infrastructure would make performing these processes much easier and faster. Therefore, the complexity of the technological processes was seen to be possibly influenced by the availability of the appropriate infrastructure. In general, the technological processes were not perceived as a possible strong barrier to the adoption and development of ETD programmes in the Gulf States, especially if the required resources were provided.

The concerns regarding ETD programmes factor was also perceived as possibly influencing the adoption of ETD programmes in the Gulf States. One of the main issues of concern highlighted related to legal issues. The majority of the survey participants indicated that the

existence of promotional activities, which serve to inform the university community and the university administration about the benefits of ETD programmes and to shed light on legal matters would possibly help to give individuals and administrators greater motivation to participate in and support the adoption of these programmes. However, more than half of the research participants pointed out that the existence of such activities at their universities was inadequate. Thus, this was considered as one of the possible barriers to the adoption of ETD programmes in the Gulf States. However, benefiting from other universities that have already adopted ETD programmes and the current global trend, which supports the adoption of these programmes, were perceived as possibly enabling the adoption of these programmes in the Gulf States. Even though the issue of thesis quality was percieved as negatively influencing the adoption of ETD programmes by just under half of the participants, this concern was ranked as one of the least influencial in negatively affecting the adoption of these programmes in the Gulf States (Table 7.35).

Another issue of concers highlighted was the issue of uncertainty of using new technologies. The research participants expressed little concern about the issue of uncertainty of using new technologies. Although more than half of the participants thought that this issues would negatively influence the adoption of ETD programmes in the Gulf States, they ranked this issue as the least influential on the adoption of these programmes (Table 7.35). Therefore, this issue was not perceived as a main barrier to the adoption of ETD programmes in the Gulf States.

With regard to the availability of the required infrastructure, the survey participants perceived the availability of the required resources as very important in the successfull adoption of ETD programmes in the Gulf States. The responses also show that the availability of the appropriate organisational and technological infrastructure influences several other issues identified as possibly influencing the adoption of ETD programmes. However, it appeared that in general Gulf universities had some of the required infrastructure in place, though other infrastructure was lacking. While universities were thought to have adequate technological infrastructure and sufficient financial resources, there was a lack of sufficiently qualified staff, project champions and appropriate policies. As a result, the absence of such resources would negatively influence the adoption and development of ETD programmes in the Gulf States. On the other hand, the availability of the appropriate technologcal infrastructure and

sufficient financial resources was perceived as would positively influence the adoption of these programmes.

The survey respondents were asked in the last two questions to rate the possible influence of several possible enablers and barriers on the adoption of ETD programmes as identified from the interviews. Table 7.34 illustrates possible enablers to the adoption of ETD programmes. Based on the participants' responses, these enablers were ranked from the most influential to the least influential factor. Table 7.35 shows possible barriers to the adoption of ETD programmes, which were ranked from the most influential factor to the least influential factor, based on the mean value.

From Table 7.34, it is clear that the most influential factors were the availability of administrative support and financial support. As revealed in the interview and survey findings, if the university administration supports the idea of ETD programmes, the establishment of the appropriate policies and the provision of the required resources would possibly be much easier and faster. It is also clear from the table that the availability of the appropriate resources, such as management decisions in the adoption of an ETD programme, qualified staff, technological infrastructure and appropriate policies were perceived as the most influential factors in the adoption of ETD programmes. Thus, it can be concluded that the availability of the appropriate resources was the most influential factor affecting the adoption of ETD programmes in the Gulf States. As outlined earlier, this factor has also been found to influence all other identified factors.

Table 7.34: Perceived positive influence for the adoption of ETD programmes

Rank	Issues	M	SD
1	The availability of administrative support to adopt an ETD programme	4.39	0.675
2	The availability of financial support	4.31	0.698
3	Management decision to adopt an ETD programme	4.29	0.740
4	Benefiting from other universities' experience in adopting ETD programmes	4.22	0.715
5	The availability of technically qualified staff allocated specifically to deal with the ETD programme	4.16	0.660
6	The availability of a project champion to lead the ETD programme	4.09	0.785
7	The availability of appropriate technological infrastructure	4.08	0.733
8	The availability of appropriate policies and legislation to govern legal issues	4.05	0.778

9	The availability of a training programme on ETD programmes	3.98	0.751
10	The availability of promotional activities to make the university community aware of ETD programmes and their benefits	3.96	0.704
11	The current global trend, which supports the adoption of ETD programmes	3.91	0.830
12	People's appreciation of the various benefits of ETD programmes	3.90	0.788
13	Outsourcing to a private company to scan theses and dissertations	3.51	0.907
14	Making it compulsory for all students to participate in the ETD programme	3.47	0.989

Table 7.35 also reveals that the lack of administrative support to adopt ETD programmes was perceived as the most influential factor with the potential to negatively affect the adoption and development of ETD programmes in the Gulf States. In addition, the lack of appropriate infrastructure, such as financial resources, appropriate policies, technological infrastructure, and qualified staff were perceived as the factors most influential on the adoption of ETD programmes. In addition, the limited number of postgraduate students were not perceived as strongly and negatively influencing the adoption of ETD programmes. In fact, it was rated as one of the least significant issues that could negatively influence the adoption of ETD programmes.

Table 7.35: Perceived negative influence for the adoption of ETD programmes

Rank	Issues	M	SD
1	Lack of financial support to adopt the ETD programme	4.17	0.922
2	Lack of administrative support for the ETD programme	4.10	0.891
3	Lack of appropriate policies and legislation to govern the copyright of theses	4.05	0.914
4	Lack of cooperation and commitment from students to the ETD programme if the participation is voluntary	3.80	0.917
5	Lack of a project champion to lead the ETD programme in the university	3.77	0.947
6	Lack of awareness about ETD programmes amongst the university community	3.73	0.941
7	Lack of technological infrastructure in the university to adopt an ETD programme	3.72	0.982
8	Lack of staff with appropriate technical skills to handle the ETD programme	3.71	0.977
9	Making my thesis electronically available might eliminate my chances of publishing papers from my thesis	3.28	1.134
10	The possibility of plagiarism when theses are electronically available	3.19	1.161
11	The quality of some theses will make the university hesitate in publishing these electronically	3.17	1.094
12	Resistance to new technologies from staff who have worked in the university for a long time	3.17	1.146
13	People's resistance to new technologies	3.02	1.170
14	The number of postgraduate students is limited compared to bachelor students and thus it is not worthwhile making theses electronically available	2.64	1.098

The following chapter reviews the major findings and provides composite discussions on the findings of both phases (qualitative and quantitative). This is followed by revision of the framework, the research recommendations and the research conclusion.

CHAPTER EIGHT: DISCUSSION OF MAIN FINDINGS

This chapter reviews the major findings and provides discussions of the potential enablers and barriers revealed in both the qualitative phase (face-to-face interviews) and the quantitative phase (online survey) of this research. In addition, under each main factor, relevant recommendations are made concerning the adoption and development of ETD programmes in academic institutions and universities in the Gulf States.

8.1. Appreciation of the benefits

The literature review indicates that ETD programmes provide several benefits for postgraduate students and other researchers as well as for academic institutions and libraries. The literature also demonstrates that supervisors, research students and university librarians are knowledgeable regarding ETD programmes and their associated benefits (Barwick, 2007; Vijayakumar et al., 2007). As in the literature findings, the research participants perceived several personal benefits and also perceived benefits in the wider context. They believed that these programmes benefited the entire university community and other researchers at other locations around the world. Benefits perceived included benefits for postgraduate students, for researchers, for academic staff, for libraries, and for academic institutions. An example of the benefits perceived by postgraduate students was that ETD programmes would open up students' research to a wider audience and would not be limited to a few people only as it would be if kept on library shelves. These perceptions surrounding this benefit were consistent with the literature review where it is shown that, as a result of making students' theses and dissertations publicly available, their work will become better known and their research may be read more widely (Royster, 2007). Several studies conducted in different countries concluded that postgraduate students have become more enthusiastic about ETD programmes because their work had become more widely known through the downloading of their research (Eaton et al., 2000; Royster, 2007).

An example of the benefits for libraries perceived by a few of library managers is that ETD programmes offer greater flexibility to control and manage the availability of theses and dissertations. Libraries can apply access restrictions to stored theses, such as disabling of the print function, specifying certain groups permitted access to these theses and specifying certain chapters of a thesis to be made accessible or restricted. The perception of such

benefits indicates greater concern regarding legal issues such as plagiarism on the part of these participants. Thus, these programmes were viewed as a way to control and manage these issues more appropriately.

Potential time savings for library staff were a further benefit for libraries of ETD programmes perceived by a library manager and a postgraduate officer. Time spent retrieving and re-shelving printed theses, binding theses and performing other routine tasks would be saved. Instead, staff could use this time to provide extra services and perform other professional duties. It is important to clarify that this benefit was perceived only at two locations. The two sites in question have in common the fact that the process of thesis digitisation is already underway, and thus this benefit may already have been experienced at the institutions concerned.

An example of a benefit exclusive to Arab countries is that through adoption of ETD programmes, Arabic research potentially become easily accessible through the internet. Several research participants claimed there to be a lack of research in the Arabic language available online. It is perceived that ETD programmes would lead to thesis writte in the Arabic language being more easily accessible and that researchers would benefit from this.

Scrutiny of the perceptions of benefits indicates that interviewees at one institution perceived a wider scope of benefits than interviewees at others. Participants at this particular institution indicated that activities that sought to promote ETD programmes had been implemented and in the course of which corresponding knowledge had been acquired. This finding highlights the influence of promotional activities on the appreciation of the benefits. Thus, there is a great need for promotional activities to be conducted at other institutions.

Dividing the perceived benefits into levels indicates that the research participants perceived benefits at personal, institutional, and contextual levels. Benefits at the personal level included improved access to theses, improvements to students' research, and better exposure to students' work. Perception of these personal benefits helped motivate those participants to support the adoption of ETD programmes. Benefits at the institutional level included a favourable impression concerning the academic institutions, facilitated archiving of theses, controlled access to theses, space saving, reduced routine work, and increased satisfaction amongst users. Such benefits were mostly perceived by library managers, system managers and postgraduate officers (deans of postgraduate research). These three groups had the

authority to take the decision to adopt ETD programmes or at least their recommendations to adopt these programmes would be taken into account. At the contextual level there was a common perception amongst students with about two thirds of those questioned alluding to this fact. The research participants indicated that making their theses electronically available would help other researchers in the Arab countries and in other developing countries to obtain free access to theses and dissertations. They also indicated that sharing knowledge freely is required by their religion and, thus, they wanted to share their theses publicly on the internet. Therefore, the appreciation of the benefits at these three levels by the research participants was considered a major enabler of the adoption and development of these programmes in the Gulf States.

A number of interviewees who demonstrated awareness of the benefits of these programmes stated that they had studied at western universities that had adopted such programmes several years ago, whilst others indicated that they had come from countries and universities that had these in place. It is important to clarify that academic institutions in the Gulf States have multinational staff, especially in academic spheres. In addition, a number of participants made mention of the fact that they had consulted theses available online during their research. These considerations explain why the perceptions of the research participants correspond to the literature findings in this regard. However, a few participants had no prior knowledge of these programmes before being interviewed, yet perceived several benefits. These persons believed that since theses would be available online, the benefits would be comparable to those of E-books or E-journals.

In addition to the perceptions of the benefits of ETD programmes, the interviewees and the survey respondents highlighted the importance and the influence of these benefits in the adoption of these programmes. They asserted that awareness and appreciation of the benefits would help to motivate and encourage individuals to support the adoption of ETD programmes. In addition, several research participants (interviewees and survey respondents) thought that the benefits of these programmes outweighed their concerns about some legal aspects, such as issues of plagiarism. According to Lutz (1998), uncertainty of new technologies can be reduced if people appreciate and perceive the benefits of these technologies. This relationship was not part of the original framework, but was highlighted in the revised framework. Several interviewees also indicated that other persons would not be able to influence their opinions on ETD programmes since they valued the importance and

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the benefits of these. This finding indicates that appreciation of the benefits helps to motivate people regarding ETD programmes and, thus, reduces their likelihood of being influenced by other persons. This relationship was not highlighted in the preliminary framework, but was included in the revised framework.

In addition, several postgraduate students believed that the expected complexity in the technological processes would not influence their decision to participate in ETD programmes owing to their solid appreciation of the benefits. This finding also highlights the influence of the appreciation of the benefits on accepting the complexity of the technological processes. This relationship was not included in the original framework, but was highlighted in the revised framework. Therefore, based on these findings, the appreciation of the benefits of ETD programmes influences other factors, such as the technological factor, concerns regarding ETD programmes, and persuasive influence. In general, the research participants (both the interviewees and the survey respondents) pointed out that the appreciation of the benefits of ETD programmes to be one of the major enablers to the adoption and development of ETD programmes in the Gulf States.

Conducting an analysis of variance test (*One Way Anova*) indicates that there was no significant difference in the five groups' responses to the questions related to the benefits of ETD programmes.

8.1.1. Recommendation

Because of the importance of this factor in the adoption of ETD programmes and since a number of interviewees indicated that they did not fully understand the benefits of these, more needs to be done to inform stakeholders about the benefits of ETD programmes. Therefore, promotional and advocacy activities should be conducted appropriately. These activities should target the university community, postgraduate students and academic staff in particular, and concentrate on giving them greater knowledge about these programmes and their benefits.

8.2. Technological factor

The examined literature shows that some of the technological issues, such as software selection, preservation and archival issues, the mediated or self-submission issue and the

scanning issue, have been found to be complex (Hockx-Yu, 2006; Mishra et al., 2007; Shearer, 2006; Teper & Kraemer, 2002). In addition, technology acceptance theories indicated that the degree of ease associated with the use of an innovation affects the adoption of this new technology (Venkatesh et al., 2003). Rogers (2003) also stated that innovations that are perceived to be simpler to understand will be adopted more rapidly than those that are not.

8.2.1. Marginal complexity of technological processes

Notwithstanding the literature findings, the research participants (both the interviewees and the survey respondents) did not perceive significant complexity in the technological processes required to adopt ETD programmes. For instance, the majority of the research participants believed that providing security for online theses and dissertations would not be a difficult task. They indicated that universities had the appropriate resources to protect their online collections since they already provided several online services and, thus, always maintained good security systems. Another technological process, which was not perceived to be complex, was the long-term preservation of electronic theses and dissertations. The respondents explained that electronic documents could be easily migrated to other storage media as several storage facilities were widely available on the market, whilst, in addition, current storage facilities were much better than their predecessors in terms of capacity and quality. However, such perceptions regarding this process, which contradicted the literature findings, could be due to a lack of comprehensive understanding of the technological processes involved in the preservation process. The literature illustrates that long-term preservation encompasses several factors throughout the lifecycle of the digital object, such as longevity of the storage medium, preserving metadata, rights management and technology obsolescence (Shearer, 2006). The researcher noted that system managers did not mention issues of preserving metadata, rights management and technology obsolescence when asked about the issue of long-term preservation. These respondents only discussed the storage facilities and the migration process. If such processes had been highlighted, wider concerns regarding these processes may have been perceived by the research participants.

Even though a minority group of the survey respondents believed that some of the technological processes, such as long-term preservation, online security, and scanning paper theses to be complex, the majority of both the interviewees and the survey respondents

indicated that the availability of the appropriate organisational and technological infrastructure would simplify and speed up the performance of these processes. This can be categorised as an institutional factor that influenced the perceptions of the complexity of the technological processes. Such resources included the existence of appropriate policies governing thesis security, the availability of a sufficient number of qualified staff and the availability of the appropriate technological infrastructure, such as advanced scanners and greater storage space. For example, the interviewees stated that the availability of advanced scanners would simplify and make the scanning process faster. In addition, theses and dissertations were already available in electronic format, which would facilitate making theses available online. These findings highlight the influence of the availability of the required infrastructure on the technological processes. This relationship was not highlighted in the preliminary framework, but was included in the revised framework.

8.2.2. Postgraduate students' perceptions

Postgraduate students in particular perceived the technological processes, such as converting their theses into PDF format and submitting these on CDs to be a straightforward undertaking. They explained that new technologies and software made these tasks easier and less complicated. The literature findings also support these perceptions. According to McMillan (2005), students find the process of converting their theses and dissertations into PDF files and submitting these electronically to be very convenient. However, it is important to clarify that students were not asked about a self-submission process, which requires them to complete a web-based metadata submission form. Self-submission processes were not implemented in any of the research sites. If such processes had been adopted, there might have been perceptions of related difficulties.

8.2.3. Other concerns about technological processes

A minority of survey respondents perceived greater complexity in the technological processes. A few participants, for instance, indicated that they had wider concerns regarding the scanning process. The interviewees reported that the process potentially be difficult when dealing with dated paper theses and dissertations, especially if in a poor state of repair. They expressed concerns that such theses would require careful treatment and the process would prove time consuming. However, as noted in the interview findings, the delay in the adoption

of ETD programmes due to the introduction of technological processes was perceived at one institution more than other institutions. This institution had already started to digitise its paper theses and manuscripts, and with more than 10,000 theses and dissertations on record, maintained the greatest number of works compared to the less than 3000 of other institutions (see Chapter 2, section 2.2). Thus, the process may have been found to be time consuming. These findings were in accord with the literature findings. The retrospective conversion of printed theses and dissertations has been found to be a challenging and painstaking affair, especially where the number of theses and dissertations is substantial (Mishra et al., 2007). Despite this concern, the participants believed that once the required facilities and resources were provided the process of scanning paper theses would be straightforward.

As the results indicate, a minority of the participants perceived that the greater challenge lay in the shortage of qualified staff to perform the technological processes as well as deficiencies in the necessary technological infrastructure and policies. Therefore, the lack of availability of these resources was seen as compounding the difficulties of the technological processes. This lack of resources could be due in part to the newness of these institutions, especially in terms of their electronic services. This, in turn, can be categorised as a contextual factor since most academic institutions in the Gulf States were established quite recently. In addition, about one third of the survey respondents indicated that they were uncertain about the difficulty of several technological processes, such as migrating electronic theses to another medium, the security system, and the scanning of Arabic scripts (see Table 7.5, 7.6, 7.8 and Figure 7.10). This reasonably high number of responses expressing uncertainty possibly indicates that these respondents had a poor understanding of these processes, and as such were unable to indicate the difficulty of these processes. Interviewees barely mentioned these issues when questioned on the technological processes.

In general, the research participants (both the interviewees and the survey respondents) did not believe that the complexity of the technological processes to be a major barrier to the adoption and development of ETD programmes in the Gulf States. However, they indicated that the technological processes potentially be conducted much more easily if the required policies, qualified staff, and technological infrastructure were provided and made available. This means that the difficulty of the technological processes depends on the availability of the required technological and organisational infrastructure. These findings indicate that the complexity of the technological processes is influenced more by institutional factors than by

personal perceptions. As the interviewees indicated, the technological processes are not difficult, but they can be conducted more easily once the required resources are available. These findings also indicate that the availability of the necessary infrastructure influences the complexity of the technological processes. This relationship was not part of the original framework, but was highlighted in the revised framework.

8.2.4. Groups' differences in perceptions

Conducting an analysis of variance test (*One Way Anova*) indicates that there was one question for which a significant difference was revealed between the five groups' perceptions relating to the technological processes of ETD programmes. A small number of technicians and, to a lesser degree, academic staff were less supportive of the idea that their institutions could easily manage the technological processes required to adopt ETD programmes than other research groups. This could be because technicians and possibly some of the academic staff knew more about the technological processes and their complexity and, thus, expected much more difficulty in these processes than other groups. Another possible explanation for this is that academic staff, especially older staff, might perceive higher inherent levels of complexity. According to the results of both phases, participants perceived that older staff might have greater reservations about the use of new technologies than younger staff (see section 8.3.5).

8.2.5. Recommendation

To facilitate the technological processes, universities should provide the required organisational and technological infrastructure. Online security policies should be established to manage the protection of online theses and dissertations. In addition, existing staff should be trained to deal effectively with the required technological processes. Furthermore, the appropriate technological infrastructure, such as advanced scanners and greater storage space should be provided. By providing the appropriate resources, the technological processes would not constitute a major barrier to the adoption of ETD programmes in the Gulf States.

8.3. Concerns regarding ETD programmes

The literature review shows that postgraduate students and academic staff have several concerns regarding ETD programmes, especially regarding legal issues. Several studies have concluded that the participation of staff and students in IR or ETD programmes is not high, especially when participation is voluntary (Foster & Gibbons, 2005; Jones & Andrew, 2005; Kim, 2007; Piorun et al., 2007; Sale, 2006). The low rate of participation may be a reflection of legal concerns in relation to intellectual property rights, plagiarism and prior publication (Bandara, 2008; Bogdanski & Copeland, 2009; Brown, 2010). The literature also shows several factors that could influence the attitudes of people regarding ETD programmes. McMillan (2005) indicated that there were some cases in which academic staff advised their students to impose access restrictions on their theses. McMillan noted that the percentage of academic advisors who advised their students to make access restrictions increased from 46% in 2001 to 55% in 2005. Greig (2005) claimed that the absence of an individual responsible for promoting the ETD programme in the university community was a barrier to the adoption and implementation of an ETD programme at the University of Glasgow.

Like the literature findings, the research participants (both the interviewees and the survey respondents) had concerns regarding ETD programmes that could negatively affect the adoption of ETD programmes in the Gulf States. Four legal issues were perceived as influencing the adoption of these programmes (obtain copyright permission, plagiarism, copyright restrictions, and future publishing).

8.3.1. Obtaining copyright permission

Trying to obtain permission from current postgraduate students in order to make their theses electronically available was not perceived as a possible barrier by the majority of the research participants (both the interviewees and the survey respondents). The interviewees explained that postgraduate students valued the importance and the benefits of ETD programmes and, thus, would be happy to participate in these. In fact, postgraduate students were very enthusiastic about the idea of ETD programmes as evident in the interview findings. The interviewees also explained that the existence of appropriate policies to ask students to sign consent forms for having their theses published online would make the process much easier. These findings highlight the possible influence of the appreciation of the benefits of ETD

programmes on the process of obtaining copyright permission from postgraduate students. The findings also highlight the possible influence of the existence of appropriate copyright policies (an institutional factor) on obtaining copyright permission from students. These relationships were not part of the original framework, but were included in the revised framework.

However, a few interviewees and about half of the survey respondents indicated that obtaining copyright permission from students to be difficult. Explanations given were that their institutions did not have the appropriate policies in place to give the university the right to publish students' theses and dissertations. This lack of relevant policies is influenced by the recency of the establishment of research programmes in the Gulf States. This can be categorised as a contextual factor that influenced the establishment of the appropriate policies, which, in turn, influenced the participants' perceptions regarding gaining copyright permissions. A few of the participants also thought that copyright permissions should be sought from supervisors as well as from students. These perceptions were consistent with the literature findings. According to the reviewed literature, copyright or intellectual property rights have been identified as a significant barrier that often confronts institutions that have adopted ETD programmes (Copeland & Penman, 2004; Ghosh, 2007; Ghosh, 2009; Leung, 2005).

In addition, the process of obtaining copyright permission from previous students was perceived to be more difficult than obtaining the permission from current students. About half of the survey respondents indicated that tracking down students who submitted their theses in the past in order to obtain their permission potentially be more complicated. The literature highlights the same concern about the issue of obtaining copyright permission from past students. When the author of a thesis cannot be located, it is impossible to secure the necessary permission. Thus, permission-seeking may not only be costly and time-consuming, but may also prove fruitless (Lippincott, 2006; Perry & Callan, 2006). Therefore, obtaining permission from past students to make their theses electronically available was considered to be a possible barrier to the adoption of ETD programmes in the Gulf States. However, these findings contradicted the interview evidence of one postgraduate officer who mentioned that it would not be difficult to obtain copyright permission from past students. The officer explained that the university could easily contact past students because of their resident status

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and ask them to submit an electronic copy of their theses and sign the copyright agreement. Nevertheless, seeking copyright permission in such a way would be time consuming.

8.3.2. Plagiarism issues

Concerns were raised about the issue of plagiarism. About two thirds of the survey respondents and less than half of the interviewees indicated that theses would be more vulnerable to plagiarism when published electronically. This finding is consistent with the literature findings. Postgraduate students and their supervisors argue that plagiarism and misuse are facilitated by making theses and dissertations electronically accessible through the web (Bandara, 2008; Copeland et al., 2005; Friend, 1998; Jewell, Oldfield et al., 2006; Lippincott, 2006). The research participants also reported that the appropriate policies (institutional factor) to protect theses online had not been implemented in the Gulf States. They explained that if the appropriate policies were in place, concerns regarding plagiarism would be alleviated. This highlights the importance of the existence of appropriate policies and the fact that the participants' perceptions regarding plagiarism are influenced by an institutional factor (the availability of appropriate policies). This lack of appropriate policies, in turn, could have been influenced by a contextual factor (due to the relatively recent establishment of research programmes in the Gulf States). Two interviewees (an academic staff and a postgraduate officer) also added that people in the Gulf States did not fully understand the concept of plagiarism. One academic explained that students in the Middle East and in the Gulf States do not understand the concept of plagiarism and, thus, believe that copying without referencing is legal. In the Gulf States the culture requires free sharing of knowledge. Due to this cultural value, people lack awareness of plagiarism. This can also be categorised as a contextual factor that influenced perceptions concerning plagiarism. As a result, issues of plagiarism were perceived as potentially a possible barrier to the adoption and development of ETD programmes in the Gulf States.

However, about three quarters of the survey respondents indicated that printed documents were as vulnerable to plagiarism as electronic documents. The interviewees explained that the plagiarism issue was not exclusive to electronic theses and dissertations; other online research, such as E-books and E-journals were vulnerable to plagiarism as well as all research available in paper form only. In addition, the majority of the survey respondents believed that discovering plagiarism in the case of electronic documents would be easier and faster than

discovering plagiarism in the case of paper documents. The literature also shows that if a plagiariser has easy access to a document, a reviewer can retrieve the source file with a phrase search in existing internet search engines (Bevan, 2005; Gruppetta, 2005; Jewell, Oldfield et al., 2006). As a result of the easy discovery of plagiarism, the survey respondents believed that the chances of plagiarism would be decreased since individuals would be aware that they would be caught easily. In addition, the majority of the research participants (both the interviewees and the survey respondents) indicated that establishing appropriate copyright policies and applying access restrictions to online theses would be very effective in eliminating the likelihood of plagiarism. This finding highlights the influence of the availability of appropriate policies on concerns regarding plagiarism issues. Moreover, the majority of the survey respondents agreed that the appreciation of the benefits of ETD programmes outweighed their concerns surrounding the plagiarism issue. This finding highlights the influence of the appreciation of the benefits on concerns surrounding the issue of plagiarism. These relationships were not included in the preliminary framework, but were highlighted in the revised framework.

For all of these reasons, about two thirds of the research participants (both the interviewees and the survey respondents) perceived no or less concern about the plagiarism issue. In addition, the survey respondents perceived and rated the possibility of plagiarism as one of the least influential issues in negatively affecting the adoption and development of ETD programmes in the Gulf States. Therefore, based on these findings, the plagiarism issue was not perceived as a major barrier with the potential to negatively affect the adoption and development of ETD programmes in the Gulf States, especially if the appropriate policies to control and manage the electronic publication of theses and dissertations had been implemented.

8.3.3. Copyright restriction and future publishing

With regard to the possibility of copyright restriction in the event they published journal articles based on their theses in commercial journals, postgraduate students expressed greater concern about this than the plagiarism issue. Just over half of the students questioned held reservations about the possibility of copyright restriction in making their theses electronically available on the internet if they published an article from their theses in a commercial journal (the survey findings). A number of students also expressed concern about this issue and

explained that they had insufficient knowledge regarding the possibility of copyright restriction (the interview findings). The literature indicates that there is a general misunderstanding amongst postgraduate students regarding the rights they have to re-use their publications after having signed copyright transfer agreements (Barwick, 2007; Gadd et al., 2007).

Postgraduate students also expressed concern about the possible constraints on their future publishing if they participated in ETD programmes and their theses were made freely available on the internet. In addition, postgraduate students indicated that they had a limited understanding of these issues and the possible consequences of their participation in ETD programmes (the interview findings). Previous literature reported similar findings. It was found that another concern of faculty advisors and postgraduate students is that making their research widely accessible on the web will be considered as prior publication (Davis & Connolly, 2007; Horwood, Sullivan, Young & Garner, 2004; Lippincott, 2006; McMillan et al., 2011) when articles based on chapters of theses are submitted by their authors for consideration by academic journals (Glavash et al., 2000; McMillan, 2005). A survey conducted in the UK revealed that the greatest concern amongst those who did not deposit material in IR projects was that they would not be able to publish such material in the future (Gadd, Oppenheim & Probets, 2003). The literature indicates that there is a need to inform academic staff that depositing their material in IR programmes does not necessarily preclude them from being published in high-impact journals (Horwood et al., 2004). Bevan (2005) and McCutcheon (2010) found that publishers rarely refuse publication of an article based on the online availability of the thesis or dissertation. The literature and this research finding indicate that there is a great need for promotional activities to be conducted to highlight these issues to postgraduate students as well as academic staff. These research findings highlight the influence of promotional activities on concerns surrounding copyright restriction and future publishing.

It is worth noting that the survey findings slightly contradicted the interview findings, with the students interviewed expressing little concern about these two issues. The interviewed postgraduate students explained that journal articles differ from the original theses in various ways, such as in terms of title and sub-titles, length, structure, and referencing style and, thus, articles would be accepted for publication. This contradiction might be due to the fact that the survey questions asked students to rate their concern as if the problems already existed, while

the interviewees were asked if they perceived any concern about these issues. Nevertheless, the survey findings revealed that significant concern existed regarding these issues compared to other legal issues. As the literature indicates, such concerns can be handled by conducting appropriate promotional activities to highlight these issues.

However, several students suggested that they should publish several articles from their theses before making their theses electronically available (the interview findings). The literature indicates that some ETD programmes allow students to request an embargo period so that they can publish several papers from their theses before making their theses available online (Andrew, 2004b; Greig, 2005; McCutcheon, 2010). Moreover, the surveyed postgraduate students perceived and rated the issue of future publishing as one of the least influential issues in discouraging their participation in ETD programmes. In addition, less than half of respondents expressed no concern about these two issues. In the interviews, students explained that journal articles differed from the original theses in various ways, such as in terms of structure, titles, length, coverage, formatting, and referencing style. Therefore, they thought that commercial journals would not mind publishing their articles. They also understood that publishing articles from theses is a very common practice despite these being made available online.

8.3.4. Perceived quality of theses and dissertations

One of the possible barriers perceived by more than half of the survey respondents were concerns about the perceived quality of theses and dissertations. This issue emerged from the research findings, which was not included in the preliminary framework. The interviewees indicated that universities might hesitate in publishing poor quality theses and dissertations electronically since such works might come to damage the reputation of these institutions. In particular, students who believe that their theses may be of a poor quality might hesitate in participating in ETD programmes due to concerns that this would enable other individuals to read and criticise their work. A number of interviewees explained that academic staff may have less experience with research and, at the same time, be unable to dedicate the same time and effort in evaluating and reviewing their students' work (institutional factor). Therefore, theses are submitted without comprehensive evaluation and revision. In other words, the perceptions of low quality of theses and dissertations were influenced by a contextual factor, namely, the newness of the research programmes in the Gulf States. Due to this newness,

academic institutions and advisors had less experience with research programmes. Therefore, the participants were not confident that the outcomes of these research programmes would meet international standards.

In response to concerns surrounding the quality of theses, the majority of the survey respondents agreed with the suggestion that the university should establish some criteria in selecting appropriate theses to be made electronically available on the internet. Moreover, postgraduate students favoured optional participation in ETD programmes over compulsory participation (see section 8.4.9). However, the issue of the quality of theses was perceived and rated by the survey respondents as one of the least important issues that could negatively influence the adoption of ETD programmes in the Gulf States.

8.3.5. Uncertainty of new technologies

With regard to the issue of uncertainty of using new technologies, about two thirds of the interviewees indicated that they had the confidence to adopt new technologies from the outset, especially if they were deemed to be highly beneficial to them and their institutions. This finding indicates that the appreciation of the benefits of any new technology helps to reduce people's resistance to using these new technologies. As explained earlier, a number of the research participants indicated that some individuals, in particular older academic staff, might be reluctant to use new technologies. This cultural value can be outweighed by promoting the benefits of these new technologies. It is worth highlighting that the possible influence of promotional activities on older staff was not tested in this research. This could be an avenue for future research. The interviewees also explained that the use of electronic services was very common at their institutions (institutional factor) and, thus, the adoption of ETD programmes to be considered as an additional electronic service. Therefore, this institutional factor (the adoption of several electronic services) influenced people's acceptance of any new electronic services (personal perception). On the other hand, roughly one third of the interviewees expressed concern about using new technologies before others had used them. They believed that new technologies might entail certain problems and, therefore, preferred to wait to evaluate the experiences of others. In addition, about half of the survey respondents also indicated that people's resistance to new technologies to be one of the possible barriers that could negatively affect the adoption of ETD programmes in the Gulf States. However, according to Lutz (1998), recognition and appreciation of the benefits of

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unfamiliar technology help alleviate reservations with regard to use. Thus, the appreciation of the benefits of ETD programmes could help stimulate willingness to use these. Therefore, there is a need to conduct promotional activities to convince people of the benefits and the importance of ETD programmes in order to motivate them to use this new technology.

The research participants (both the interviewees and the survey respondents) also indicated that older staff who have worked in the university for long time might be more resistant than younger staff. Several interviewees explained that older staff were used to performing tasks manually and did not have much experience in the use of new technologies, while younger staff, having grown up around such technologies, were more familiar with these and would express fewer reservations with respect to their adoption. There is a broad similarity between this finding and the literature review. Muinde (2009) found that institutions headed by managerial staff of a younger age were adopting new technologies faster than those headed by older managers. However, it is worth noting that the issue of resistance on the part of older staff was raised by younger staff members during the interviews, while older personnel themselves did not express such resistance to using new technologies. It is possible that younger staff members were used to perceiving difficulties on the part of older staff in accepting new ideas. It is also possible that older staff preferred not to present themselves as a part of the problem. It is important to highlight here that population statistics in the Gulf States show that the Gulf societies are dominated by younger persons. Young persons account for more than 30% while people aged over 65 represent less than 1.5% of the population (GCC, 2011c). Therefore, the adoption of ETD programmes is expected to be more straightforward and rapid in these societies owing to the increased familiarity of younger generations with new technologies having grown up around these, and thus fewer reservations with respect to their adoption would be anticipated.

 In general, the survey respondents perceived and rated the issue of resistance to using new technologies as one of the least influential in negatively affecting the adoption of ETD programmes in the Gulf States. Therefore, the uncertainty of using new technologies was not perceived to be a major barrier that could negatively affect the adoption and development of ETD programmes in the Gulf States.

In summary, with regard to the concerns regarding ETD programmes, it is worth distinguishing between the participants' personal perceptions and the institutional and contextual factors that existed around the participants. Although a few participants perceived

concerns regarding ETD programmes, they indicated that the existence of certain institutional factors would alleviate their concerns. Such factors included copyright policies, plagiarism policies, and promotional activities. These findings indicate that concerns regarding ETD programmes were more influenced by institutional factors (lack of appropriate resources). In addition, as a few interviewees indicated, the culture in the Gulf States influences peoples' perceptions regarding plagiarism. People in the Gulf States make little distinction between permissible copying and plagiarism. They think that what is available publically can be used freely without restrictions. Therefore, those interviewees had concerns regarding plagiarism since theses will be available publically online.

8.3.6. Groups' differences in perceptions

Analysis of a variance test (*One Way Anova*) indicates significant differences were discernible between the five groups' perceptions related to the agreement of supervisors. Postgraduate officers were less supportive of the idea that the university should obtain the supervisors' agreement before making their students' theses electronically available on the internet. Postgraduate officers may believe that permission should be sought only from students. In the interviews, they explained that students own the copyright to their thesis. They may also believe that the idea of participation in ETD programmes should be compulsory and, thus, there would be no need to obtain permission from students or academic staff (see Chapter 6, section 6.3.1.1.1).

One of the findings revealed from questions regarding the legal concerns is that about one third of postgraduate students indicated they were not certain about questions related to the possibility of copyright restrictions and future publishing. This finding indicates that postgraduate students had a weak understanding of copyright issues, such as copyright restrictions and future publishing. This finding was consistent with the literature review. According to Barwick (2007), it seems that there is a general misunderstanding among postgraduate students concerning the rights they have to re-use their publications after having signed copyright transfer agreements. Therefore, postgraduate students need to be informed about these legal issues.

8.3.7. Recommendations

1. Since concerns were greater regarding legal issues, due mainly to insufficient knowledge of these programmes and their related issues, and as it was believed that this could negatively affect people's attitudes towards ETD programmes, promotional activities should be conducted as early as possible within the university community, with focus on students and academic staff, as the successful adoption of ETD programmes depends on the participation of these individuals. These groups need to be well informed concerning these programmes. Several studies have concluded that the level of participation of staff and students in IR or ETD programmes is not satisfactory, especially when participation is voluntary (Foster & Gibbons, 2005; Jones & Andrew, 2005; Kim, 2007; Piorun et al., 2007; Sale, 2006). The low rate of participation often may be a reflection of legal concerns in relation to intellectual property rights, plagiarism, and prior publication (Bandara, 2008; Bogdanski & Copeland, 2009; Brown, 2010). Therefore, promotional activities should be conducted and target postgraduate students and academic staff in order to highlight the benefits of ETD programmes and inform them of the legal issues, such as copyright issues, future publishing, and the plagiarism issue and how the university is handling them. For example, students should be informed that participation in ETD programmes and allowing their theses to be made electronically available on the internet does not preclude them from being published in high-impact journals. Discussing these issues with students and academic staff would help to remove the ambiguity about these issues and would also help to reduce related concerns.

2. Promotional activities should also target top-management individuals in order to attract greater administrative support to the adoption of these programmes. Once persons at university administration level are convinced of the importance of ETD programmes, the required policies could be established and the necessary financial support provided much more quickly and easily. In addition, all potential issues such as copyright and plagiarism should be highlighted and explained in order to motivate the university administrator to support the adoption of these programmes.

3. Since postgraduate students may have several reasons to hesitate in participating in ETD programmes, options for access restrictions or an embargo period should be provided for students when they participate in these. For example, an embargo period of up to two years

should be provided to the participating students to allow sufficient time for publishing their findings.

4. Appropriate policies should be established that ask students to sign consent forms to make their theses electronically available on the internet. This would help to secure the copyright permission from students before making their theses electronically available.

5. Appropriate policies to protect the copyright of theses should be established in order to give students confidence that their theses would be protected and, in the event that their work was plagiarised, that the university would help students in recovering their rights.

6. University staff, in particular older staff members, should be informed and convinced of the importance and the benefits of ETD programmes in order to motivate these individuals to support the adoption of these programmes and, in the future, to use these. As the literature and the research participants indicated, appreciation of the benefits of new technologies could diminish resistance to their use.

8.4. Availability of resources

The reviewed literature indicates that the availability of organisational and technological infrastructure is one of the main factors affecting the adoption and development of ETD programmes. Some studies have shown that the absence of appropriate policies and legislation was a discouraging factor affecting the adoption of ETD programmes (Vijayakumar et al., 2007). Other studies have concluded that the shortage of appropriate staff was one of the reasons university administrators decided to withdraw from ETD programmes (Allard, 2003). In addition, theories of technology acceptance emphasise the importance of the availability of appropriate infrastructure on facilitating the use of the technology (Venkatesh et al., 2003).

As in the literature findings, the research participants (both the interviewees and the survey respondents) highlighted the importance of the availability of the appropriate technological and organisational infrastructure to the adoption of ETD programmes in the Gulf States. Organisational infrastructure included the availability of appropriate policies, staff and financial resources.

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8.4.1. Qualified staff

With regard to the organisational infrastructure, the availability of sufficient numbers of technically qualified staff was perceived as a potential enabling factor. The interviewees explained that qualified staff potentially able to conduct all the required technological processes quickly and smoothly. They would also be able to deal with all possible difficulties in these processes. This finding highlights the possible influence of the availability of qualified staff on the complexity of the technological processes. This relationship was not part of the original framework, but was highlighted in the revised framework. With regard to the availability of qualified staff, librarians and technicians believed that they were adequately available while academic staff and postgraduate officers indicated that they were inadequately available (from the survey findings). Librarians indicated that university libraries had appropriate staff to deal with ETD programmes. Even though ETD programmes might necessitate staff, librarians indicated that they could request help from the information technology centre in the university. On the other hand, since the academic staff and postgraduate officers had a weak understanding of the technological processes, this might be the reason for believing that insufficient staff were available to deal with ETD programmes. It was noted during the interviews that interviewees at one institution provided contradicting perceptions in this regard. While one librarian stated that appropriate staff were available, a technician and a postgraduate officer expressed there to be a lack of appropriate staff at their institution. This could be due to a weak understanding of the processes required to adopt and develop ETD programmes.

It is also worth mentioning that roughly one third of the respondents answered "not certain" to these questions. These participants may have no knowledge regarding the availability of appropriate staff at their universities or may have a weak understanding of the requirements of ETD programmes. Therefore, the majority of the survey respondents suggested outsourcing to private companies to perform the technological processes, especially the scanning of paper theses and dissertations. According to Tennant (2000), some university libraries in developing countries have indeed chosen to outsource the digitisation of theses and dissertations and to make them available online, by employing commercial companies to undertake the process on their behalf. The majority of the survey respondents also indicated

that conducting training programmes to deal with ETD programmes to be one of the possible enablers to the adoption of these.

Although participants highlighted a lack of availability of qualified staff at their institutions, ETD programmes can be implemented by a small number of staff, especially at the early stages. Several studies have demonstrated that universities do not require extra staff in order to adopt an ETD programme. McMillan (2001) and Ubogu (2001) found that existing staff numbers can carry out the work required to implement ETD programmes. Therefore, the availability of qualified staff cannot be categorised as one of the main barriers to the adoption of ETD programmes in the Gulf States.

8.4.2. Project champions

With regard to the influence of project champions, the majority of the research participants (both the interviewees and the survey respondents) indicated that the availability of a project champion potentially one of the major enablers to the adoption of ETD programmes in the Gulf States. The interviewees explained that a project champion possibly able to promote ETD programmes within the university community and the university administration. In particular, the project champion would play an important role in highlighting the benefits of these programmes to postgraduate students and to discuss with them the legal issues that might be of concern. Providing students with knowledge of ETD programmes and convincing them of the importance of these were perceived as potentially effective methods in motivating students to participate in these programmes and in ensuring they would be less likely to alter their opinions if attempts were made to discourage them (section 8.5.2). This finding highlights the influence of the project champion (institutional factor) on the opinions of postgraduate students (personal perceptions). This relationship was not included in the preliminary framework, but was highlighted in the revised framework.

The project champion would also be able to bring more administrative and financial support (institutional factor) to ETD programmes by convincing the university administration of the importance of adopting these programmes. According to the research participants (both the interviewees and the survey respondents), attracting greater administrative support would enable the necessary policies to be established and current policies to be updated much more quickly and easily. The literature review supports these findings. According to Greig (2005), a project champion would be able to take the lead at the relevant committees and would likely

have the power to push through the necessary changes in the regulations. For all of these factors, the majority of the research participants (both the interviewees and the survey respondents) indicated that the existence of a project champion and the allocation of specific individuals to manage ETD programmes would possibly be among the major enablers to the adoption and development of these programmes in the Gulf States. However, with regard to the availability of project champions, more than half of the survey respondents stated that there was a lack of project champions with a comprehensive understanding of ETD programmes at their universities. Therefore, they believed that the absence of project champions to be one of the major barriers to the adoption of ETD programmes in the Gulf States. These perceptions were consistent with the literature findings. According to Greig (2005), the absence within the senior management of the University of Glasgow of a person responsible for informing and discussing the legal issues of concern to postgraduate students and academic staff was a barrier to the adoption and implementation of an ETD programme at the university.

It is worth highlighting that the availability of a project champion was expressed by interviewees from one institution. The project champion at this institution was responsible for managing and directing all of the processes related to the programme, including the technological processes. This institution has already started to scan its paper theses and dissertations. However, a decision to make available the scanned theses electronically has not yet been taken. Other institutions had no project champions responsible for ETD programmes at the time the research was conducted. Related processes were either managed by library managers or postgraduate officers.

8.4.3. Administrative support

In addition to the project champion, the availability of administrative support was seen as the most influential factor affecting the adoption of ETD programmes in the Gulf States by the majority of the survey respondents. The research participants (both the interviewees and the survey respondents) perceived that the appreciation of the importance of ETD programmes by the university administration potentially facilitates the provision of all the required resources to these programmes (institutional factor). The university administration possibly be able to provide the required financial resources, technological infrastructure, and establish the necessary policies. The research participants (both the interviewees and the survey

respondents) also suggested that either the deanship of postgraduate studies or the university library should take the responsibility for leading the ETD programme in the university. The deanship of postgraduate studies was suggested because it normally collected all theses and dissertations from students and had the power to establish the required policies. Libraries, on the other hand, were preferred by some other respondents since these had the appropriate staff to handle ETD programmes and normally collected theses either from students or from the deanship of postgraduate studies.

8.4.4. Appropriate policies

In terms of policies, the majority of the research participants (both the interviewees and the survey respondents) stated that the availability of appropriate policies possibly be one of the major enablers to the adoption and development of ETD programmes in the Gulf States. These policies included the policies of submission of electronic copies of theses, the copyright permission policies, mandatory participation policies, management decisions to adopt ETD programmes and policies to manage the issue of plagiarism. The research participants (both the interviewees and the survey respondents) indicated that asking students to submit an electronic copy of their thesis would facilitate making theses electronically available. The university would not need to scan theses if they were submitted in electronic format. In addition, asking students to sign forms of copyright permission would allow the university to publish these electronically on the internet.

Moreover, making participation in ETD programmes compulsory would help to ensure that all students participate in these programmes. Optional or voluntary participation may lead to some students not participating in these. Students may hesitate to participate due to their perceptions regarding the possible poor quality of their work or owing to concerns regarding future publishing, copyright restrictions, or plagiarism. The literature review also highlights the need for making the participation of students in ETD programmes mandatory. Several studies have concluded that the level of participation of staff and students in IR or ETD programmes is not satisfactory, especially when participation is voluntary (Foster & Gibbons, 2005; Jones & Andrew, 2005; Kim, 2007; Piorun et al., 2007; Sale, 2006). Sale evaluated the ADT programmes and analysed the impact of mandatory policies and indicated that voluntary deposition of ETD resulted in repositories collecting less than 12% of the available theses, whereas mandatory deposition caused the deposit rate to grow towards 100%.

In addition to these policies, the majority of the research participants (both the interviewees and the survey respondents) indicated that the management decision to adopt ETD programmes could help to provide all the required resources to these. In fact, the survey respondents perceived and rated this factor as the third most important factor that would influence positively the adoption of ETD programmes in the Gulf States. Policies that deal with the plagiarism issue were also believed to be of great influence. The majority of the research participants (both the interviewees and the survey respondents) indicated that the availability of appropriate policies would help to inspire in people, especially students, greater confidence regarding ETD programmes by giving reassurance about copyright protection of theses. They also perceived that the availability of the appropriate policies that govern the plagiarism issue would help to reduce the possibility of plagiarism. This finding highlights the influence of the existence of the appropriate policies (institutional factor) on concerns surrounding plagiarism (personal perceptions). This relationship was not highlighted in the original framework, but was included in the revised framework. However, applying access restrictions to online theses and dissertations was less favoured by survey respondents. They perceived that the implementation of appropriate policies to deal with plagiarism issues potentially more influential than creating access restrictions to theses (no copying, downloading or printing) or making access to theses exclusive to registered university library users. This finding supports the earlier finding that the majority of the survey respondents agreed that theses should be made freely available to everyone (Chapter 7, section 7.2, Figure 7.1). Therefore, in solving plagiarism issues they preferred alternative solutions that would not require the imposition of access restriction on theses and dissertations.

The above findings indicate that the research participants attributed significant influence to the availability of the appropriate policies (institutional factor) in the adoption of ETD programmes and highlighted ways in which such policies could facilitate their adoption. However, with regard to the availability of the appropriate policies, about half of the research participants (both the interviewees and the survey respondents) expressed there to be a lack of the required policies, such as policies asking students to submit electronic copies of their theses and copyright policies. The nonexistence of such policies may be due to contextual factor, namely, newness of research programmes in the Gulf States (see section 8.4.4). In addition, the majority of the survey respondents indicated that copyright policies had been

weakly enforced in the Gulf States. As explained in the interview findings, a number of participants indicated that in some cases individuals and legal organisations did not strictly follow plagiarism cases through. Therefore, the non-availability and weak enforcement of appropriate policies was perceived as one of the major barriers to the adoption and development of ETD programmes in the Gulf States. However, even though roughly half of the research participants (both the interviewees and the survey respondents) indicated that updating and changing copyright policies to be time-consuming, the majority indicated that the establishment of the required policies potentially easier if the university administration supported the idea of ETD programmes. The interviewees explained that decision-making goes through several stages and different committees before approval is given. Therefore, the delay in the decision-making process was perceived as a possible barrier to the adoption of ETD programmes in the Gulf States. These findings were consistent with the literature findings. According to Greig (2005), changing and updating university regulations and policies has been found to be a time-consuming and sometimes frustrating process. It involves lengthy discussions between libraries, academic departments, university administrators and computer service staff (Copeland et al., 2005; Russell, 2006). In addition, various studies have revealed that some universities did not have appropriate policies in place when opting to adopt an ETD programme. In India, for example, only twenty-two universities out of the sixty-five that responded had adopted policies to acquire theses in electronic format (Vijayakumar et al., 2007). Additionally, Bevilacqua (2007) found that most faculties' regulations at the University of Parma did not address the depositing of electronic copies of theses in the library when the university decided to adopt an ETD programme. In general, the nonexistence of appropriate policies considered as one of the main barriers to the adoption and development of ETD programmes in the Gulf States.

It is worth noting that almost one third of the survey respondents answered "not certain" to the questions related to the availability of policies. This confirmed the finding that interviewees' responses varied regarding the availability of appropriate policies. "Not certain" answers might reflect the fact that there were people at the universities who were not aware of the availability of the appropriate policies. In fact, several interviewees indicated that their universities did not have copyright policies, while documents collected from the same university indicated that such policies were already available (see Chapter 6, section

6.4.1.2.2 for more details). This indicates that there was a lack of promotional activities for raising awareness about the existence of certain policies.

8.4.5. Financial resources

With regard to financial resources, the majority of the research participants (both the interviewees and the survey respondents) indicated that the availability of financial support to be one of the major enablers to the adoption and development of ETD programmes in the Gulf States. The survey respondents also perceived and rated the lack of financial resources as the most significant barrier that could negatively affect the adoption of ETD programmes (Chapter 7, section 7.7). Allard (2003) stated that some of the institutions surveyed could not establish an ETD programme and others decided to withdraw from ETD programmes due to funding problems. The interviewees explained that the availability of sufficient funding (institutional factor) would allow the university to provide all the required resources, especially the technological infrastructure, such as scanners, storage devices, and security systems. About two-thirds of the survey respondents also indicated that the financial resources were adequately available at their institutions. This is influenced by a contextual factor since the Gulf States are categorised as have strong economies compared to other developing countries. In addition, the majority of respondents stated that the financial cost of the technological infrastructure for ETD programmes was not burdensome compared to its cost in the past. Based on these findings, availability of financial support was perceived as possibly be one of the major enablers to the adoption and development of ETD programmes in the Gulf States.

Nevertheless, about one third of the survey respondents and one interviewee indicated that financial resources were inadequately available. In addition, more than a third of the participants answered "not certain" to the question related to financial resources. Moreover, as outlined in the interview findings, a postgraduate officer at one institution indicated financial resources were inadequately available, while a technician at the same institution indicated that adequate financial resources were available. Such perceptions might reflect the fact that those participants did not have much understanding regarding the cost of adopting ETD programmes. They might have also thought that ETD programmes would need considerable financial resources that the institution could not afford. In addition, they may have had no knowledge of the financial resources available at their universities.

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8.4.6. Technological infrastructure

With regard to the technological infrastructure, the majority of the research participants (both the interviewees and the survey respondents) indicated that the availability of the appropriate technological infrastructure (institutional factor) would affect positively the adoption and development of ETD programmes in the Gulf States. For example, the interviewees explained that the availability of advanced scanners would facilitate and foster the scanning process of paper theses and dissertations. They also indicated that the availability of a proper security system and appropriate security procedures would facilitate the security process of the online theses and dissertations. In addition, the availability of sufficient storage space would facilitate the storage of all the electronic theses and dissertations. These findings highlight the influence of the availability of the technological infrastructure (institutional factor) on the perceived complexity of the technological processes. This relationship was not part of the preliminary framework, but was highlighted in the revised framework.

With regard to the availability of the appropriate technological infrastructure, the majority of the research participants (both the interviewees and the survey respondents) indicated that their universities had the necessary technological infrastructure to adopt ETD programmes. The interviewees explained that their universities were providing several electronic services that required proper technological infrastructure, such as e-journals, e-books and other online systems that required the proper technological infrastructure. These findings were consistent with the literature review. It has been found that academic institutions and university libraries generally already have the infrastructure required to establish ETD programmes, especially if they are already providing access to electronic journals or other digital documents (Bandara, 2008). A minority of the survey respondents and only a select few interviewees who had indicated that the technological infrastructure was inadequately available highlighted that their universities could easily provide the required infrastructure, especially if the university administration supported the adoption of these programmes. They also indicated that the cost of the technological requirements would not be burdensome. Therefore, the technological infrastructure was perceived as one of the enablers to the adoption and development of ETD programmes in the Gulf States.

8.4.7. Quantity of theses and dissertations

One of the issues that emerged from the research findings, which was not included in the preliminary framework was the quantity of theses and dissertations. The low number of theses and dissertations was perceived as a potential barrier to the adoption and development of ETD programmes in the Gulf States by several interviewees. These participants highlighted that the number of postgraduate students and theses were as yet not at the extent sufficient to warrant the adoption of an ETD programme. The reason given for the small volume of theses was the relative recency of the initiation of research programmes (contextual factor). For example, postgraduate programmes at Sultan Qaboos University started in the 1992/1993 academic year with only 35 students (Ministry of Higher Education, 2007). In addition, one academic explained that postgraduate programmes were not held in the same regard as undergraduate programmes given the limited number of postgraduate students compared to undergraduate students. For example, there were 9,119 registered students in all programmes at Qatar University, but only 199 were registered students for master's and PhD programmes in the 2010/2011 academic year (see Chapter 2, section 2.2). Another academic added that postgraduate programmes had been suspended for several years and resumed only in the last few years. For these reasons, these interviewees specifically, thought that the adoption of ETD programmes at that time would be ill-advised. Based on these reasons, it can be said that due to their newness the research programmes in the Gulf States are not mature. As a result of this newness and the low priority given to these programmes, the small quantity of theses and dissertations was perceived as a possible barrier to the adoption and development of ETD programmes in the Gulf States. Therefore, the issue of theses quantity was influenced by contextual factors, namely, the newness of research programmes in these states and the low priority given to them.

However, the majority of the survey respondents indicated that the limited number of theses and dissertations would not affect negatively the adoption of ETD programmes. This variance in the perceptions of interviewees and survey respondents could be reflective of the passage of time between conducting the interviews (in 2008) and distributing the survey (in 2010). This reflects the fact that the number of postgraduate programmes as well as the number of postgraduate students has increased over the last few years. This conclusion is supported by the statistics of postgraduate students in the Gulf universities. For example, there were 1,574

registered students for master's and PhD programmes in the 2005/2006 academic year at the Al-Imam Muhammad bin Saud Islamic University (IMAMU, 2006). However, this number increased to 4,711 registered students for master's and PhD programmes in the 2009/2010 academic year (see Chapter 2, section 2.2). Therefore, the number of postgraduate students was perceived and rated by the survey respondents as the least important factor with potential to negatively affect the adoption of ETD programmes in the Gulf States.

8.4.8. Summary

In summary, the availability of resources was perceived as the most influential factor that could affect either positively or negatively the adoption and development of ETD programmes in the Gulf States. The survey respondents perceived and rated the availability of administrative support and financial support as the top enablers to the adoption of these, followed by the availability of management decisions to adopt ETD programmes, qualified staff, project champion, technological infrastructure, and appropriate policies. Deficiencies in these respects were also perceived and rated as the most likely barriers to negatively affect the adoption of ETD programmes in the Gulf States. In addition, the availability of resources was perceived as influencing directly all of the other factors: the appreciation of the benefits, the technological factor, and concerns regarding ETD programmes. Moreover, the availability of the appropriate resources, such as copyright and plagiarism policies, was influenced by the newness of research programmes in the Gulf States (a contextual factor). These relationships were not included in the original framework, but were highlighted in the revised framework. The strong influence of the availability of the appropriate resources was highlighted in the revised framework, which was not part of the preliminary framework.

In general, from the research findings, the availability of qualified staff, especially project champions, was found to be insufficient and appropriate policies, especially policies governing legal issues, were found to be lacking. Thus, such deficiencies in the availability of these resources perceived as potentially a major barrier to the adoption of ETD programmes in the Gulf States. However, in terms of the financial resources and technological infrastructure, there seemed to be very little concern as there was adequate availability. Thus, the availability of these resources perceived as a potential main enabler to the adoption of ETD programmes in the Gulf States.

8.4.9. Groups' differences in perceptions

Conducting an analysis of variance test (*One Way Anova*) indicates that there were three questions, in which the perceptions of the five groups differed significantly with regard to the availability of the organisational and technological infrastructure. The results show that librarians and technicians were more supportive of the claim that the necessary infrastructure was already available. For example, librarians, more than the other groups, thought that the number of qualified staff available was adequate. This finding is consistent with the interview findings, in which library managers thought that their libraries had the appropriate skilled staff and technological infrastructure. Whenever the need arose, the library could seek assistance from the information technology departments or computer centres. In addition, librarians and technicians had greater knowledge about the required technological processes and the required staff than academic staff and postgraduate officers (the interview findings).

Additionally, academic staff were less supportive of the suggestion that academic staff should take the lead in promoting the idea of ETD programmes. Several academic staff explained that this role should be conducted by the university administration in conjunction with them (the interview findings).

Another significant difference between groups was identified in the question about making participation in ETD programmes compulsory. For this question, postgraduate students were less supportive of this suggestion compared to the other groups. This indicates that postgraduate students preferred participation in ETD programmes to be optional. Several interviewees (postgraduate students and academic staff) explained that there would be students who might believe their theses to be of a poor quality and, thus, would be hesitant in making their theses electronically available to everyone. It might also reflect their concerns about other legal issues, such as plagiarism, copyright restrictions or future publishing (the survey findings).

One of the findings revealed from questions concerning the availability of the appropriate infrastructure is that slightly more than one third of the survey respondents expressed uncertainty in this respect. This indicates that those respondents were not certain as to whether or not the appropriate policies, qualified staff, project champions, or sufficient funds were available. This could be due to the non-existence of promotional activities to inform the university community about the availability of the required resources. This is supported by

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the interview findings in which there were contradictions between interviewees within the same institution.

8.4.10. Recommendations

1. Training programmes should be conducted with existing staff, such as librarians and technicians in order to familiarise these persons with the technological processes of ETD programmes and, in turn, to deal with all the potential difficulties.

2. A project champion with a good understanding of ETD programmes should be appointed in order to promote ETD programmes within the university environment. The project champion should highlight the importance, benefits, and other issues related to these programmes, such as legal and technological issues. The project champion should target the entire university community, with focus on postgraduate students and academic staff. The university administration should also be targeted as early as possible in order to acquire more administrative support for these programmes.

3. Appropriate policies should be established and current policies should be updated to suit the needs of ETD programmes. These include copyright policies, online security policies, and policies asking students to submit electronic copies of their theses. In addition, plagiarism policies should be enforced in order to give postgraduate students more confidence about their participation in these programmes.

4. Universities should provide an advanced technological infrastructure, especially scanners and storage devices, in order for the technological processes to be conducted more quickly and easily.

8.5. Persuasive influence

The literature review highlights the positive influence of promotional activities in alleviating people's concerns regarding ETD programmes. As in the literature, the research findings highlighted the influence of promotional activities. Other persuasive factors, such as supervisors influence and current global trends in making research electronically available were also highlighted as possibly having a positive influence on the attitude of people towards ETD programmes.

8.5.1. Promotional activities

From the literature reviewed, the negative perceptions towards ETD programmes (see Chapter 3, section 3.3.1.2) mainly exist due to the absence of adequate promotional and advocacy work (Brown, 2010; Greig, 2005). The individuals concerned, especially postgraduate students and academic staff, should have full understanding of the importance of ETD programmes and all the related issues such as submission, copyright, plagiarism and prior publication (Berendt et al., 2003; Bogdanski & Copeland, 2009; Brown, 2010; Copeland & Penman, 2004; Greig, 2005; Horwood et al., 2004).

Like the literature findings, the research participants (both the interviewees and survey respondents) attributed great significance to the promotional activities in influencing the adoption of ETD programmes in the Gulf States. Promotional activities were seen as useful in different ways and were perceived as would strongly influence people's opinions about ETD programmes. Participants (both the interviewees and the survey respondents) generally perceived that promotional activities could help give the university community, including the university administration, academic staff, and postgraduate students a better understanding of ETD programmes and their benefits. Being aware of the personal and general benefits of these programmes was perceived as one of the factors that could motivate the university community to support the adoption of these programmes. Students and academic staff possibly be more willing to participate in these programmes once they had better knowledge about the benefits of these. The university administration would also be more motivated to support these programmes and take a decision to adopt these. These findings indicate that the availability of promotional activities (institutional factor) would possibly influence the appreciation of the benefits of ETD programmes. This appreciation of the benefits, as a result, was perceived as would possibly influence the establishment of appropriate policies (institutional factor).

In addition, promotional activities could help to reduce perceived concerns about legal issues, such as copyright and plagiarism. The survey findings revealed that more than half of respondents harboured significant concerns about legal issues. Therefore, making the university community (in particular academic staff and postgraduate students) aware of the possible legal issues and how the university is handling them could reduce concerns about these and, as a result, give students more confidence and motivation to participate in these

programmes. This finding indicates that promotional activities would possibly reduce concerns about legal issues, such as the plagiarism issue. This relationship was not part of the preliminary framework, but was highlighted in the revised framework.

In general, the majority of the survey respondents indicated that the availability of promotional activities potentially one of the main enablers to the adoption of ETD programmes in the Gulf States. However, the majority of the research participants (both the interviewees and the survey respondents) indicated that such activities were either not available or inadequately available at their universities. This is because some of the universities investigated had either not yet adopted an ETD programme or were at various stages of setting up their ETD programmes at the time of the study. One university were at the beginning stage of scanning theses and the other one were at the early planning stage, which includes developing policies and guidelines.

Nevertheless, the failure to conduct promotional activities would have a negative impact on motivation and support amongst the university community. The research participants explained that some people may possess insufficient knowledge regarding ETD programmes and the related legal issues. Thus, they might not appreciate the importance of adopting such programmes. In particular, people in the university administration would not support the adoption of these programmes if they were not convinced of their importance. Therefore, such insufficiency of promotional activities was perceived as potentially one of the major barriers with the potential to negatively affect the adoption and development of ETD programmes in the Gulf States. Moreover, about one third of the survey respondents were uncertain about the existence of promotional activities at their universities. These respondents were unsure as to whether these activities were underway at their universities or not. This might therefore mean that no activities were indeed underway. According to Greig (2005), the absence within the senior management of the University of Glasgow of a person responsible for informing and discussing the legal issues of concern to postgraduate students and academic staff was a barrier to the adoption and implementation of an ETD programme at the university.

8.5.2. Supervisors' and peers' influence

With regard to the influence of other persons on the research participants, the findings show that this was very positive. For example, academic staff indicated that they were already very

much convinced of the benefits and importance of ETD programmes and, as a result, intended to advise their students to participate in these (the interview findings). Only one academic indicated that he might advise his students to impose access restrictions on their theses if the author copyright was not protected and managed appropriately. This finding aligns with the literature review. The literature review reports incidents in which some academic advisors advised their students to restrict access to their theses and dissertations (McMillan, 2005). In general, this finding gives an indication that the influence of academic advisors will be positive and, thus, can be considered as a potential enabler to the adoption and development of ETD programmes in the Gulf States.

On the other hand, postgraduate students stated that no one could change their attitudes concerning ETD programmes, including their supervisors, as they were already highly convinced of their importance. These findings reinforce the claim that the appreciation of the benefits of ETD programmes to be a positive factor influencing the adoption of ETD programmes as such appreciation would motivate people about these programmes and, as a result, make them less likely to be negatively influenced by other people. Only less than a third of interviewees, including some students and academic staff, indicated that they might change their attitudes towards ETD programmes because of their weak understanding about these. This highlights the importance of conducting promotional activities in order to raise awareness amongst people about these programmes.

8.5.3. Current global trend

The majority of the research participants (both the interviewees and the survey respondents) indicated that the current global trend in making research electronically available and the widespread adoption of ETD programmes in different countries would motivate them to adopt these programmes. The interviewees explained that research outputs were already made electronically available on the internet in several forms, such as e-books, articles in e-journals and via ETD programmes. Therefore, they felt that the Gulf universities should follow this trend and adopt ETD programmes. The interviewees also explained that the adoption of ETD programmes in other countries would stimulate their own motivation and willingness to adopt the same programmes. The participants explained that they would stand to benefit from others' experience in that they potentially able to examine the steps undertaken by other universities in adopting these programmes and learn how to deal with the potential barriers,

such as concerns surrounding legal issues. Therefore, the current global trend and the adoption of ETD programmes in different countries were perceived as potentially one of the enablers to the adoption and development of these programmes in the Gulf States.

8.5.4. Groups' differences in perceptions

Analysis of variance test (*One Way Anova*) indicates significant differences were discernible between the five groups' perceptions related to the concerns regarding ETD programmes. The results show that postgraduate officers were less supportive of the idea that promotional activities would help to convince the high-level administration to adopt an ETD programme. Postgraduate officers interviewed in the first phase of this research explained that if the university library provided a comprehensive plan concerning ETD programmes, the university administration could then easily make a decision to adopt an ETD programme.

8.5.5. Recommendations

1. Two recommendations related to this section were highlighted earlier (see section 8.3.7). To add to the earlier recommendations, promotional activities should target the top-management individuals in order to attract greater administrative support to the adoption of these programmes. Academic staff and postgraduate students should also be targeted. In addition to highlighting the importance and benefits of these programmes, all potential issues such as copyright and plagiarism should be highlighted and explained in order to motivate the university community to support the adoption of these programmes.

2. Universities in the Gulf States should explore other universities' experience in dealing with ETD programmes in order to benefit from their experience in dealing with the various issues associated with these programmes.

8.6. Main enablers and barriers

In summary, the research findings revealed several enablers and barriers perceived as would influence the adoption and development of ETD programmes in the Gulf States. The perceived enablers and barriers were grouped under five main factors: appreciation of the benefits, technological factor, concerns regarding ETD programmes, availability of resources, and persuasive influence. Table 8.1 provides a summary of enablers and barriers as perceived

by the research participants (both the interviewees and the survey respondents). Issues that emerged from the research findings, and which were not included in the preliminary framework for analysis (see the preliminary framework in Chapter 4, section 4.3, Figure 4.2), are highlighted with shading.

Table 8.1: Summary of factors affecting the adoption of ETD programmes in the Gulf States

Main factors	Enablers	Perceived degree of influence	Barriers	Perceived degree of influence
Appreciation of benefits	Perception and appreciation of the benefits of ETD programmes	Major enabler		
Technological factor	Perceived easiness in the technological processes	Enabler	Technological processes were time consuming	Barrier
	Availability of technological infrastructure	Major enabler	Lack of online security policies and submission of electronic copies of theses policies	Major barrier
Concerns regarding ETD programmes	Using new technologies by younger people	Enabler	Uncertainty of using new technologies by older people	Barrier
	Obtaining copyright permission from current students	Enabler	Low quality of theses and dissertations	Barrier
			Obtaining copyright permission from past students	Barrier
			Concern of plagiarism	Barrier
			Copyright restriction	Barrier
			Future publishing	Barrier
Availability of resources	Availability of qualified staff	Enabler	Lack of project champions	Major barrier
	Availability of financial resources	Major enabler	Lack of administrative support	Major barrier
	Outsourcing to private companies	Enabler	Lack of appropriate policies	Major barrier
	Availability of technological infrastructure	Major Enabler	Quantity of theses and dissertations	Barrier
Persuasive influence	Research advisors' influence on students	Enabler	Lack of promotional activities	Major barrier
	Current global trend in adoption of ETD programmes	Enabler		
	Adoption of ETD programmes in other countries	Enabler		

Note. **Enabler:** perceived and rated as an enabler with weak or moderate influence
Major enabler: perceived and rated as an enabler with strong influence
Barrier: perceived and rated as a barrier with weak or moderate influence
Major barrier: perceived and rated as a barrier with strong influence (Chapter 7, section 7.7).

8.7. Personal perceptions, institutional factors and contextual factors

In summarising the research findings, these can be categorised under three levels found to affect the adoption and development of ETD programmes in the Gulf States. The three levels include personal perceptions, institutional factors and contextual factors. It was also highlighted that these three levels are interrelated. The participants' perceptions were mostly influenced by the contextual and institutional factors that existed at their institutions (see previous sections in this chapter). For example, with regard to the concerns surrounding ETD programmes, although less than a third of participants recognised these, they indicated that the existence of certain institutional factors would alleviate these issues. Such factors included copyright policies, plagiarism policies, and promotional activities. Respondents who expressed concerns explained that these were influenced by the non-existence of the appropriate policies and the poor enforcement of available policies. In addition, they indicated that the culture in the Gulf States also influenced their concerns regarding plagiarism. The respondents explained that people in these states are of the understanding that information made publically available can be used freely without restriction. Thus, this contextual factor influenced participants' perceptions regarding plagiarism. In addition, the research participants indicated that the technological processes could be conducted easily since the required resources were available. They also indicated that these processes possibly be conducted much more easily once the necessary resources were provided. Such institutional resources included appropriate policies, financial resources, qualified staff, and appropriate technological infrastructure. Furthermore, as in one of the research sites, the university administration was seen to be urging library staff to adopt new ideas and provide new services to users (see Chapter 6, section 6.4.1.1.1). The following table highlights these three levels and the perceived relationships between them.

Table 8.2: The influence of contextual factors on institutional factors followed by the influence of institutional factors on personal perceptions

Contextual factors	Institutional factors	Personal perceptions
Misunderstanding (can also be the case of lack of understanding) plagiarism		Concerns regarding plagiarism
Recency of research programmes	Small number of research students	Concerns regarding the quantity of theses
	Less experience with research	Concerns regarding the quality of theses
	Lack of the appropriate policies, such as copyright and plagiarisms policies	Concerns regarding copyright and plagiarisms
	Lack of promotional activities and lack of project champions	Hinder establishment of the appropriate policies, lack of awareness of ETD benefits, delay in the establishment of the appropriate policies, delay in obtaining the necessary resources
Strong economy (The Gulf States have strong economies)	Availability of financial resources at the academic institution	Alleviate concerns regarding obtaining the necessary resources
	Availability of advanced scanners	Alleviate concerns regarding scanning paper theses
	Availability of security policies	Alleviate concerns regarding thesis security
	Availability of storage devices	Alleviate concerns regarding long-term preservation
Younger societies (people grow up using new technologies)	Adoption of other E-services at the academic institutions	Alleviate uncertainty of new technologies Perceiving personal benefits Alleviate concerns regarding the complexity of technological processes Motivate adoption of ETD programmes

8.8. Propositions of consequences

Based on the research findings, it has also been found that the five main factors are not independent and that some factors have an influence on others. Previous sections have highlighted the emerging relationships between factors. These relationships were not part of the preliminary framework, but they were highlighted in the revised framework. However, the revised framework does not illustrate all of the relationships, and attention is drawn only

to the major relationships between the five factors. Table 8.3 summarises all of these relationships as propositions.

Table 8.3: The emerging propositions of consequences

Factors	Propositions
Appreciation of the benefits	1. The appreciation of the benefits helps to foster the establishment of copyright and plagiarism policies as well as the decision to adopt ETD programmes.
	2. The attitudes of those with a greater appreciation of the benefits are less likely to be influenced by others.
	3. The appreciation of the benefits of ETD programmes helps to reduce people's resistance to their adoption.
	4. People who have a greater appreciation of the benefits of ETD programmes are less likely to harbour concerns regarding issues of plagiarism.
	5. The appreciation of the benefits of ETD programmes is more likely to facilitate the process of obtaining copyright permission from postgraduate students.
	6. The more appreciation postgraduate students have of the benefits, the less likely it is that they will be deterred from participating in ETD programmes due to the complexity of the technological processes.
Concerns regarding ETD programmes	7. The existence of promotional activities is more likely to reduce people's concerns surrounding legal issues, such as plagiarism and copyright.
	8. Due to the recent establishment of postgraduate programmes in the Gulf States, academic staff had less experience in research and as a result theses are low in quality.
	9. Conducting promotional activities among postgraduate students is more likely to diminish their concerns about copyright restrictions and future publishing issues.
	10. The availability of appropriate technological infrastructure, such as advanced scanners and greater storage space is more likely to simplify the scanning process and long-term preservation of electronic theses.
	11. The availability of a sufficient number of qualified staff is more likely to make conducting the technological processes much easier and faster.
	12. The existence of appropriate policies concerning thesis security is more likely to facilitate the provision of online security for ETD programmes.
	13. The existence of appropriate copyright policies is more likely to decrease concerns about plagiarism issues.
	14. The existence of appropriate copyright policies is more likely to facilitate the process of obtaining copyright permission from students.

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Factors	Propositions
Availability of resources	15. A project champion could play an important role in increasing the motivation of postgraduate students and the university administration in order to support the adoption of ETD programmes.
	16. A project champion could play an important role in raising students' awareness and appreciation of the benefits of ETD programmes.
	17. Due to the recent establishment of postgraduate programmes in the Gulf States, number of postgraduate programmes students were limited and as a result theses are low in quantity.
	18. Due to the recent establishment of postgraduate programmes in the Gulf States, the appropriate copyright and plagiarism policies were lacking.
Persuasive influence	19. The existence of promotional activities is more likely to have a positive influence on people's appreciation of the benefits of ETD programmes.
	20. Conducting promotional activities among the university administration is more likely to motivate the university administration to make a decision to adopt these programmes.

8.9. Summary

In summary, the combined research findings highlight several enablers and barriers perceived to possibly influence the adoption and development of ETD programmes in the Gulf States. The discussions of these possible enablers and barriers were also supported by several recommendations to overcome the perceived barriers and enhance the perceived enablers. These findings answered the main research questions. The perceived enablers and barriers were summarised in section 8.6 (see table 8.1). The integrated findings also pointed towards the revision of the preliminary framework. The revised framework highlights the three levels of factors and is outlined in the following chapter (see Chapter 9, section 9.2, Figure 9.1), which also provides a conclusion and highlights the significance of this research.

It is also worth noting that the research findings were, in general, in alignment with the literature review. Perceptions of the participants were quite similar to the perceptions of people in other countries. As initially discussed earlier (see section 8.1), this relative similarity in opinions could be attributed to several reasons. Firstly, the revolution of the internet and the heavy use of E-resources from the internet have made people in the Gulf States and other countries reasonably aware of ETD programmes. Secondly, due to the multinational structure of the academic institutions in these states, many of the individuals at

these institutions originate from countries that are already in the process of adopting these programmes. A number of the respondents had come from universities or had studied at universities that had already adopted such programmes. Academic institutions in the Gulf States send academic staff to other countries, in particular western countries, to pursue their higher studies. Thirdly, since academic institutions in the Gulf States were already providing several electronic services, these institutions were already equipped with the basic technological infrastructure quite commonly found at academic institutions in other countries. Nevertheless, the research findings highlighted a number of issues that were unique to the Gulf States. For example, the research participants expressed the idea that research in the Arabic language would for the first time become easily accessible through the internet through the adoption of ETD programmes. Findings also indicated that due to the recent establishment of research programmes in the Gulf States, there were concerns regarding the quality and the quantity of theses and dissertations. Another contextual issue related to the lack of understanding of plagiarism issues. According to a very few of research participants, people in the Gulf States believe that copying without referencing is legal. Therefore, a number of research participants harboured concerns regarding plagiarism owing to such beliefs.

CHAPTER NINE: CONCLUSION

This chapter summarises the major findings of both phases of this research (qualitative and quantitative). This is followed by a discussion of the revised framework, highlighting the significance of the study, recommendations for further research, and the research conclusion.

9.1. Summary of the research

There is limited published literature on the adoption and development of new technology in academic institutions in the Gulf States. More specifically, there is a lack of understanding of the enablers and barriers to the adoption and development of ETD programmes in university libraries in the Gulf States. Understanding these factors could contribute to the successful adoption and development of ETD programmes in university libraries in the Gulf States.

This study explored the potential enablers and barriers influencing the adoption and development of ETD programmes in the Gulf States. The research also developed a contextual framework for mapping the factors influencing the adoption and development of ETD programmes in the Gulf States.

Based on the research problem and the purpose statement the research answered the following main questions:

1. What are the perceived enablers that could influence the adoption and development of ETD programmes in the Gulf States?

2. What are the perceived barriers that could influence the adoption and development of ETD programmes in the Gulf States?

This research utilised a combination of qualitative and quantitative research methods to answer the research questions. The primary qualitative phase helped to understand, in great depth, the factors affecting the adoption and development of ETD programmes in the Gulf States. Face-to-face interviews were conducted in conjunction with the analysis of relevant documents. Interviews covered the key informants in positions relevant to ETD programmes, which included postgraduate students, library managers, system administrators, postgraduate

officers and academic staff. Forty-five key informants were interviewed from five universities in the Gulf States (Chapter 5, section 5.3.3).

The second phase of this research used a quantitative methodology (online questionnaires). The survey tested and explored, in a larger sample, the identified issues in the interviews. Three hundred and nine respondents from four universities in the Gulf States completed this online survey (Chapter 5, section 5.4.3). The results of the survey were used to find out if the results contradicted, confirmed or complemented the findings of the research interviews. In addition, the research questionnaire tested and explored further, in a larger sample, the possible differences in perceptions between the five groups of key informants.

Overall, the interview findings, with confirmation from the survey findings, revealed several possible enablers and barriers perceived as could influence the adoption and development of ETD programmes in the Gulf States (see Chapter 8). These potential enablers and barriers were analysed in Chapters Six (qualitatively) and Seven (quantitatively) and discussed in Chapter Eight. The perceived enablers and barriers were grouped under five main factors: appreciation of the benefits, technological factor, concerns regarding ETD programmes, availability of resources, and the persuasive influence (see Chapter 8, section 8.6).

9.2. The contextual framework

Based on the analysis and discussions of the interview and the survey findings (Chapter 6, Chapter 7, and Chapter 8), the original framework for analysis (Chapter 4, section 4.3, Figure 4.2) was revised and the revised framework maps the identified enablers and barriers that have been understood to be influencing the adoption and development of ETD programmes in the Gulf States (Figure 9.1). These possible enablers and barriers are categorised under three main categories (contextual factors, institutional factors and personal perceptions).

The preliminary framework presented in Chapter Four highlighted a number of enablers and barriers to the adoption and development of ETD programmes. However, based on the research findings, several more barriers emerged that had not been outlined in the preliminary research framework. These include concerns surrounding the perceived quality of theses and dissertations and the quantity of theses and dissertations, which were perceived due to the newness of research programmes in the Gulf States. In addition, ETD programmes were perceived as increasing the currently limited availability of Arabic research on the internet.

Moreover, as these states have strong economies, academic institutions were mostly equipped with the required technological infrastructure. In addition, the preliminary framework did not include any kind of influence between the five factors. However, the current research findings revealed that these five factors (which can also be categorised under three main categories) were not independent and that some factors have an influence on the others. These relationships were reflected in the revised framework and summarised in a form of propositions in Chapter Eight (see Chapter 8, section 8.8). The preliminary framework also did not indicate which factor was the most influential, while the revised framework shows that the contextual factors were found to be influencing the institutional factors and the personal perceptions. The preliminary framework was revised and the emerged enablers and barriers were added to the revised framework. The influences that spanned the three levels were also highlighted. The revised framework is intended to be used to guide and to assist universities and academic institutions in the Gulf States in adopting and developing ETD programmes, in order to ensure success in these respects.

Figure 9.1: A framework of the factors that are likely to influence the adoption and development of ETD programmes based on the research findings

Note. This means that this factor has an influence on the other factors.
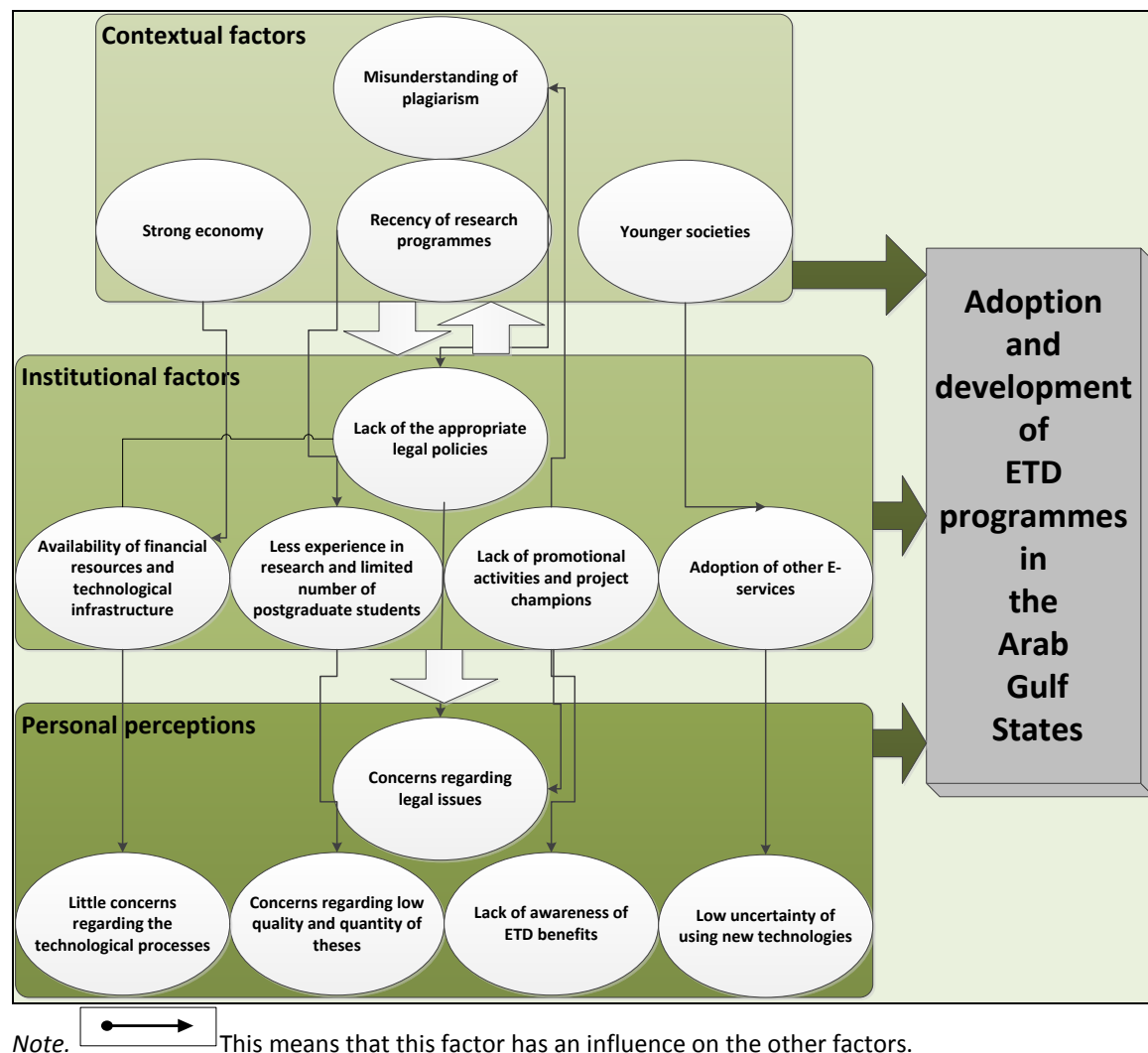
9.3. Contributions of the research

This section highlights the contributions of this research to existing knowledge on the adoption and development of ETD programmes. Contributions to theories and to practice are discussed.

9.3.1. Contributions to theories

There has been no previous framework developed identifying the factors affecting the adoption and development of ETD programmes in the Gulf States. In addition, there is a lack of understanding of the enablers and barriers to the adoption and development of ETD programmes in the Gulf States. As an increasing number of universities in the Gulf States are

now exploring and looking into the implementation of ETD programmes, an understanding of these factors could contribute to the successful adoption and development of these programmes. This study was the first to investigate all of the possible issues influencing the adoption of ETD programmes in the Gulf States. Previous research and studies in other countries have investigated these issues separately (Allard, 2003; Andrew, 2004b; Bakelli & Benrahmoun, 2003; Chikonzo, 2009, Coles & Johnson, 2010; Fletcher, 2009; Jewell, 2009; Kahn, 2010; McCutcheon, 2010; Ramirez & McMillan, 2010). This research identified a number of additional barriers that were not included in the preliminary research framework. These include concerns about the perceived quality of theses and dissertations and the quantity of theses and dissertations. Thus, the contextual framework of this study may provide a suitable foundation for other research on this topic in the Gulf States and may also be useful for investigation of the topic in other countries.

The main contribution of this research was the development of a contextual framework to map factors affecting the adoption and development of ETD programmes in the Gulf States (Figure 9.1). This framework highlighted the need for all of the factors to be taken into account when planning for the adoption of ETD programmes. The detailed research findings also revealed that these factors were interdependent and impacted on one another. In particular, this research made explicit the perceived enablers and barriers to the adoption and development of ETD programmes in the Gulf States. In addition, the research findings indicated that the availability of resources factor was the most influential and influenced all of the other factors. This factor was mainly influenced by a contextual factor (the recent establishment of research programmes in the Gulf States).

9.3.2. Contributions to practice

In a practical sense, this study provided a better understanding of the factors that would possibly affect the adoption and development of ETD programmes in the Gulf States. As the first research into this topic in the Gulf States, this study provided new information on the factors that would affect the adoption and development of ETD programmes in these states. As highlighted earlier, there is a lack of understanding of the enablers and barriers to the adoption and development of ETD programmes in the Gulf States. At the same time, according to the interview findings, an increasing number of universities in the Gulf States are now exploring and looking into implementing ETD programmes. Currently, there are

more than eighty-five colleges and universities in the Gulf States that provide master's and PhD programmes and only a few of these universities have adopted ETD programmes. Due to all of these conditions, conducting this exploratory research was crucial in the Gulf States. Therefore, an understanding of the factors affecting the adoption and development of ETD programmes in the Gulf States could motivate academic institutions in these states to adopt these programmes and contribute to their ongoing development.

To date, neither qualitative nor quantitative research has been undertaken in the Gulf States to explore the enablers and barriers to the adoption and development of ETD programmes. What also made this study unique is that the discussion of the influencing factors was interpreted in relation to the social and contextual issues the participants encountered. The research findings highlighted new issues found that could possibly influence the adoption and development of ETD programmes in the Gulf States that were not identified in the literature review. These include concerns surrounding the perceived quality of theses and dissertations and the quantity of theses and dissertations, the appreciation of the benefit of obtaining access to Arabic research and the strong economies of the Gulf States. These issues were attributed to the unique nature of the Gulf States. For example, postgraduate programmes were introduced only recently, mainly in the mid-1990s, and the numbers of postgraduate students were very limited compared to undergraduate students. In addition, due to the recency of the initiation of postgraduate programmes in these states and the limited experience in conducting research among academic staff and postgraduate students, some participants perceived the theses and dissertations submitted to be of poor quality. Thus, it was believed that the quantity and quality of theses and dissertations were factors instrumental in delaying the adoption of ETD programmes in the Gulf States.

In addition, several legal issues seem to have an influence on the adoption of ETD programmes in the Gulf States. For example, concerns surrounding plagiarism were perceived as would negatively influence the adoption of ETD programmes by several participants. Although concerns such as these were also highlighted in the literature review (Copeland et al., 2005; Evans, 2006; Gadd et al., 2007; Greig, 2005; Narang et al., 2005; Satyanarayana & Babu, 2007; Stanton, 2010), these were viewed differently in the Gulf States. It was believed that concerns surrounding plagiarism were greater in these states than in other countries due to misunderstandings regarding the legality of the practice. This finding reveals that people in these states are unfamiliar with the precise meaning of

plagiarism and, thus, require further promotional activities in order to raise their awareness of legal issues including plagiarism.

Moreover, one of the ETD benefits perceived by the research participants, which was exclusive to Arab countries, was that through adoption of ETD programmes Arabic research would become easily accessible through the internet. As several research participants claimed that there was a lack of research in the Arabic language available on the internet, the adoption of ETD programmes, as a result, would address this problem. Thus, this study made explicit the factors affecting the adoption and development of ETD programmes in the context of the Gulf States. Understanding these issues within the context of these states will increase the likelihood of the successful adoption of ETD programmes.

The outcome of this research is expected to be beneficial to different groups in the Gulf States. The first group are academic institutions interested in the adoption of ETD programmes. The findings of this research, as well as the recommendations, will help academic institutions plan for the future and make informed investment decisions about adopting and maintaining ETD programmes. In particular, the recommendations included in the previous chapter indicate specific actions academic institutions in the Gulf States can take to overcome the perceived barriers and enhance the perceived enablers, which will boost the chances of success in adopting and developing ETD programmes. In fact, several managers, administrators, and officers the researcher interviewed, asked for a copy of this thesis in order to familiarise themselves with the influencing factors that would possibly affect the adoption and development of ETD programmes. This research aimed to make its findings and recommendations available to all the above groups. By understanding the various factors and considering the provided recommendations they would be able to plan for the adoption of these programmes while keeping these factors in mind. This should lead to greater success in the adoption and development of ETD programmes in the Gulf States. As has been reported in the literature review (Chapter 3, section 3.4), several ETD projects in the USA and Scotland failed due to the constraints on the appropriate resources, such as financial resources and project champions (Allard, 2003; Greig, 2005). Therefore, considering the perceived enablers and barriers and taking into account the recommendations should help academic institutions and universities in the Gulf States in identifying potential risks to avoid the possibility of failure in the adoption and development of these programmes.

The second group is postgraduate students and academic staff who are normally required to submit their theses and dissertations to their universities. As discussed in the literature, the successful adoption of ETD programmes depends on the participation of students and academic staff. In addition, the literature, with confirmation from the research findings, reveals that academic staff and students have concerns about legal issues, such as copyright, plagiarism, and future publishing. Moreover, the research participants (the interviewees and the survey respondents) provided several suggestions that they perceived could overcome their concerns about these legal issues (see Chapter 8, section 8.3.3). Therefore, project champions, who are responsible for introducing and developing ETD programmes, can make use of the research findings and recommendations to help in promoting the adoption of these programmes among students and academic staff. Academic staff and students need to be aware of the kind of issues they can expect from making their theses electronically available on the internet. In addition, they need to be informed about the actions and policies their institutions have implemented in order to allay concerns regarding legal issues.

The research findings are not only useful for the Gulf States in particular, but may also benefit other Arab and developing countries. As the environment in the Gulf States may be similar to other Arab and developing countries, the research findings may be useful in these countries too. Aladwani (2003) stated that Arab countries share many commonalities, including religion, language, customs and values, and history.

In addition, the findings of this research are not only beneficial with regard to the adoption of ETD programmes, they may also be useful in understanding the factors affecting the adoption of other similar projects, such as institutional repositories, online publishing, digital libraries, and other open access projects. Fox, Yang, and Kim (2006) discussed several technological issues, such as content, format, and metadata that they held to be similar between digital libraries and ETD programmes. Secondly, ETD programmes are part of main projects, which are institutional repositories (Shin, 2006; Yeates, 2003). Therefore, these projects may share similarities with regard to technological and legal issues.

Moreover, the study was a response to the lack of literature concerning the factors affecting the adoption and development of ETD programmes in the Gulf States. Therefore, the research findings contribute new knowledge to the ETD programmes literature in the Gulf States in particular and other countries in general.

Furthermore, there has been an extensive review of the literature with regard to the factors influencing the adoption and development of ETD programmes. Chapter Three provides reference to updated articles, research papers, theses and dissertations in the field of ETD programmes. These materials were updated to March 2012. Thus, this study will contribute to the existing knowledge and serve as a useful reference on the influencing factors affecting the adoption and development of ETD programmes.

9.4. Identified avenues for further research

This was the first research to investigate, in-depth, the factors affecting the adoption and development of ETD programmes in the Gulf States. The research elicited the perceptions of five groups: academic staff, librarians, postgraduate officers, postgraduate students, and technicians (see Chapter 5, section 5.3.3.2). However, there are other stakeholders in the broader context. For example, there is a need to study publishers' points of view about these programmes in the Gulf States. The literature shows that publishers have no obvious objection to electronic theses and dissertations. Bevan (2005) concluded his study by stating that publishers rarely refuse publication of an article based on the online availability of the thesis or dissertation. Therefore, it seems clear that publishers do appreciate the availability of ETD on the web and do not view these as prior publications (Barwick, 2007; Seamans, 2003). For this research, due to the scope of this study, publishers were not included in the sample population. Further research on the possible issues and factors related to publishers and the publishing industry that may impact the development of ETD programmes would be useful. Emphasis should be given to the assessment of publishers' views about ETD programmes and the possibility of publishing students' papers, which are written from their electronic theses and dissertations. Knowing publishers' perceptions about ETD programmes would help widen the understanding of the factors affecting the adoption and development of ETD programmes in the Gulf States. It would also allow project champions to advise academic staff and postgraduate students on publishers' views concerning ETD programmes.

The research findings indicate that there were some factors that had an influence on the other factors. However, due to the exploratory design of this research, the degree of the influence between these factors has not been statistically tested in this research. The online survey aimed to test and explore, in a larger sample, the identified issues in the interviews. The results of the survey were used to find out if the results contradicted, confirmed or

complemented the findings of the research interviews. The second quantitative phase did not test hypotheses. Thus, this research recommends further quantitative investigation on the degree of influence between these factors. Knowing the interrelationships and the degree of influence between these factors provides better understanding of the factors influencing the adoption of ETD programmes.

The findings identified that postgraduate students had concerns about legal issues, such as copyright issues, copyright restrictions, plagiarism, and future publishing issues. However, the study did not statistically investigate the factors that might influence these perceptions, such as age, gender, online searching skills, and other social and cultural factors. For example, with regard to the gender factor, the researcher was not able to interview female students in some universities due to the regulations of these institutions (see Chapter 5, section 5.5). Therefore, this study recommends further quantitative investigation on postgraduate students' perceptions about these issues. Knowing that these factors might influence students concerns about these legal issues could help project champions to deal with these concerns appropriately.

The findings also revealed that the research participants (both the interviewees and the survey respondents) thought that older staff might be more resistant to the use of new technologies than younger staff. However, the online survey did not ask the respondents about their age in order to determine if this resistance to the use of new technologies increases with age. Therefore, this study recommends further investigation on older staff's resistance and younger staff's enthusiasm with regard to the use of new technologies. Understanding factors that contribute to their resistance could provide insights for promotional programmes targeted at older staff.

Finally, this research should be expanded to include other universities and academic institutions in the Gulf States in order to elicit a more comprehensive picture of the factors influencing the adoption and development of ETD programmes in the Gulf States. This study gave priority to government universities. Government universities in the Gulf States were chosen as they tend to be well established, large, more stable, and tend to have more experience with postgraduate programmes. However, ETD programmes can be adopted in other institutions, such as smaller academic institutions and in national libraries. Therefore, this research recommends further investigation of the factors influencing the adoption of ETD programmes within different institutions, such as small universities, private universities,

public libraries and other academic institutions. The literature shows that smaller institutions might find it difficult to adopt ETD programmes independently. Shin (2006), identified funding as a factor affecting the adoption and development of ETD programmes in South Korea, where many colleges and universities have local repositories for ETD. Therefore, carrying out this research on different types of institution in the Gulf States would provide a comprehensive picture and greater insight into the factors influencing the adoption and development of ETD programmes in these states. In addition, such investigations would allow a comparison between different types and sizes of institutions in the Gulf States.

9.5. Conclusion

The problem investigated in this research was the lack of understanding of the enablers and barriers to the adoption and development of ETD programmes in university libraries in the Gulf States. Understanding these factors could contribute to the successful adoption and development of ETD programmes in the Gulf States. To address the research problem, this study explored the perceived enablers and barriers that could influence the adoption and development of ETD programmes in the Gulf States.

This research used both qualitative and quantitative methods. The initial phase was exploratory, using qualitative methodology (interviews). This phase generated deep insight into the factors influencing the adoption and development of ETD programmes in the Gulf States. The second phase of this research used a quantitative method (online survey). The survey findings complimented the interview findings and provided external validity for the research findings.

The research findings are presented in a contextual framework that maps the factors influencing the adoption and development of ETD programmes in the Gulf States, which will help to guide the adoption and development of these programmes in these states. The factors identified in the framework can be applied to other institutions with similar backgrounds.

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APPENDICES

10.1. Appendix A: The research interviews

This includes:

- Consent to participation in research.

- Information sheet.

- Authority to undertake research in your institution.

- The interview guideline.

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wānanga o te Ūpoko o te Ika a Māui

SCHOOL OF INFORMATION MANAGEMENT

CONSENT TO PARTICIPATION IN RESEARCH

Project title: **Electronic Theses and Dissertations Programmes in the Gulf States: Exploring the factors affecting the adoption and development of these programmes**

Please tick as appropriate to indicate agreement:

- ☐ I have been provided with an explanation of this research project. I have had an opportunity to ask questions and have them answered to my satisfaction.

- ☐ I understand that any information I provide will be kept confidential to the researcher and his supervisors.

- ☐ I understand that I am free to withdraw from this project without explanation anytime before 30 December 2008 and that in case I opt to withdraw the information provided will be withdrawn from the research.

- ☐ I understand that the published results will not use my name, and that no opinions will be attributed to me in reports or publications based on this research.

- ☐ I would like to receive a summary of the results of this research when it is completed.

- ☐ I understand that the interview will be recorded and all raw data will be destroyed 2 years after the conclusion of this research.

- ☐ I understand that interview transcript will be returned to me for checking.

- ☐ I understand that data will be used as part of a PhD thesis, which will be deposited in the VUW institutional repository.

- ☐ I agree to be contacted by phone if further questions are required.

- ☐ I understand that my institution has agreed to take part in this research.

- ☐ I agree to take part in this research[1].

Signed: …………………………………………………………………………..

Name of participants: ……………………………………………….…………..

Email address if you wish to receive a summary of the findings and for the interview transcript checking: ………………………….…………………………….…………

Phone number: ……………………………………………………………..…………

Please state date and time for conducting the interview: ………………………….

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[1] For any further information or explanation, please feel free to contact Jamal Alsalmi on +96896455025 or via email at: alsalmij@hotmail.com ,or my supervisors: Prof Gary Gorman on +6444635782 or via email at: Gary.Gorman@vuw.ac.nz and Dr. Chern Li Liew on +6444635213 or via email at Chernli.Liew@vuw.ac.nz

SCHOOL OF INFORMATION MANAGEMENT

INFORMATION SHEET

<u>Project title:</u> **Electronic Theses and Dissertations Programmes in the Gulf States: Exploring the factors affecting the adoption and development of these programmes**

I am a PhD student at Victoria University of Wellington (VUW) in the School of Information Management (SIM), New Zealand. I also work as a lecturer at Sultan Qaboos University in the department of Library and Information Science, Muscat, Sultanate of Oman. My study seeks to contribute to the understanding of the influencing factors affecting the adoption and development of Electronic Theses and Dissertation (ETD) programmes in university libraries in the Gulf States. It is hoped that understanding these influencing factors will help to increase the chances for the successful adoption and development of ETD programmes in university libraries in the Gulf States.

The study has been approved by the VUW SIM Human Ethics Committee. All raw data will be kept confidential to the researcher and the two supervisors: Prof. Gary Gorman and Dr. Chern Li Liew. Throughout the project, raw data will be kept under password and/or lock protection and destroyed two years after the conclusion of the project. Any information and opinions gathered from you will not be attributed to you personally. You are free to withdraw from the study without any explanation by 30 December 2008. In case you opt to withdraw, all the information provided will be withdrawn from the study. A summary of the key findings will be provided to you and all other research participants upon request. Interview transcripts, in addition, will be returned to you for checking. In some cases, I might contact you by phone for further clarification.

Data will be gathered by interviewing people involved in ETD programmes in universities. Informants may include postgraduate students, academic staff, library managers, system administrators and managers, and postgraduate officers. The interviews, which will be recorded, will deal with general questions about the influencing factors affecting the adoption and development of ETD programmes in university libraries in the Gulf States. It is expected that the interview will take about 30to 40 minutes. The insights gained will be used as part of my PhD thesis, which will be deposited in the VUW institutional repository on completion. In addition, research findings may be published in academic or professional journals and presented at international conferences.

The consent form is attached. It includes a request for permission to tape-record interviews. If you agree to participate, please complete the form, sign and return it to me. Please note that your institution has agreed to take part in this research.

Thank you for your time and cooperation.

Jamal Alsalmi

Mobile phone: +96896455025

Email: alsalmij@hotmail.com

SCHOOL OF INFORMATION MANAGEMENT

AUTHORITY TO UNDERTAKE RESEARCH IN YOUR INSTITUTION

Dear Sir/Madam,

I am a PhD student at Victoria University of Wellington (VUW) in the School of Information Management (SIM), New Zealand. I also work as a lecturer at Sultan Qaboos University in the department of Library and Information Science, Muscat, Sultanate of Oman. As part of my PhD research, I have selected your institution to participate in my research. The research title: "**Electronic Theses and Dissertations Programmes in the Gulf States: Exploring the factors affecting the adoption and development of these programmes**".

My study seeks to contribute to the understanding of the influencing factors affecting the adoption and development of Electronic Theses and Dissertation (ETD) programmes in university libraries in the Gulf States. It is hoped that understanding these influencing factors will help to increase the chances for the successful adoption and development of ETD programmes in university libraries in the Gulf States.

The study has been approved by the VUW SIM Human Ethics Committee. All raw data will be kept confidential to the researcher and the two supervisors: Prof. Gary Gorman and Dr. Chern Li Liew. Throughout the project, raw data will be kept under password and/or lock protection and destroyed two years after the conclusion of the project. Any information and opinions gathered from members of your institution will not be attributed to them personally. However, your institution's name might be identifiable in future publications of the research findings. You are free to withdraw from the study without any explanation by 30 December 2008. In case you opt to withdraw, all the information provided will be withdrawn from the study. A summary of the key findings will be provided to you and all other research participants upon request.

Data will be gathered by collecting relevant documents and interviewing people involved in ETD programmes in universities. Participants may include postgraduate students, academic staff, library managers, system administrators and managers, and postgraduate officers. The interviews will deal with general questions about the influencing factors affecting the adoption and development of ETD programmes in university libraries in the Gulf States (attached interview guideline). Documents to be collected will include policies of theses and dissertations acquisition and maintenance, theses statistics, postgraduate students' statistics and other relevant information related to the development of ETD programmes. The insights gained will be used as part of my PhD thesis, which will be deposited in the VUW library on completion. In addition, research findings may be published in academic or professional journals and presented at international conferences.

The purpose of this letter is, therefore, to seek your authority to carry out this research in your institution.

Thank you for your time and cooperation.

Jamal Alsalmi

Mobile phone: +96896455025

Email: alsalmij@hotmail.com, jamal.alsalmi@vuw.ac.nz

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INTERVIEW GUIDELINE

1. Appreciation of the benefits

Q1: To what extent does the expectation of the benefits of ETD programmes have an effect on the adoption and development of these programmes?

a) To what extent do the involved groups in ETD programmes such as academic staff, library managers, system administrators and managers, and postgraduate officers perceive the benefits of ETD programmes?

b) How does the expectation of these benefits have an effect on their decision to adopt and develop these programmes?

2. Technological factor

Q2: To what extent does the expected complexity of the processes involved in the adoption and development of ETD programmes have an effect on the adoption and development of these programmes?

a) To what extent do the involved groups in ETD programmes perceive any complexity (or simplicity) in the processes involved in the adoption and development of ETD programmes?

b) How does the expected complexity (or simplicity) of these processes have an effect on their decision to adopt and develop these programmes?

c) To what extent does the regulation changes perceived as an easy (or hard) task?

d) To what extent do the involved groups perceive the legal issues associate with ETD programmes?

e) To what extent does the expectation of the risk of legal issues have an effect on their decision to adopt and develop these programmes?

3. Concerns regarding ETD programmes

Q3: To what extent does the presence of a project champion (either a person or a team) have any influence on individuals' attitudes toward the adoption and development of ETD programmes?

a) To what extent does the existence (or absence) of advocacy and promotional activities that are designed in your university to advertise ETD programmes among the university community have an influence on the university community?

b) To what extent does the presence (or absence) of a project champion to take the lead at the relevant committees and is likely to have the power to push through the necessary changes in the regulations in order to adopt and develop ETD programmes have any effect on the regulation changes?

SCHOOL OF INFORMATION MANAGEMENT

e) How does the presence (or absence) of a project champion have any influence on individuals' attitudes toward the adoption and development of ETD programmes?

4. Availability of resources

Q4: To what extent does the availability of the organizational and technical infrastructure required to adopt and develop ETD programmes have an effect on the adoption and development of these programmes?

a) To what extent does the university have the appropriate policies needed to facilitate the adoption and development of ETD programmes?

b) How does the absence (or existence) of such policies have an influence on the adoption and development of these programmes?

c) To what extent does the university have the required infrastructure to adopt and develop ETD programmes?

d) How does the availability (or lack) of the organizational and technical infrastructure required have an effect on the adoption and development of these programmes?

e) To what extent does the university have the enough funds available to adopt and develop ETD programmes?

f) How does the availability (or lack) of such fund have an influence on the adoption and development of these programmes?

g) To what extent does the university have the enough staff allocated to deal with the processes involved in the adoption and development of ETD programmes?

h) How does the availability (or lack) of such staff have an influence on the adoption and development of these programmes?

5. Cultural Influence:

Q5: How do national value systems affect the adoption and development of ETD programmes in the Gulf States?

10.2. Appendix B: The research survey

This includes:

- Permission to undertake research in your institution.

- Information sheet for participants.

SCHOOL OF INFORMATION MANAGEMENT

The research title:

Electronic Theses and Dissertations Programmes in the Gulf States: Exploring the factors affecting the adoption and development of these programmes

PERMISSION TO UNDERTAKE RESEARCH IN YOUR INSTITUTION

Dear Sir/Madam,

Thank you very much for giving me the permission to conduct some interviews at your university in October 2008. I am doing research for a PhD degree at Victoria University of Wellington (VUW) in the School of Information Management (SIM), New Zealand. I also work as a lecturer at Sultan Qaboos University in the Department of Library and Information Science, Sultanate of Oman.

I am now moving to the next phase of my research which involves an online questionnaire to key informants. My target participants include postgraduate students (Master and PhD students who completed or are in the writing phase of their theses), academic staff (who teach or supervise Master or PhD students), librarians, technicians and postgraduate officers (whose work relate to control and manage postgraduate programmes). I am seeking your cooperation to forward a copy of the Invitation letter (as attached) to the intended key informants.

My study seeks to contribute to the understanding of the factors affecting the adoption and development of Electronic Theses and Dissertation (ETD) programmes in the Gulf States. It is hoped that understanding these influencing factors will help to increase the chances for the successful adoption and development of ETD programmes in the Gulf States.

The study has been approved by the VUW SIM Human Ethics Committee. The questionnaire returns are strictly anonymous. For this, I am using a web-based survey using a well known survey tool, www.surveymonkey.com. The questionnaire itself does not seek any information of a personal nature. In addition, the questionnaire returns will not reveal any information about the person who sent the response or the institution location was sent from. Furthermore, data will be presented only in aggregate form, without individuals or institutions identified in anyway.

A summary of the key findings will be provided to you and all other research participants upon request.

The insights gained will be used as part of my PhD thesis, which will be deposited in the VUW Library on completion. There is also a possibility of depositing the thesis in the University library's institutional repository. In addition, research findings may be published in academic or professional journals and presented at international conferences, but always with data in aggregate form only.

I really appreciate your continuing support for my research.

I look forward to hearing from you.

Jamal Al Salmi

Mobile: +64211184458, Emails: alsalmij@squ.edu.om, jamal.alsalmi@vuw.ac.nz

The research title:

Electronic Theses and Dissertations Programmes in the Gulf States: Exploring the factors affecting the adoption and development of these programmes

INFORMATION SHEET FOR PARTICIPANTS

Dear participant:

Thank you very much for taking the time to complete this online questionnaire. I am doing research for a PhD degree at Victoria University of Wellington (VUW) in the School of Information Management (SIM), New Zealand. I also work as a lecturer at Sultan Qaboos University in the Department of Library and Information Science, Sultanate of Oman. I would highly appreciate your support by participating in this online questionnaire. It is expected to take 15-20 minutes to complete.

Your answers will help us gain a better understanding of the factors affecting the adoption and development of Electronic Theses and Dissertation (ETD) programmes in the Gulf States. It is hoped that understanding these influencing factors will help to increase the chances for the successful adoption and development of ETD programmes in university libraries in the Gulf States.

I would like to confirm that this questionnaire has been approved by the VUW SIM Human Ethics Committee. The questionnaire returns are strictly anonymous. For this, I am doing a web-based survey using a well known survey tool, www.surveymonkey.com. The questionnaire itself does not seek any information of a personal nature. In addition, the questionnaire returns will not reveal any information about the person who sent the response or the institution location was sent from. Furthermore, data will be presented only in aggregate form, without individuals or institutions identified in anyway.

A summary of the key findings will be provided to you and all other research participants upon request. Please contact me to receive a copy of the key findings: Jamal Alsalmi, Tel.: +64211184458, Email: alsalmij@squ.edu.om. Please be assured that your email address will remain confidential.

The insights gained will be used as part of my PhD thesis, which will be deposited in the VUW Library on completion. There is also a possibility of depositing the thesis in the University library's institutional repository. In addition, research findings may be published in academic or professional journals and presented at international conferences, but always with data in aggregate form only.

Your consent to participate voluntarily in this survey is signalled by clicking on the button that follows this statement:

"**I agree to the conditions of this questionnaire and wish to participate**".

Should you have any questions about this research, you may email me (alsalmij@squ.edu.om) or my project supervisors (Prof Gary Gorman Gary.Gorman@vuw.ac.nz and Dr. Chern Li Liew Chernli.Liew@vuw.ac.nz).

10.3. Appendix C: The survey questions

The survey was sent to five groups: Technicians (T), Librarians (L), Postgraduate officers (P), Academic staff (A), and postgraduate students (S). The letters T, L, P, A, and S in each question show that this question has been asked to these groups.

Electronic Theses and Dissertations (ETD) programmes Survey

Question A: What is your position?

☐ Technician   ☐ Librarian   ☐ Postgraduate officer

☐ Postgraduate students   ☐ Academic staff (who teach and supervise master and PhD students)

Part 1: **questions about issues related to ETD programmes**

Section 1: **Your perceptions on issues related to the technological processes required to adopt ETD programmes**

Code	Please specify the extent to which you agree or disagree with the following statements	strongly disagree	disagree	not certain	agree	strongly agree
B1	The process required to adopt an ETD programme is very time consuming	T	L	P	A	
B2	The university can easily manage the processes required to adopt an ETD programme	T	L	P	A	
B3	New scanning technologies improve the scanning of printed theses	T	L			
B4	Making scanned theses in-text searchable is easier than producing these in image format only	T	L			
B5	Scanning Arabic script is more difficult than scanning English script	T	L			
B6	The process of scanning printed theses is very time consuming	T	L	P	A	
B7	Policy-based security procedures should be available to ensure the security of processing electronic theses	T				
B8	The security level of my university's system for safeguarding the use of and access to electronic theses is adequate	T				
B9	For preservation purposes, it is easy to migrate electronic theses to another medium	T				
B10	The long term preservation of electronic theses is easier than the long term preservation of printed theses	T				
B11	Current IT infrastructure in my university is sufficient to adopt an effective ETD programme	T	L	P	A	

Section 2: Your perceptions on legal issues related to the adoption of ETD programmes

Code	Please specify the extent to which you agree or disagree with the following statements	strongly disagree	disagree	not certain	agree	strongly agree
	Copyright issues					
C1	Research in the form of electronic theses should be made freely available to everyone	T	L	P	A	S
C2	Supervisors' agreement is essential before their students' theses can be electronically available	T	L	P	A	S
C3	Protecting my copyright by the university will give me more confidence to participate in this programme					S
C4	The university does not have to get prior agreement from students when making their theses electronically available	T	L	P	A	
C5	Making theses electronically available is similar to making them available in the library shelves in terms of making them available to users	T	L	P	A	
	Plagiarism issues					
C6	Theses are more vulnerable to plagiarism when they are electronically available	T	L	P	A	S
C7	Printed documents are as vulnerable to plagiarism as electronic documents	T	L	P	A	S
C8	Copyright policies and legislation are weakly enforced in the Gulf States	T	L	P	A	S
C9	Discovering plagiarism is easier when theses are electronically available	T	L	P	A	S
C10	The ease of discovering illegal copying when theses are electronically available would eliminate the possibility of plagiarism	T	L	P	A	S
C11	The benefits of ETD programmes more than compensate for concerns surrounding plagiarism	T	L	P	A	S
	Impact on publishing					
C12	The content of a journal article written down based on a thesis is different from the original thesis					S
C13	I might refuse to participate in this programme and disagree to make my thesis electronically available if it is going to eliminate the chances of publishing in the future					S
	University policies and legislation					
C14	I believe universities should establish certain	T	L	P	A	

Code		strongly disagree	disagree	not certain	agree	strongly agree
	criteria in selecting theses for electronic publication in their ETD programmes					
C15	Students' cooperation will be weak if participation is made voluntary	T	L	P	A	S
C16	Updating and changing copyright policies to suit this programme is very time consuming	T	L	P	A	
C17	Updating policies is easier if the university administration supports the idea of ETD programmes	T	L	P	A	

Section 3: Your perceptions on administrative issues related to the adoption of ETD programmes

Code	Please specify the extent to which you agree or disagree with the following statements	strongly disagree	disagree	not certain	agree	strongly agree
D1	I think academic staff should take the lead in promoting the idea of an ETD programme in the university	T	L	P	A	
D2	I think the college or deanship of post graduate studies should have principal responsibility for leading the ETD programme in the university	T	L	P	A	
D3	I think the university library should have principal responsibility for leading the ETD programme in the university	T	L	P	A	
D4	Allocating specific people to manage this programme would enhance the adoption process.	T	L	P	A	
D5	Higher level management decision to adopt an ETD programme will facilitate the provision of appropriate IT infrastructure	T	L	P	A	
D6	The financial cost of IT infrastructure requirements for ETD programmes is not burdensome	T	L	P	A	

Section 4: Your perceptions on various issues related to the adoption of ETD programmes

Code	(1) Please specify the extent to which you perceive complexities in the process to adopt an ETD programme when	no complexity at all	a little complex	not certain	considerably complex	extremely complex
E1	The necessary IT infrastructure is in place	T	L	P	A	
E2	Theses are available in electronic format	T	L	P	A	
E3	Trying to make the ETD programme compliant with other university systems	T				
E4	The process of scanning printed theses	T	L			
E5	Ensuring the security of electronic theses	T				
E6	Maintaining long term preservation of electronic theses	T				
E7	Trying to obtain permission from students to make their theses electronically available	T	L	P	A	
E8	Tracing students who submitted their theses in the past in order to obtain their permission to make their theses electronically available	T	L	P	A	
E9	Converting your thesis to a PDF file					S
E10	Submitting your thesis on a CD					S

Code	(2) Please specify the extent to which you think the followings resources are available in the university	not available at all	inadequately available	not certain	adequately available	completely available
F1	Technological infrastructure suitable for the adoption of an ETD programme	T	L	P	A	
F2	Policies that clearly allow the university to make theses electronically available	T	L	P	A	
F3	Polices and legislation asking students to submit electronic copy of their theses	T	L	P	A	
F4	Promotional activities to increase awareness of ETD programmes	T	L	P	A	
F5	A project champion to lead the adoption of the ETD programme	T	L	P	A	

Code		no concern at all	a little concern	not certain	considerable concern	extreme concern
F6	A project champion with a comprehensive understanding of ETD programmes	T	L	P	A	
F7	Sufficient fund for adopting the ETD programme	T	L	P	A	
F8	Sufficient number of staff to manage the ETD programme	T	L	P	A	
F9	Qualified staff who can deal with the process required to adopt an ETD programme	T	L	P	A	

Code	**(3)** **Please specify the extent to which you have concern about the following issues**	no concern at all	a little concern	not certain	considerable concern	extreme concern
G1	Possibility of plagiarism when theses published electronically	T	L	P	A	S
G2	A journal may prevent you from making your thesis electronically available if you choose to publish an article from your thesis, since in such cases the journal becomes the owner of the article's copyright					S
G3	Journals may refuse to publish articles from your thesis if your thesis is already published electronically					S
G4	Electronic publication of theses without obtaining prior permission from students	T	L	P	A	

Code	**(4)** **Please specify the extent to which you think the following actions would be effective in eliminating the chances of plagiarism**	very ineffective	ineffective	not certain	effective	very effective
H1	Making access restrictions to theses (No copying, downloading or printing)	T	L	P	A	S
H2	Increasing people's awareness about the copyright of others	T	L	P	A	S
H3	Making access to theses exclusive to the registered university library users only	T	L	P	A	S
H4	Providing only the abstract of the theses electronically	T	L	P	A	S
H5	Establishing appropriate policies and legislation about plagiarism	T	L	P	A	S

Code	(5) **Please specify the extent to which you think promotional activities would have the following influence**	no influence at all	weak influence	not certain	strong influence	very strong influence
I1	Motivate the university community to be more willing to cooperate with the ETD programme	T	L	P	A	S
I2	Convince the high level administration to adopt an ETD programme	T	L	P	A	
I3	Motivate students to be more willing to participate in the ETD programme	T	L	P	A	S

Code	(6) **Please specify the extent to which you think the existence of a project champion would have the following influence**	no influence at all	weak influence	not certain	strong influence	very strong influence
J1	Would help to bring more administrative support to the ETD programme	T	L	P	A	
J2	Would help to influence other people in the university	T	L	P	A	
J3	Would help to bring more financial support to the ETD programme	T	L	P	A	

Part 2: Perceptions regarding possible enablers that have influenced or would influence the adoption of ETD programmes

Code	Please specify the extent to which you perceive the following criteria to positively influence the adoption of ETD programmes	no influence at all	weak influence	not certain	strong influence	very strong influence
K1	People's appreciation of the various benefits of ETD programmes	T	L	P	A	S
K2	Outsourcing to a private company to scan theses and dissertations	T	L	P	A	
K3	The availability of appropriate technological infrastructure	T	L	P	A	
K4	The availability of appropriate polices and legislation to govern legal issues	T	L	P	A	S
K5	The availability of promotional activities to make the university community aware of ETD programmes and their benefits	T	L	P	A	S
K6	The availability of technically qualified staff allocated specifically to deal with the ETD programme	T	L	P	A	
K7	Management decision to adopt an ETD programme	T	L	P	A	
K8	The availability of administrative support to adopt an ETD programme	T	L	P	A	
K9	The availability of a project champion to lead the ETD programme	T	L	P	A	
K10	Making it compulsory for all students to participate in the ETD programme	T	L	P	A	S
K11	The availability of a training programme on ETD programmes	T	L	P	A	
K12	The availability of financial support	T	L	P	A	
K13	The current global trend which supports the adoption of ETD programmes	T	L	P	A	S
K14	Benefiting from other universities' experience in adopting ETD programmes	T	L	P	A	

Part 3: Perceptions regarding possible barriers that have influenced or would influence the adoption of ETD programmes

Code	Please specify the extent to which you perceive the following criteria to negatively influence the adoption of ETD programmes	no influence at all	weak influence	not certain	strong influence	very strong influence
L1	Possibility of plagiarism when theses published electronically	T	L	P	A	S
L2	Lack of technological infrastructure in the university to adopt an ETD programme	T	L	P	A	
L3	Lack of staff with appropriate technical skills to handle the ETD programme	T	L	P	A	
L4	Lack of administrative support for the ETD programme	T	L	P	A	
L5	Lack of appropriate policies and legislation to govern the copyright of theses	T	L	P	A	S
L6	Lack of awareness about ETD programmes amongst the university community	T	L	P	A	S
L7	Lack of cooperation and commitment from students to the ETD programme if participation is voluntary	T	L	P	A	S
L8	Lack of financial support to adopt the ETD programme	T	L	P	A	
L9	The quality of some theses will make the university hesitate in publishing these electronically	T	L	P	A	
L10	Lack of a project champion to lead the ETD programme in the university	T	L	P	A	
L11	Resistance to new technologies from staff who have worked in the university for a long time	T	L	P	A	
L12	The number of postgraduate students is limited compared to bachelor students and thus it is not worthwhile making theses electronically available	T	L	P	A	
L13	Time taken to make a decision on adopting an ETD programme	T	L	P	A	
L14	People's resistance to new technologies	T	L	P	A	S
L15	Decision-making workflow in the university when adopting new technologies	T	L	P	A	
L16	Making my thesis electronically available might eliminate my chances of publishing papers from my thesis					S

Thank you very much for taking time to complete this survey. Your help is deeply appreciated