An Investigation of the Adoption by Banks and Acceptance by Bank Customers of Internet Banking in the Sultanate of Oman

By

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Supervised by

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DECLARATION

I declare that this work has not previously been accepted in substance for any degree and is not being concurrently submitted for any other degree.

I further declare that this thesis is the result of my own independent work and investigation, except where otherwise stated (a bibliography is appended).

Finally, I hereby give consent for my thesis, if accepted, to be available for photocopying and for inter-library loan, and for the title and abstract to be made available to outside organizations.

Basam Khalil Hamdan Tabsh (candidate)
DEDICATION

This thesis is dedicated to my mother and father may ALLAH protect them, they have always worked hard to encourage me to achieve my aims in life.

I also dedicate this research study to my wonderful sister for her support and help during my study period either in my personal and research life.

I also dedicate this work to the soul of my older sister (may she rest in peace), although she is not here, but I always feel her encouragement and motivation in order to achieve what I plan.

Finally, I dedicate this thesis to my wonderful nieces Hala and Noor as well as my nephews Ahmed, Mohammed, Abdel-Aziz, Omar and Al-Mohanad, and their fathers Nabel and Essam.
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I would like primarily to praise and thank ALLAH, the most Gracious and the most Merciful, who gave me the ability to complete this work.

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My deepest thanks go to my mother and father as they were the source of my inspiration in my study. Special thanks also go to my sister, for her encouraging during my study period.

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I wish to express my warm and sincere thanks to Professor Eleri Jones for her continuous motivation, help, support and guidance through the four years of my research journey.

I am also thankful to the participants from the seven Omani local banks managers who I met during the first fieldwork. My sincerest appreciation goes for each person who accepted to participate in this research study and who completed the research questionnaire.

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ABSTRACT

Internet banking has been part of the American and European banking system for many years, but only since 2005 have Omani banks adopted this technology. There is little research on Internet banking adoption in Oman and no research on Omani customers’ acceptance of Internet banking. This two-phase research study used the unified theory of acceptance and use of technology (UTAUT) as a theoretical basis. The UTAUT model was modified by adding three constructs (culture, customers’ attitude towards computers, trust) to investigate the key constructs influencing customers acceptance of Internet banking.

In phase one fourteen managers in seven Omani banks were interviewed to clarify their understanding of Internet banking and determine the main challenges in the early stages of system adoption. The banks had a clear understanding of Internet banking terminology and identified a number of barriers in the early stages of Internet banking adoption which could be classified into internal and external barriers. The research identified the main constructs affecting customers’ acceptance of Internet banking from the managers’ perspectives and resulted in the exclusion of the ‘voluntariness of use’ moderator from the original UTAUT model.

The second phase explored the key constructs affecting customers' acceptance of Internet banking. Multivariate analysis was used to analyse questionnaire responses from 611 customers. The results identified that one independent construct ‘attitude towards Internet banking’ comprising six sub-constructs influenced customers’ intention towards Internet banking. Gender, age and educational level moderators influenced the independent construct.

Based upon these findings a model of Internet banking acceptance and use in the Omani context was developed that illustrates the key constructs affecting customers’ acceptance of Internet banking in Oman. This is considered the major contribution of this research. The study offers potential solutions to overcome Omani customers’ loyalty to traditional banking and encourage a shift towards adoption of Internet banking.
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<td>Attitude towards Internet Banking</td>
</tr>
<tr>
<td>ATM</td>
<td>Automatic Teller Machines</td>
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<tr>
<td>CBO</td>
<td>Central Bank of Oman</td>
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<tr>
<td>CDM</td>
<td>Cash Deposit Machine</td>
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<tr>
<td>CFI</td>
<td>Comparative Fit Index</td>
</tr>
<tr>
<td>C-TAM-TPB</td>
<td>Combined Technology Acceptance Model and Theory of Planned Behaviour</td>
</tr>
<tr>
<td>DTPB</td>
<td>Decomposed Theory of Planned Behaviour</td>
</tr>
<tr>
<td>GCC</td>
<td>Gulf Cooperation Council</td>
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<tr>
<td>GITTC</td>
<td>Government IT Training &amp; Certification</td>
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<td>Innovation Diffusion Theory</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>IVR</td>
<td>Intelligence Voice Requisition</td>
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<td>Lazy User Theory</td>
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<td>Model of PC utilization</td>
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<td>New Zealand</td>
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<td>R.O</td>
<td>Omani Rial</td>
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<td>United Nations</td>
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<td>Unified Theory of Acceptance and Use of Technology</td>
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<tr>
<td>WAP</td>
<td>Wireless Application Protocol</td>
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CHAPTER ONE: INTRODUCTION

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1.1 Research Journey

This section highlights the main issues that have driven the development of this study, as well as the journey that led to the development of this thesis. After graduating from secondary school in 1993 I received a scholarship from the Omani government to study in the University of Jordan. Four years later I graduated from the College of Economics and Administrative Sciences with a Bachelor’s degree in Accounting. Subsequently, the Ministry of Finance offered me a job in the Budget Department as a Budget Analyst. After working there for two years the Ministry agreed to send me back to Jordan in order to obtain a Master’s degree in Public Administration. However, previous professors encouraged me to study Financial Management rather than Public Administration, as my background was accounting. Eighteen months later I graduated with a Master’s degree in Financial Management. I returned to my job at the Ministry of Finance, but unfortunately, I felt that I wanted to reap the full benefit of my studies through the application of what I had studied in the Master’s and therefore I applied to Ministry of Manpower to work as an Assistant Lecturer in the Business Studies Department of the Higher College of Technology.

In October 2003 I joined the Higher College of Technology as a Senior Assistant Lecturer. After training for six months I worked in the Business Studies Department and taught several Business and Accounting courses. During the teaching period I gained a different and new experience in the field
of teaching and research even though it was initially very difficult, especially in the early day. However, I enjoyed my new job and started to learn many new research strategies. Five years later the college deanship upgraded me to a Lecturer position and nominated me for a PhD scholarship. I started searching for an interesting topic for my PhD research in Business Management Science.

One year before arriving in the United Kingdom (UK) in 2007 the Higher College of Technology decided to launch a new specialization in the Business Studies Department called e-business. When the Department first introduced this specialization students refused to enrol on it. During that period I was selected to represent the Ministry of Manpower at a conference concerning Vocational Education in the UK. Almost all the conference papers were focused on the adoption of new technology in vocational institutions. Three months later I acquired an opportunity to attend a specialized course in Academic English language for 12 weeks in New Zealand (NZ).

During my visits to the UK and NZ I was surprised by the extent of development in the banking industry. I found this interesting, as the banks in Oman are overcrowded as many customers visit banks in order to complete their bank enquiries and transactions. Through the banking staff in the UK and NZ, it became clear that there is a range of new banking channels that depends directly on advanced technology systems. These technologies permit bank customers to complete their enquiries and transactions without the need to visit
their banks. Thus, the adoption of advanced technology in developed countries enabled banks to shift from traditional banking to electronic banking system.

After returning home a number of issues helped me to specify my PhD research topic as follows:

- The adoption of advanced technologies in the banking industry in developed countries.
- The great effort from the UK government in introducing advanced technologies in their education sector.
- Omani students' reluctance regards the e-business specialization.

I linked these issues: the adoption of advanced technologies in the banking industry; the importance of introducing advanced technologies in education; the Omani students' reluctance to study e-business; my own role as a lecturer in a technical higher education. Thus, I decided that my research topic would be "An Investigation into the adoption and acceptance of Internet banking in the Sultanate of Oman".

In this regard, there is an important need to determine the opinion of Omani bank managers about the electronic banking functions in general and Internet banking in particular. Moreover, it's important to identify the most important barriers and difficulties that faced or may face Omani banks in their adoption of Internet banking. On the other hand, customers' acceptance of advanced
technologies is a critical issue and therefore this study will focus on the main elements and issues that influence bank customers' behavioural intentions towards the acceptance and use of Internet banking.

1.2 Research Background

The banking industry has experienced tremendous changes in providing services to the public, such as moving from traditional bank practices to electronic banking which include a number of electronic functions, such as Automatic Teller Machines (ATM), mobile and Internet banking. Comptroller of the Currency Administrator of National Banks Report (1999) defined internet banking as a banking system enabling bank customers to access their bank accounts and complete their bank enquiries and transactions themselves through the availability of a personal computer and a modem. Internet banking products and services can include wholesale products for corporate and individual customers. It has been evident that banks have to invent new strategies, such as the adoption of new technologies and new marketing channels, to compete in the market and maintain sustainable market share, especially as countries move towards e-government. A paradigm shift towards the adoption of new technologies enables accuracy, reliability, transparency as well as ease of access to any significant information (Crowne, 2007). With the development of asynchronous technologies and secured electronic transaction technologies, the service industry uses the Internet as a medium for information storage and the completion of transactions.
In the European Union 75% of households had access to the Internet in the first three months of 2011, compared with 50% in the same period of 2006. In addition 68% of households had a broadband Internet connection, compared with 30% in 2006. More than a third of European used Internet banking in 2011 (Eurostat, 2011). Thus, Internet banking plays a vital role in moving from traditional to electronic marketing channels.

Avlonitis and Papastathopoulou (2000) suggested that electronic banking facilities speed up the cash cycle for the corporate customers and increase their overall performance as a large amount of cash management instruments are available on Internet sites giving customers access to operate their accounts and to obtain other services through the Internet. Concomitantly, Internet banking poses a number of issues for both bankers and customers in terms of security and efficiency of transactions (Rietz, 2003). In order to sustain their competitive edge, banks need to understand customer perceptions of Internet banking and to recommend solutions (Jayawardhana and Foley, 2000). Johnson (2008) argued that the reason for the growth in the use of Internet banking by the banks and their customers is that it is convenient and there is ready access to the Internet in all developed countries. This coupled with cost savings from closing bank branches is driving the deployment and adoption of these services. Kerem (2003) noted that having access to the Internet has allowed banks to cut transaction costs, improve their image in the market and respond better to market demands. Later on Kerem (2008) pointed that banks
have used their websites successfully to promote and cross-sell their services and products among existing customers.

The banking industry has made an enormous impact on the global economy. Many variables affect this industry and one of the most significant ones is that the adoption of the Internet and its implementation within the banking industry. However, there are differences in the way that banks operate in each country and whilst the adoption of Internet technology has been implemented fully in some countries, it has been poorly adopted in others. In Oman, various banks (including public, private and foreign banks) compete in terms of the quality of services and the adoption of technology to provide services.

Al-Hajri and Tatnall (2008) measured the relation between the adoption of Internet banking and banks' performance using three issues: profitability, market environment, and employee productivity. Consequently, the results of the study identified that Internet banking has a significant positive effect on the productivity and performance of employees in the Omani banking industry. However, there was no relation between profitability and the marketing environment with the adoption of Internet banking. This may be due to two barriers to the adoption of Internet banking in Oman: the high cost of new technology investment and the use of Internet technology require an economy of scale.
In particular, the Central Bank of Oman plays a pivotal role in this industry, making banking a cornerstone of the Omani economy and maintaining the stability of the Omani Rial (Central Bank of Oman, 2011). Currently, Omani banks conduct nearly all their banking transactions using traditional banking channels and pay little attention to the Internet. Furthermore, bank customers hesitate to accept and use Internet banking, as they are worried about losing their money in case of errors, especially with the absence of human interaction (Saqer, 2009). The adoption of the Internet in the Omani banking industry poses a rich area for research and will be the main focus of this study.

1.3 Rationale for Research

The adoption of Internet banking has transformed the focus of banking from technological development to customer behaviour. This may be because the slogan “the customer is king” has never been more relevant than it is today, especially in the banking industry (Jayawardhena and Foley, 2000). Researchers who are willing to study the adoption of Internet banking have to consider its adoption on customers’ acceptance in addition to the banks’ ability to adopt the new technology. However, studying consumers’ intentions, beliefs, perceptions and behaviours towards new technologies is important as customers’ acceptance studies provide researchers with an understanding, predicting and influencing regards the new develop system.
Various studies have been published on the adoption of Internet / online banking. Almost all of these studies highlight the positive aspects of online banking services in general, while a few of them identify the various barriers that affect the adoption and implementation of Internet banking. Additionally, there are a few quantitative studies that investigate bank customers' acceptance (intention and perception) towards Internet banking. Unfortunately, few research studies have addressed the adoption of Internet banking in the Sultanate of Oman and there are no published quantitative research studies regarding Omani bank customers.

1.4 Research Questions

Previous studies regarding Internet banking in Oman (e.g. Al-Sabbagh and Molla, 2003; Al-Hajri and Tatnall, 2008; Saqer, 2009) are limited and focus on qualitative research methods in order to identify the real obstacles that affect banks adopting and implementing Internet banking services. Unfortunately, the perspectives of bank customers on Internet banking have not been studied. Therefore, this study will adopt both quantitative and qualitative research methods in order to identify the different barriers and elements that affect the adoption and acceptance of Internet banking in Oman from the banks and customers perceptions. Thus, to define the research aim and objectives I have identified a set of research questions as follows:
1. What do local bank managers understand by electronic banking in general and Internet banking in particular?

2. What are the main barriers that affected Omani banks in the early stages of Internet banking adoption?

3. What are the main constructs that affect the acceptance of Internet banking from the bank and customer perspectives?

4. Is the model derived from this study suitable for different sub-groups of the demographic characteristics, such as age, gender and education level, and is the use of Internet banking voluntary or mandatory?

5. What constitutes a model of good practice for the acceptance of Internet banking in the Sultanate of Oman?

6. What are the recommendations to improve and enhance Omani bank customers’ acceptance of Internet banking in order to shift them from traditional banking to electronic banking systems?
Chapter One: Introduction

1.5 Research Aim and Objectives

The main aim of this research study is to investigate the adoption and acceptance of Internet banking in the Sultanate of Oman and develop a model of the most important elements that affect customers’ acceptance. To fulfil this aim, five objectives are formulated, namely:

1. **Conduct a critical review of relevant literature related to the Internet banking in general and its acceptance.**

   I will critically review relevant literature on the adoption and acceptance of the Internet in the Sultanate of Oman.

2. **Explore Omani bank managers’ perspectives of electronic and Internet banking and identify the main barriers that have faced Omani banks adoption and implementation of Internet banking services.**

   The research will draw from an extensive analysis of the electronic banking services offered in the Sultanate of Oman. The research will identify various factors that favour Internet banking in the Sultanate of Oman and the barriers that the banks faced in implementing Internet banking. This will be conducted using in-depth semi-structured interviews with Omani bank managers.
3. Identify the main constructs that influence bank customers' acceptance and usage of Internet banking from the perspective of both local bank managers and their customers.

This objective will identify the most important elements that affect (positively or negatively) bank customers' behavioural intentions towards acceptance and use of Internet banking in the Sultanate of Oman. This will be met by conducting in-depth semi-structured interviews with Omani local bank managers and questionnaires distributed to bank customers.

4. Develop a model of good practice for Internet banking acceptance for bank customers in developing countries such as the Sultanate of Oman.

Guided by the model developed from the literature review and by the fieldwork focused on the acceptance of Internet banking in the Sultanate of Oman, a model will be developed to work as a guideline for the stakeholders involved with Internet banking in the Omani banking industry.

5. Develop a set of recommendations on how best to encourage the adoption and acceptance of Internet banking services in the Omani banking industry.
This objective will be met by providing recommendations for all stakeholders involved in Internet banking in the Sultanate of Oman banking industry. These recommendations will be gathered from the views and opinions of banks’ managers and customers.

1.6 Overview of the Sultanate of Oman

The Sultanate of Oman is located in the Middle East in the southeast corner of the Arabian Peninsula. The country’s population is 2,694,000 out of which 1,951,000 are Omanis and 743,000 are foreigners (Oman Census, 2010). Moreover, the country is Arabic and has a well-preserved culture. Since 1970, under the guidance of His Majesty Sultan Qaboos bin Said, Oman has evolved into a modernised country where health care and education are considered to be basic requirements for human life. The country has focused on improving these sectors as; in 1970 there were only three schools and one hospital in the country (Ministry of Information, 2008). However, Ministry of Information (2010) indicated that the development of education and health sectors in Oman have a significant impact on the development of productive and services sectors in the country. However, according to the degree of economic development which includes domestic product (GDP), the capita income (per person), level of industrialization, amount of widespread infrastructure and general standard of living, the United Nations and International Monetary Fund classified the Sultanate of Oman as a developing country (United Nations Statistics Division, 2011).
1.6.1 Sultanate of Oman Economic Development

In 1995 the Sultanate started to define a path for its future development by adopting Vision 2020 (Ministry of Information, 2008). The country depends on export strategy with the mission of reducing the oil sector’s contribution to GDP by 9% by 2020 (CIA, 2010). According to the Ministry of National Economy (2002) Oman is considered as an export-led economy. This is because of its heavy reliance on oil revenues as the main source of income. Therefore, Oman planned to diversify its resources (CIA, 2010). For example, there are remarkable developments in many sectors, such as industrial, agricultural and tourism. To enhance the country’s economy the government developed the infrastructure and superstructure. Between the periods of 1985 to 2008 the Sultanate of Oman showed an improvement in its exports and imports as well as expenditure and revenue. Figure 1.1 outlines this economic improvement.

![Graphs showing Government Revenues and Expenditure/ Merchandise Export and Import](image)

Figure 1.1 Government Revenues and Expenditure/ Merchandise Export and Import (Source: Ministry of National Economy, (2009)).
In order to take a place in the global marketplace to support the country's economy and improve local residents' standard of living the Omani government is undertaking many developmental projects in various industries (Ministry of National Economy, 2008). Furthermore, to improve the country's financial and commercial practices in order to reach the international standards Oman enrolled as a member in the World Trade Organization on October 2000 (Ministry of Commerce and Industry, 2009).

1.6.2 The Choice of Sultanate of Oman's as a Case Study

This study will focus on the adoption and acceptance of Internet banking in the Sultanate of Oman; from different perspectives. The Oman national economy started in July 1970 and considered as one of the growing economies in the world (Sinha, 2006). Furthermore, Oman is considered as one of the earliest Middle East countries to join the World Trade Organization (WTO). On a yearly basis, the Oman banking industry is developing, for example, the net profits of the Omani commercial banks in 2010 had increased approximately 29.8% over the previous year. In 2010, commercial banks in Oman earned a higher net profit of 247.7 million Omani Rial (R.O) compared to R.O 190 billion in 2009. Moreover, total assets of commercial banks in Oman reached R.O. 9.43 million at the end of 2010 raised by 8.6% comparing with the previous year 2009 (Central Bank of Oman, 2011).
Moreover, the United Nation Economic and Social Commission for Western Asia (ESCWA, 2003) described the Oman level of Information and Communication Technology (ICT) policies and strategies an average, which is considered good for a young and developing country. Furthermore, the report showed that Oman has developed clear plans and objectives regarding the development of ICT and the government have allocated special financial recourses for ICT research. Additionally, based on these issues the Sultanate of Oman has been one of the countries which attract the attention of researchers, and due to these reasons, the Sultanate of Oman has been chosen as a case study for this research.

1.7 Structure of the Research

Chapter One: This chapter is gives the reader an overview of the thesis, starting with a brief introduction to the research journey and background information on the study. The chapter also contains the research questions, aim and objectives. Moreover, the chapter provides a justification for the use of the Sultanate of Oman as a research case study.

Chapter Two: the chapter provides readers with a background to the evolution of banking with a focus on the industry's development during the past three decades. Furthermore, the chapter clarifies the differences between major banking terms related to electronic banking. The chapter also identifies and
Chapter One: Introduction

highlights the main barriers that face banks in the early stages of Internet banking adoption. It reviews the Sultanate of Oman banking structure in addition to the global online banking trends and the implementation and use of the Internet banking services in the Sultanate of Oman.

Chapter Three: reviews the main literature with regards to the acceptance of development technology. The literature presents a number of technology acceptance theories that can be used to discover the different factors that affect the acceptance of new technology (Internet banking). The chapter will identify the most relevant model to match the research requirements. Moreover, justification will be given for the research model. The chapter will culminate in the development of a conceptual research framework that will be used to inform this study.

Chapter Four: This chapter identifies the study's research approach. It starts by explaining the nature of the research, mixing qualitative and quantitative approaches. The theoretical and practical research approaches are discussed and explains the research paradigm, methodology and methods used in order to achieve the study's aim and objectives. The study's sampling and data analysis process are discussed in this chapter. In addition, the chapter illustrates the research validity, reliability, triangulation, ethical consideration and results generalisation in details.
Chapter Five: the first field-work stage is addressed in this chapter. The chapter explores the perceptions of Omani bank managers regarding electronic banking in general and Internet banking in particular. Moreover, the chapter explores the main difficulties and barriers that affected the Omani banks in the early stages of the Internet banking adoption.

Chapter Six: The chapter identifies the main constructs that affect customers' intentions towards the acceptance and use of Internet banking from the bank managers' perspective. In particular, this stage in the model development serves to move from a generic framework to a more specific model (initial model). With reference to the mechanisms followed by the banks to make a positive impact of these constructs on the customers' intention towards accept and use the Internet banking.

Chapter Seven: the second field-work stage is addressed in this chapter. It illustrates bank customers' perceptions of Internet banking in order to identify the major constructs that impact on users' behavioural intentions towards the acceptance and use of Internet banking. The chapter is divided into three parts: the first part focuses on the preliminary analysis of the collected data; the second part focuses on the inferential statistical analysis of the collected data; while the third part focuses on the structural equation modelling.
Chapter Eight: The chapter discusses the results and draws the research study to a conclusion on the adoption and acceptance of Internet banking in the Sultanate of Oman. It discusses the research key findings by discussing the Omani banks' situation in relation to Internet banking and compares the research model (Internet banking acceptance and usage in the Omani context) developed in this study with the UTAUT model. In addition, the chapter reviews the research study objectives and presents the answers to the research questions. It also establishes appropriate recommendations to the Omani local banks, bank customers and Omani government. Additionally, the chapter considers the thesis contribution in terms of theory and practice. The research limitations and opportunities for further research are presented and the chapter closes by presenting my personal reflections on the research process and outcomes. Figure 1.2 summarises the thesis structure.
Chapter One: Introduction

Introduction
The research questions, aim and objectives

Review of Literature Part 1
Review of banks history and Internet banking services on an international and regional level

Review of Literature Part 2
Literature review of technology acceptance models and the conceptual framework

Research Approach
The research paradigm, methodology and methods

Objective One

Explore Electronic and Internet Banking in Oman and Identify the Barriers of Internet Banking Adoption

Objective Two

Main Factors that Affect Bank Customers Acceptance of Internet Banking from Local Banks Managers Perspective

Objective Three

Customers' Perceptions of Internet Banking
Testing the initial model by using AMOS computer software version 8

Objective Four

Modelling Internet Banking Acceptance and Use in the Omani Context

Objective Five

Thesis Discussion and Conclusion
Thesis discussion, recommendations, contributions and limitations

Figure 1.2: Thesis structure
1.8 Agenda of the Research

In order to answer the research questions, aim and objectives the research was conducted in six main stages.

Stage 1: A critical review of literature was undertaken in relation to adoption and acceptance of Internet banking. The literature review illustrated that adoption of Internet banking interfaced with different barriers and the main difficulty of successful adoption of Internet banking is customers' acceptance. This leads the researcher to the second stage.

Stage 2: In order to specify the main factor that impacts on bank customers' acceptance of Internet banking a range of technology acceptance theories were revised. Out of these theories the Unified Theory of Acceptance and Use of Technology (UTAUT) which was developed by Venkatesh et al. (2003) was adopted and modified in order to produce a research conceptual framework that identifies the key constructs that affect bank customers' acceptance of Internet banking.

Stage 3: To answer and achieve the research questions, aim and objectives an appropriate research approach has to be chosen. Pragmatism was chosen as research philosophy and with regard to research methodology, a single embedded exploratory case study was chosen (Yin, 2009). Three research
Chapter One: Introduction

methods were selected: documentation, in-depth semi-structured interviews and a questionnaire survey.

Stage 4: Fourteen in-depth, one-to-one, semi-structured interviews were conducted with local bank managers to clarify their understanding of electronic and Internet banking terminology, and determine the main barriers that faced Omani banks in the early stages of Internet banking adoption and to explore the main factors that affect customers' acceptance of Internet banking from the bank managers' perspective. The results from this stage informed the next stage of this study.

Stage 5: To identify the key factors that affect bank customers' behavioural intentions towards the acceptance and use of Internet banking. In this regard, a comprehensive questionnaire was designed. The questionnaire were distributed to 1,000 bank customers in Oman, 611 questionnaires were accepted (61.1% responding rate). For purposes of statistical analysis different statistical methods were used.

Stage 6: Based upon the research findings of bank managers' interviews and customers' questionnaires a model of Internet banking acceptance and use in the Omani context was developed to illustrate the key constructs that affecting bank customers' behavioural intentions towards the acceptance and use of Internet banking in the Sultanate of Oman. Table 1.1 presents the thesis timetable.
Table 1.1: Thesis timetable

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<tr>
<th>Key issues</th>
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<th>Completion</th>
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<td>Review of Literature</td>
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<td>Ongoing (March 2012)</td>
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<td>September 2008</td>
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<td>October 2009</td>
<td>December 2009</td>
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<tr>
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<td>June 2009</td>
<td>October 2009</td>
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<td>Submission of interview questions</td>
<td>January 2010</td>
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<td>Pilot study of interview questions</td>
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<td>Interviews with bank managers</td>
<td>March 2010</td>
<td>May 2010</td>
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<td>May 2010</td>
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<tr>
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<td>Integration of research findings of bank managers and customers</td>
<td>April 2011</td>
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<td>Writing-up and revising the thesis</td>
<td>October 2011</td>
<td>April 2012</td>
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# Chapter Two: Review of Banks and Internet Banking Services

## CHAPTER TWO: REVIEW OF BANKS AND INTERNET BANKING SERVICES

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<td>Barriers to the Adoption of Internet Banking by Banks</td>
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<td>Global Internet Banking Trend</td>
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Chapter Two: Review of Banks and Internet Banking Services

2.1 Introduction

This chapter critically reviews and evaluates literature in relation to banks and electronic banking with a specific focus on Internet banking. The chapter starts with an overview of the emergence of banks and their development. It highlights the different forces that have influenced the development of the banking industry. Section 2.3 explains the role of technology in the development of the banking industry through the provision of banking services that directly depend on advanced technologies. In this regard a number of electronic banking functions have been adopted and launched, for example Automatic Teller Machines (ATMs), telephone banking, mobile banking, home banking, Internet banking and TV banking. Many of these electronic functions enable bank customers to service their own transactions at any time during the day or night from worldwide locations. Section 2.4 focuses on the definition and conception of Internet banking and highlights the advantages and disadvantages of Internet banking adoption. Section 2.5 investigates the various barriers impacting on the adoption of Internet banking. Section 2.6 highlights global trends in the Internet banking system on different continents. The structure of the bank industry in the Sultanate of Oman is discussed in section 2.7. Section 2.8 discusses the Internet banking situation in the Sultanate of Oman. Section 2.9 summarises the entire chapter.
2.2 Banking Background

Alongside the development of money, banks started providing financial services around 1800 BCE in Babylon. Money was a means of exchange for daily transactions rather than swapping products (David, 1986; Downey, 1986). Hoyle and Whitehead (1987) as well as Miller and VanHoose (1997) explained that the development of banking services is inseparable from the development of the money system. The basic functionality of banks can be summarized according to Whiting (1985) and Perry (1989) as follows:

- Accept and safeguard their customers' deposits either as cash, cheques or other types of deposits.
- Permit their customers to withdraw their money at any time or to transfer their money from one account to another within the same bank or other banks.
- Make loans to their customers.
- Provide their customers with a wide range of financial and advisory investment services to meet their needs.
- Linked internationally through computer networks which enable payments to be made internationally on the same day – foreign services.
During the last 30 years the banking industry started to deal with a significant transformation relating to the adoption of various information and communications technologies (ICTs). Electronic commerce started in the USA and moved towards Europe contributing to accelerated changes in the banking industry (Lukauskas and Shimabukuro, 2006). Moreover, since the 1980s, all countries (especially the USA and Europe), have been influenced by a number of factors that changed the banking industry. Jayawardhena and Foley (2000 citing Nellis, 1998 and Rajan, 1998) classified these factors into two categories: external factors and internal factors.

Usually in a wider business environment, such as the banking industry, the external (remote) environment has a major effect on the internal (operating) environment and business. Finlay (2000) explained that changes in the remote environment will impact directly or indirectly on the operating environment. Finlay (2000) identified eight categories (Demographic, Economic, Ecological, Political, Legal, Informational, Social and Technological) by which the remote environment can be modelled using the DEEPLIST checklist. Carlson et al. (2000) and Gonzalez et al. (2008) noted that the remote environment categories are not discrete but are highly interrelated and interdependent as an issue in one category can impact on issues in other categories.

There are several examples of the interdependence of remote environment categories in the banking industry. For instance, Carlson et al. (2000) and Yu
(2006) demonstrated that the structure and function of the banking industry is influenced by economic reform (deregulation) and changes in technology. Gonzalez et al. (2008) explained that new technology is one of the external forces (remote environment) affecting revolution in the global banking industry. This is due to the development of technology supporting new customer demands through generating new products and services. Additionally, demographic and social trends influence regulation of the economy (Jayawardhena and Foley, 2000; Gonzalez et al., 2008).

The operating environment is often considered in terms of five categories, as seen in Porter's five forces model (threat of substitutes, bargaining power of suppliers, bargaining power of buyers, threats of new entrants and rivalry among existing competitors) (see Figure 2.1). Any one of these five forces has the power to affect the profitability of the business industry (Narayanan and Fahey, 2005).

Sayar and Wolfe (2007) explained that the development of technology is one of the remote environment categories that have been particularly influential in terms of driving revolution in the banking industry. Technological development has allowed new entrants to offer financial services which have led to increased competition in the industry. Increasing numbers of financial providers drive enhancement in the quality of banking services, because of industrial competition. Furthermore, increases in the number of suppliers provide consumers with more choice and options that allow them to choose between
banks based on their preferences. Consequently, as the number of providers rise, consumer powers and rights become more important. As explained by Jayawardhena and Foley (2000) the slogan “the customer is king” has recently become more critical than any other time in the history of the banking industry because new technologies and increased competition provides consumers with greater choice of suppliers and products. Figure 2.1 summarises the remote and operating environment forces.

![Figure 2.1 Remote and operating environment forces](image-url)
2.3 Technology and Banking: Historical Analysis

During the past three decades the banking industry has been affected by a range of remote and operating environment forces which have driven a paradigm shift from traditional to electronic banking. ICT developments have been one of the major factors impacting on the evolution on financial services industry, in general, and the banking industry, in particular (Berger, 2003; Kolodinsky et al., 2004). In traditional banking, customers deal with bank tellers on an individual basis at fixed times in fixed locations to complete their bank transactions. In contrast, electronic banking releases customers from the temporal and geographic constraints of traditional banking by allowing them to service their own transactions with remote support via a range of media channels (Fisher, 2000; Yousafzai et al., 2003; Haque et al., 2009a). This section of the chapter will provide an overview of the development of the banking industry in relation to technology adoption.

Shu and Strassmann (2005) highlighted the spread of ICTs in the banking industry. Mashhour and Zaatreh (2008) explained that financial institutions and commercial banks harnessed information systems to support their decision making and achieve their main goals. The banking industry can be considered a major investor in ICTs to provide consumers with diversified and convenient types of financial services.
The introduction of ICTs within the banking industry dates back to 1846 when the New York stock market started using the telegraph to reduce differences in stock prices across regional stock markets. Twenty years later, in 1866, the New York and London stock markets used the trans-Atlantic cable to integrate the USA and UK stock markets (Kuppusamy et al., 2009). Furthermore, to support growth in the banking industry, banks started allocating an investment budget to adopt low levels of technologies, such as tabulating machines (between 1930 and 1940) to achieve higher levels of service quality and staff productivity and efficiency. By the late 1950s, computers were introduced and impacted positively on the banking industry throughout all departments, as all information was saved on a database and was made accessible from different departments. Moreover, the processing of electronic data was introduced by the major banks in the USA and UK from 1965 (Kuppusamy et al., 2009).

After the introduction of the first ATMs in 1968 in the USA, banks were incentivised to adopt advanced technologies to provide their consumers with new financial services and new delivery channels. Therefore, in 1980 the banking industry underwent significant transformation through developing basic ATMs to offer additional functions in addition to money withdrawals, i.e. depositing funds, transferring funds between different accounts, paying bills and account inquiries (Scupola, 2002).
In 1983 telephone banking started to appear and enabled customers to complete their bank enquiries and transactions by telephone. For security purposes, users of phone banking had to enter a numeric password using the phone keypad, although some banks also used verbal passwords and asked security questions. Users of telephone banking were able to access the same services as available through ATM machines, such as checking account balances, bank statements, fund transfers, payment of utility bills (Melin et al., 2001). Moreover, Sundarraj and Wu (2005) emphasised that nowadays almost all telephone banking systems use an automated telephone answering system, where customers can complete all their account enquiries through their telephone keypads. In addition, if customers encounter problems in dealing with automated phone answering systems they can speak with a member of the bank staff through a call centre.

In the mid-1980s a new electronic function appeared, called home banking and evolved from the telephone banking system. Unfortunately, the system did not last long as it was based mainly on videotex which did not succeed commercially (Cronin, 1997). It seems that the idea for Internet banking took shape following the failure of the home banking system. At the beginning of 1990s a new banking system called Internet banking was announced by the USA to provide customers with more flexible access to a range of banking services (Pikkarainen et al., 2004; Radhakrishna, 2009). Consequently, using ICT enabled banks to re-design the way they produced and distributed their...
financial services, and these banks began shifting from traditional banking services to electronic banking services. Table 2.1 presents an overview of electronic banking development.

**Table 2.1: Main stages of electronic banking development**

<table>
<thead>
<tr>
<th>Year</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1846</td>
<td>New York banks starts using the telegraph to reduce the differences in stock prices with regional stock markets.</td>
</tr>
<tr>
<td>1866</td>
<td>New York and London stock markets used the trans-Atlantic cable to integrate the stock markets together.</td>
</tr>
<tr>
<td>1930-1940</td>
<td>Banks allocated an investment budget to adopt a low level of technology such as Tabulating Machines.</td>
</tr>
<tr>
<td>Late 1950’s</td>
<td>Computers were introduced into the banking industry.</td>
</tr>
<tr>
<td>1965</td>
<td>Processing of electronic data was introduced by the main banks in the USA and UK.</td>
</tr>
<tr>
<td>1968</td>
<td>The first Automatic Teller Machine (ATM) appeared in the USA.</td>
</tr>
<tr>
<td>1980</td>
<td>Banks started to deal with a significant transformation which depends on electronic advance functions.</td>
</tr>
<tr>
<td>1983</td>
<td>Telephone banking started and allowed bank customers to complete their bank transactions through the telephone by using numeric or verbal passwords.</td>
</tr>
<tr>
<td>Mid 1980’s</td>
<td>New electronic function appeared called home banking evolved from the telephone banking system based mainly on the videotex system.</td>
</tr>
<tr>
<td>Early 1990’s</td>
<td>Internet banking services system started in the USA.</td>
</tr>
</tbody>
</table>

2.4 Internet Banking

Daniel (1999) explained that Internet banking is just one of a range of electronic banking functions (see figure 2.2). Internet banking allows customers to complete their transactions through the bank’s website and provide them with bank information. It should not be confused with Web banking which only offers customers bank information (Diniz, 1998). Recently, Internet banking has been classified as one of the most well-known types of electronic banking (Wang et al., 2003; Leelapongprasut et al., 2005).
2.4.1 Definition and Conception of Internet Banking

Podder (2005) and Shao (2007) defined Internet banking as a method of electronic banking which offers and delivers banking services via the Internet. Internet technology allowed the banking industry to expand their marketing channels and to accomplish their main aims but triggered fierce competition in the industry (Pikkarainen et al., 2004; Arnaboldi and Claeys, 2008). Initiated within the USA, Internet banking service moved quickly towards Europe which, according to Schneider (2001), is the global leader in technology adoption and acceptance of Internet banking. From Europe, Internet banking services spread globally. However, Internet banking services started with limited functionality, such as checking account balances and printing account histories in addition to providing users with information on the latest banking services. Overtime, more
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functions have been added and, by the early 2000s most banking services could be accessed via Internet banking (Mahmood, 2009). According to Liao et al. (1999) electronic banking functions can be classified into informational services and transactional services (see Figure 2.3).

![Figure 2.3 Informational and transactional banking services]
Globally by 2012 almost all of the commercial and retail banks had their own websites, but not all of them provided customers with Internet banking services. Those banks that have designed their web pages to provide users with both informational and transactional services are classified as Internet banking providers. A bank’s website which is limited to providing the latest bank information and does not present an opportunity for financial transactions would be described as a Web bank rather than a provider of Internet banking services.

Technology developments have enabled banks to provide customers with a range of channels to access their bank accounts through the Internet (e.g. mobile phones). Users of third generation mobile phones which are equipped with Wireless Application Protocol (WAP) can replace their computer screen with their mobile phone screen. According to Hung et al. (2003) WAP enabled users can view and browse the Internet on the move since WAP pages can be downloaded fairly quickly and efficiently.

2.4.2 Advantages and Disadvantages of Internet Banking

The nature of any technological development, such as the Internet banking system, has a number of advantages and disadvantages. This section will examine these advantages and disadvantages from two different perspectives: banks as service providers and consumers as service users.
2.4.2.1 Advantages of Internet Banking

According to the most recent literature regarding Internet banking, six key advantages have been identified from the perspectives of commercial banks are as follows:

**Cost savings:** according to Tan and Teo (2000) the reductions in investment costs afforded by Internet banking have motivated new suppliers to enter the banking industry. The adoption of Internet banking technology helps financial organizations to control and reduce both their capital and operational expenses through the requirement for a decreased number of branches and employees as well as administrative and operational economies (Rotchanakitumnuai and Speece, 2003; Shih and Fang, 2004; Haque et al., 2009b). As a result, decreased investment and operational costs reflect positively on profitability.

**New marketing channels:** Internet banking is not restricted to a specific geographical area, as users can access Internet banking services from anywhere in the world (Shao, 2007). Mols (2000) and Suganthi et al. (2001) suggested that the use of Internet banking services changes the way their banks interact with their consumers and the way that they develop and offer their products and services. For example, in theory, consumers in the Sultanate of Oman could easily open and control their bank accounts in one of the UK banks through Internet banking. Therefore, Internet banking services give banks
opportunities to reach and deal with new consumers in different locations outside the banks’ immediate marketing areas (Christopher et al., 2006).

High efficiency: using Internet banking enhances a bank’s efficiency. Ideally, Internet banking offers an immediacy and accuracy banking to banking transactions not achievable through traditional banking system. Implementing Internet banking facilities increases the quality of banking services compared with traditional banking services. Therefore, Internet banking has the potential to improve and enhance a bank’s performance and efficiency (Dabholkar and Bagozzi, 2002; Yu, 2006; Haque et al., 2009b).

Enhanced Security: according to Haque et al. (2009b) the use of Internet banking, enhances a bank’s security. This is enabled through establishing an online security system so all client information and transactions are secure. In addition, secure Internet banking speeds up the process of communicating between customers and their bank (Yu, 2006; Rădulescu and Şerbănescu, 2009).

Improvement of a bank’s reputation: fierce competition in the banking industry means banks are constantly looking for new methods to distribute their financial services. Development technology is one solution that has helped banks to offer new and enhanced financial services and products (Jayawardhena and Foley, 2000; Rotchanakitumnuai and Speece, 2003; Yu, 2006). Thus, the adoption of Internet banking requires banks to transfer from traditional banking where the
client deals face-to-face with bank tellers to electronic banking where consumers use self-service technology and do not need to visit the bank branch. Tan and Teo (2000) explained that banks that fail in the adoption of electronic banking in general, and Internet banking in particular, are likely to lose customers and be forced out of the banking industry. Additionally, banks that successfully adopt and provide Internet banking achieve high levels of customer loyalty, reputation and goodwill in the banking industry (Liao and Cheung, 2008).

Enhancement of customer services and satisfaction: the development of technology in the banking industry aims to fulfil customers' needs through a package of electronic facilitating services. Thus, it follows that service quality impacts a customer's acceptance of Internet banking services and therefore their satisfaction with the provided services (Polatoglu and Ekin, 2001; Liao and Cheung, 2008; Rădulescu and Șerbănescu, 2009). Adoption and implementation of Internet banking has enabled banks to provide their consumers with diversified and convenient services without geographic and temporal constraints (Broderick and Vachirapornpuk, 2002).

The most recent literature regarding Internet banking identified three key advantages from the perspectives of commercial bank customers, as follows:
Availability: Akinci et al. (2004) considered that the availability of Internet banking 24/7 as one of the main benefits customers gain from the adoption and acceptance of Internet banking. Al-Somali et al. (2009) explained that Internet banking facilities are available around-the-clock for bank customers at any time during the year. Moreover, clients can access their bank accounts from anywhere in the world.

Time saving: the availability of Internet banking as one of the electronic banking functions helps the beneficiaries of the service to finish their banking operations from anywhere so they can save travelling time and avoid the stress of waiting in queues in the bank or traffic jams en route to perform their bank transactions (Wright, 2002; Cheung and Lu, 2004).

Lower charges: usually most Internet banking services cost less or even free of charge compared to traditional banking services, especially for non-business customers, which encourages customers to carry out their bank transactions online (Radulescu and Serbanescu, 2009). Furthermore, some banks offer low interest rates on their online loans and credit cards as a method to encourage their consumers to use Internet banking and enable them to benefit fully from this new banking service.
2.4.2.2 Disadvantages of Internet Banking

Although the adoption of Internet banking offers many advantages it also has several disadvantages. The recent literature regarding Internet banking identified two key disadvantages from a commercial bank perspective as follows:

**High implementation cost:** the cost of implementing online banking outweighs the benefits of the Internet banking in developing countries as the implementation of new technology requires a high investment budget (Al-Hajri and Tatnall, 2007). It may be perceived that the nature of technology is developing fast and to catch up with the latest technology may cost banks huge amounts of money. Furthermore, the benefits of implementing Internet banking depend on the customers’ acceptance of new technologies. Acceptance includes a number of constructs, such as the relative advantage, ease of use, social factors, complexity, facilitating conditions, security, trust and perceived usefulness (Taylor and Todd, 1995a; Venkatesh and Davis, 2000; Chau, and Hu, 2001; Venkatesh et al., 2003; Tétard and Collan, 2009; Yousafzai et al., 2009, Lin and Chang, 2011).

**Technical glitches:** Internet banking may face some dramatic technical problems which can negatively impact service quality and consumer satisfaction. To overcome this, banks provide their Internet banking customers
with additional electronic services that can be used to operate their banking transactions without delay when there are technical problems and customers cannot access their accounts on the Internet (Mahmood, 2009), e.g. free telephone banking service and SMS – based mobile banking services.

On the other hand, the most recent literature regarding Internet banking identified two key disadvantages from a commercial bank customer perspective as follows:

**Security and Trust:** according to Mahmood (2009) and Palvia (2009) many bank customers do not accept and trust Internet banking because of security and risk issues. Customers are worried about using Internet banking services as it might breach the security of their personal banking information and money. They are afraid that hackers can steal their Internet banking password and access their accounts to steal their money. Recently, to overcome this weakness, banks have started to provide online users with additional security software that they can download free from the bank website before they start using their online bank account.

**Face-to-face interaction:** the lack of physical interaction through using Internet banking may affect the adoption and acceptance of Internet banking. Many customers prefer to carry out their bank transactions in their local branch where they can interact with bank tellers. According to Fair Investment (2006), a number of bank customers prefer to use traditional banking services rather than
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Internet banking services. Accessing traditional banking services requires customers to be able to visit a nearby branch.

Table 2.2 summarises the advantages and disadvantages of Internet banking from a bank and customer perspective.

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank</td>
<td>Cost savings</td>
<td>High implementing cost</td>
</tr>
<tr>
<td></td>
<td>New marketing channels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High efficiency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improvement of the banks reputation</td>
<td>Technical Glitches</td>
</tr>
<tr>
<td></td>
<td>Enhancement of customer services and satisfactions</td>
<td></td>
</tr>
<tr>
<td>Customers</td>
<td>Availability</td>
<td>Security and Trust</td>
</tr>
<tr>
<td></td>
<td>Time saving</td>
<td>Human (face-to-face) interaction</td>
</tr>
<tr>
<td></td>
<td>Lower charges</td>
<td></td>
</tr>
</tbody>
</table>

2.5 Barriers to the Adoption of Internet Banking by Banks

In wider business environments, such as the banking industry, difficulties and barriers are encountered by organisations which are willing to adopt and launch new services, especially in the early stages of adoption. This section highlights the main barriers that may face banks that are willing to develop new services based on advanced technologies. The barriers of Internet banking adoption are detailed below.

Organizational management: the banks' attitude towards advanced technologies is considered one of the main barriers with regard to the adoption
of Internet banking (Chircu and Kauffman, 2000; Farhoomand et al., 2000). In this regard, Speece (2000) explained that banks which are considered as a high users of advanced technologies can adopt Internet banking more easily than less experienced banks and is reflected in the bank staff’s acceptance of Internet banking. Those banks provide employees with appropriate training which leads to a higher staff acceptance (Rotchanakitumnuai and Speece, 2003). In addition, banks have to pay attention to their customers in order to motivate them to accept and use Internet banking, especially as the majority of bank customers prefer to use other electronic functions, such as ATMs and telephone banking (Aladwani, 2001; Suganthi et al., 2001). Finally, Sayar and Wolfe (2007) indicated that development technologies allowed new suppliers to offer financial services, which led to an increase in industrial competition and made banks more aware of the importance of the quality of their services and customer satisfaction in driving customer decisions about their choice of bank.

**Customer satisfaction:** One of the main barriers to the adoption of Internet banking is end user satisfaction, or more precisely, customer acceptance of Internet banking (Pikkarainen et al., 2004; Lichtenstein and Willamson, 2006). Customer acceptance in this regard depends on a combination of factors which will be studied in detail in the next chapter. There are three specific barriers to the adoption of Internet banking. Firstly, low customer awareness of the benefits and importance of Internet banking, in general (Aladwani, 2001). Secondly, lack of computing knowledge by customers (Suganthi et al., 2001). Thirdly, Zugelder et al. (2000) and Liao and Cheung (2008) clarified that concerns about security
may also contribute to lack of acceptance or satisfaction because of the perceived threat of unauthorized access to customers’ accounts, system failures or potential loss of money and/or information by simply hitting the wrong computer key.

**Environmental culture:** it has been identified that societal culture has a major impact on the propensity of existing and prospective customers to accept Internet banking (Karjaluoto et al., 2002). Customers’ attitudes to changes from traditional banking to Internet banking is deemed to be a major barrier that cannot be ignored. In this context, the lack of human interaction while using Internet banking is considered a strong source of dissatisfaction by bank customers (Srijumpa et al., 2002; Fair Investment, 2006). Moreover, Howcroft and Durkin (2000) explained that the majority of customers, especially in developing countries, prefer to build strong relationships with their bank through interaction with staff, which may be difficult with self-service technologies (e.g. Internet banking). In particular in Oman, the Ministry of Heritage and Culture (2011) recognised that any new changes that occur in Omani culture usually take a long time to be accepted. The reasons for this are that Omani culture is very conservative and resistant to change. The government and other stakeholders have to take this issue into serious consideration in terms of proposed changes in any industry in the country, not just changes in the banking industry.
Government support: legal protection of customers is considered to be a major barrier to the adoption and acceptance of electronic commerce (Zugelder et al., 2000). In order to build confidence amongst those customers who are willing to use Internet banking, appropriate legislation relating to Internet banking is deemed to be an absolute prerequisite. Larpsiri et al. (2002) suggested that a lack of a specific Internet banking law in a country negatively affects the adoption and acceptance of Internet banking. In addition, Al-Sabbagh and Molla (2003) discussed the lack of quality and high price of the Internet as a fundamental reason that influences the adoption and acceptance of Internet banking in developing countries, specifically in Oman. Therefore, a government has to support electronic commerce in general by controlling the quality and cost of Internet provision and allowing new providers of Internet services to enter the market. Furthermore, Al-Sabbagh and Molla (2003) explained that delays in the provision of Internet banking in some developing countries is due to the lack of market data and this influences a banks’ management decisions in relation to whether to implement the adoption of Internet banking systems or to postpone it.

Technology challenges: The nature of technology nowadays is developing fast and to catch up with the latest technology may cost banks huge amounts of money which may in turn negatively impact a bank’s short-term profitability (Al-Hajri and Tatnall, 2007). Banks considering the adoption of Internet banking have to be aware of the potential costs involved in keeping pace with
technological development and providing their customers with high-quality services. Moreover, Internet banking can face dramatic technical problems which would negatively affect service quality and consumer satisfaction (Parasuraman, 2000). In this regard, banks have to provide their Internet banking users with alternative electronic channels that can be used to operate their transactions in the event of technical glitches (Mahmood, 2009).

**Trust:** Opportunities for Internet banking could be restricted if there is a lack of customer trust (Rotchanakitumnual and Speece, 2003). In this regard, customer trust in Internet banking comprises of three levels of trust: trust in the bank, trust in the Internet and trust in the Internet banking system (Lee and Turban, 2001; Yousafzai *et al.*, 2009). Saparito *et al.* (2004) explained that trust in a bank is gained from customers’ beliefs regarding the bank. Customers may be concerned about using Internet banking services because of privacy and security issues and that hackers can steal their Internet banking password and access their accounts. This fear goes beyond the mere threat of losing personal information and extends to a deep-rooted belief that by using the Internet for financial transactions, their money will be stolen (Mahmood, 2009; Palvia, 2009; Zhao *et al.*, 2010). Therefore, it may be perceived that trust in the Internet is considered as a prerequisite to trust in Internet banking. In addition, McCole (2002), as well as Wang and Emurian (2005) emphasised that trust in Internet banking was dependent on customers’ trust in information provided through the Internet banking which has to be accurate, complete and relevant.

Figure 2.4 summarises the main barriers to the adoption of Internet banking.
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Figure 2.4 Main barriers of Internet banking adoption

2.6 Global Internet Banking Trend

Recently, both the public and the private sectors have become more dependent on the Internet by building new communication channels with their clients in order to improve the quality of service they offer and market their products to a greater portion of customers around the world (Eyob, 2004; Lassar et al., 2005; Lichtenstein and Williamson, 2006; Littler and Melanthiou, 2006; Weisberg et al., 2011). Individuals use the Internet extensively for various reasons: firstly, e-mail; secondly, academic or non-academic information searches; thirdly, online banking (Palvia, 2009). In this regard, Eurostat (2011) reported that the number of Internet users in Europe was increasing rapidly. For example, around 75% of
households in Europe accessed the Internet for various reasons (e.g. e-mail, chat, search, Internet banking) during the first three months of 2011. This compared with 50% during the same period in 2006. Furthermore, the number of households who had a broadband Internet connection between 2007 and 2008 increased by 38 percent (30% to 68%). The same report mentioned that approximately 30% of European individuals used Internet banking during 2011.

However, the global adoption of Internet banking services has created a problem as some (generally developed) countries appear to accept Internet banking more than others (generally developing) countries (Kunt and Detragiache, 1998). Howcroft and Durkin (2000) explained that although some developing countries (e.g. East Asian countries) perform much better than others creating a further sub-group. Moreover, a number of specialized technology companies have recently transferred their activities from the developed countries to East Asian, which could lead these countries to adopt advanced technologies more quickly than other developing countries (Niosi et al., 1995).

Previous studies have demonstrated that the adoption, implementation, acceptance and use of Internet banking was developed over time in four specific geographical clusters (Schneider, 2001; Infotech, 2003; Guru et al., 2003; Pikkarainen et al., 2004; Radhakrishna, 2009; Sisk, 2009). The first cluster to adopt the Internet banking was the USA and Canada in the early 1990s (Radhakrishna, 2009). This was followed by Europe and Australia
(explained by the two regions having similar laws and governance arrangements) in the mid 1990s (Pikkarainen et al., 2004). The third cluster was the Asia region around the turn of the new millennium (2000) (Infotech, 2003). The fourth cluster comprise the late adopters of advanced technologies, particularly Internet banking, was the Middle East around 2002 (Guru et al., 2003).

2.6.1 Internet Banking in USA and Canada

Since the USA introduced Internet banking in the early 1990s, the banking industry has been dealing with the fundamental shift from traditional banking channels towards self-service channels (Radhakrishna, 2009). Sarel and Marmorstein (2003) noted that USA bank customers who tried online services were reluctant to transfer from traditional banking to Internet banking to become active users. However, in 2004, Kolodinsky et al. argued that the use of electronic banking channels, in general, and Internet banking in particular, had grown rapidly over the last 20 years, about 91% of American households have a bank account and approximately 93% of them use electronic funds transfer, which signals a successful shift towards electronic banking. In 2007, Kuisma et al. (2007) identified that 44% of the USA Internet users had tried Internet banking and they were willing to shift to electronic banking. However, Mazur (2007) argued that Internet banking in the USA had yet to reach maturity. Cai et al. (2008) found that older bank customers were less likely to deal with Internet banking services than younger customers and customers living in the south of
the country were more willing to use Internet banking than those who lived in the northeast.

Canada is near the USA and is similarly categorized as a developed country. Daniel (2004) explained that when comparing the number of Internet banking users to those visiting bank branches in the major Canadian cities, the number of Internet banking users is increasing while the number of branch visitors is declining. Thus, Canadian banking consumers are willing to transfer from traditional to Internet banking and do not have any difficulties. Again, younger Canadians were more likely to use Internet banking than older customers (ComScore, 2008).

Sisk (2009) reported that 53% of Canadian bank customers applied for Internet banking services in 2008 which suggests that Canadians are comfortable with Internet banking services. Furthermore, 79% of Canadians believed that the adoption of developing technology had made banks more convenient; 80% thought that the system of Internet banking on offer was safe and secure.

2.6.2 Internet Banking in Europe and Australia

Internet banking started in Europe in the mid-1990s and European banks worked hard to shift their customers successfully from traditional to electronic banking (Pikkarainen et al., 2004). Thus, Internet banking had a major impact
on the European banking industry, which led them to being the leader in Internet banking adoption and acceptance globally (Schneider, 2001).

Meyer (2006) explained that European banking customers were more willing to adopt and accept Internet banking as they did not discriminate between e-commerce and Internet banking. Individuals who normally shopped online were more willing to complete their banking transactions via the Internet. Furthermore, a high percentage of Internet banking users in European countries (around 36% according to Meyer, 2006) had not stopped branch visits. In fact, there were some Internet banking users who visited their bank branch more often. Also the adoption and acceptance of Internet banking in Europe was lower in the south than in the north (see Figure 2.5).

Figure 2.5: Adoption of Internet banking varies across European countries [Source: Meyer, 2006]
Chapter Two: Review of Banks and Internet Banking Services

The use of Internet banking in Northern Europe had reached around 80% in some countries, such as Finland and Denmark, while the percentage was less than 10% in Bulgaria (Meyer, 2006). This may be the result of the dissolution of the Soviet Union and may be linked to wider issues in relation to the adoption of development technologies in general. Meyer (2006) explained that in general younger males, especially those with higher incomes, and highly-educated European individuals are more willing to accept and use Internet banking services. This is in line with acceptance patterns in USA and Canada. However, it is anticipated that in future the use of Internet banking services will rise to 90% in some European countries.

Similarly, the Australian banking industry has also implemented Internet banking successfully. This is because more than two thirds of banking customers completed their weekly banking transactions through Internet banking, and 16% of them were banking online daily. As in the USA, Canada and Europe younger male customers with high incomes and well-educated individuals felt more comfortable with banking transaction online (Lichtenstein and Williamson, 2006; Yeow et al., 2008).

2.6.3 Internet Banking in Asia

At the beginning of the century Asian banks started to provide their consumers with Internet banking services (Infotech, 2003). A survey of Asian Internet
banking users revealed that the number of users in South Korea, Hong Kong, Singapore, China and Taiwan doubled between 2001 and 2003. In 2003 38% of Internet users were considered to be active Internet banking users compared with 16% and 29% during 2001 and 2002, respectively (Infotech, 2003). Gledhill (2009) reported that Internet banking service use in Asian countries were still increasing.

The oldest Internet-only bank is in Japan (Japan Net Bank) and by 2007 Japan had four Internet-only banks (eBANK, Japan Net Bank, Sony Bank and Seven Bank) supplementing their online services with telephone support for technical problems (Sattabusaya, 2008). Therefore, the Japanese are enthusiastic adopters of Internet banking. Up to 73% of their accounts related to male clients and 87% of their customers were aged less than 40 years (Farhoomand and Mak, 2002; Sattabusaya, 2008).

Malaysia, Thailand and India have also implemented Internet banking services. In general Internet banking in these countries is still in its infancy and uptake is relatively low. However, the local banks in Malaysia, Thailand and India face strong competition as the banks strive to compete with foreign banks (Abdul-Hamid et al., 2007; Ravi, et al., 2007). In reaction to changes in the industry, banks in these countries started to train their customers to use Internet banking services in order to increase the number of Internet banking users and service quality. In addition, Haque et al. (2009a) explained that Asian Banks provided
online customers with a range of assisted services (e.g. help desks, call centres and on-line assistance) to help them use Internet banking.

2.6.4 Internet Banking in the Middle East

The Middle East area consists of different individual nations which, according to the United Nations (UN), are categorized as developing countries. The adoption of Internet banking in this region has been described as largely ineffective (Al-Sukkar and Hasan, 2005). Organizations and individuals in this region are reluctant to accept self-service technologies (Khalfan et al., 2006). Furthermore, Al-Hajri and Tatnall (2007) emphasised that bank managers in several Middle East countries perceived that the cost of the adoption and implementation of Internet banking services outweighed its benefits. In addition, some researchers concluded that Middle East individuals are anxious about dealing with e-commerce in general and Internet banking in particular (Khan, 2007; Kassim and Ismail, 2009), due to a lack of trust.

It seems that the adoption of Internet banking in the Middle East region has developed slowly compared with other regions, particularly Europe and Asia (Al-Somali et al., 2009). Guru et al. (2003) stated that the majority of the Middle Eastern countries are still in their infancy in developing Internet banking services with much scope for improvement. However, the Middle East region is rapidly catching up and has recorded phenomenal growth statistics (Internet world stat, 2009).
In spite of the high percentage of Internet users in the Middle East region, Al-Sukkar and Hasan (2005) explained that they were not Internet banking users. According to a study conducted by Gartner (2008) 4770 Internet users from 18 different countries, belonging to three different regions in the Middle East were surveyed. Almost all the individuals surveyed used the Internet for e-mail and searching, with Internet banking ranking third. The high growth of Internet users in the Middle East region suggests a shift towards Internet banking which could be a reality if all the necessary facilitating factors are available, such as government acceptance of Internet banking; banks' ability to adopt and launch Internet banking; high Internet connection quality, and effective security systems.

2.7 Structure of the Banking Industry in the Sultanate of Oman

According to the United Nations and International Monetary Fund the Sultanate of Oman classified as a developing country. This related to different economic measurements, for instance, degree of economic development which includes domestic product (GDP), the capita income (per person), level of industrialization, amount of widespread infrastructure and general standard of living (United Nations Statistics Division, 2011). Since 1970 the Omani government has focused on developing its economic infrastructure, such as electricity, roads, ports, natural resources, communications and financial industry (Ministry of Information, 2001). When developing the Omani financial
industry, the Omani government focused on the banking sector due to its key role in maintaining financial equilibrium and economic stability (Ministry of Information, 2008). In 1974 the Omani government took a decision to establish the Central Bank of Oman (CBO) to lead the banking and financial industry. The CBO played a major role in developing and regulating the banking industry, issuing, and safeguarding the stability of, the national currency Omani Rials (RO) at home and abroad and maintaining the national economy (Omanet, 2008). The capital base of CBO was established with RO 1 million and reached to RO 300 million by 2002. By the end of 2010 the total capital reached RO 1240.9 million (Omanet, 2008; Central Bank of Oman, 2011).

The Omani banking industry, according to the CBO (2011) comprised of 19 banks. 17 of these were considered as commercial banks, of which seven were locally incorporated and ten were branches of foreign banks. There were two specialist government banks in Oman: the Oman Housing Bank (9 Branches) and the Oman Development Bank (14 Branches), that provide soft financing to mainly low and middle-income Omanis to build or purchase residential property and to private sector investors to finance small projects. The 17 commercial banks had 459 branches operating across Oman, of which 421 branches related to local Omani banks and 38 branches of foreign banks operating in Oman. In addition, local banks had 11 branches and one representative office abroad. There were no Islamic banks in the Omani banking industry until 2011. Figure 2.6 outlines the structure of Oman’s Bank industry in 2011 and number of branches of each bank.
As shown in Figure 2.6, seven commercial local Omani banks provide services for their customers through 421 branches in different parts of Oman. Some electronic banking functions have been adopted in the Omani banking industry, such as telephone banking, mobile banking and ATMs. E-commerce (2009) identified only four local banks providing Internet banking services, although this proved to be six when the field work was undertaken. The government created its two specialized banks in order to support the national development efforts in particular sectors. However, these specialised banks operated their services through 23 branches in various parts of Oman. The ten foreign banks had
Chapter Two: Review of Banks and Internet Banking Services

launched various electronic banking functions, such as ATMs, telephone banking, mobile banking and Internet banking (Central Bank of Oman, 2009).

2.8 Internet Banking in the Sultanate of Oman

General policies in the Omani banking industry have tended to focus on traditional banking methods with banks aspiring to maintain and increase customer loyalty by operating their services nearby their consumers (Al-Sabbagh, 2003). The adoption of Internet banking in Oman is still at an early stage, as the first implementation of Internet banking was in 2005 by the National Bank of Oman and the Muscat Bank (e-commerce, 2009). Until 2010 six local Omani banks (Muscat Bank, National Bank of Oman, Sohar Bank, Oman Arab Bank, Bank Dhofar and Ahli Bank) adopted the Internet banking system. It may be perceived that it is not possible to compare the adoption of Internet banking in Oman with other countries, such as Western countries and Eastern Asia. This is due to different issues, for instance the adoption environment and the constructs that affect the adoption procedure. Additionally, it is noted that if a new technology system is adopted successfully in one country it is not necessarily to succeed in another.

Furthermore, there are a number of reasons for the late adoption of the Internet banking technology in Oman some of which are due to the government, banking industry and bank customers' acceptance. According to Al-Sabbagh and Molla (2003), the lack of government support and statistical information, poor quality
of Internet connection and the slow-download speed of webpages are fundamental reasons that have influenced the adoption of Internet banking in the Omani banking industry. Nevertheless, trust, security, data confidentiality, culture and human interaction are all considered as major elements that affect the adoption of Internet banking (Khalfan et al., 2006). Ultimately, Al-Hajri and Tatnall (2008) noted that the speed of technological development, especially with regard to the banking industry, is one of the obstacles that hindered the Omani banking industry in the early adoption of Internet banking when compared with other developed countries.

Currently, all Omani local banks maintain information websites in order to provide their clients with all basic and necessary information they need and at any time during the day (Saqer, 2009). E-commerce (2009) reported that Omani local banks provide their customers with a limited range of Internet banking services (e.g. checking balance; view and print transaction history; pay utility bills; pay the credit card bills; order cheque books; transfer money between the customer bank accounts).

According to Internet world stats (2009), the number of Internet users in Oman has increased between 2000 and 2009, from 90,000 users in 2000 to 465,000 users which represents 13.6% overall of the Omani population. Approximately 158,000 Internet users (5.62%) used retail e-commerce spending US$ 236,000,000 in 2008 (Saqer, 2009). This gives a good assessment of the future
adoption and acceptance of e-commerce in general and Internet banking in the Sultanate of Oman.

2.9 Summary

It is widely recognised that the banking industry occupies an essential position in the global economy. The development of banking services is inseparable from the development of the monetary system; all bank transactions rely on the circulation of money. During the last 30 years the banking industry started to undergo a significant transformation starting in the USA, moving across Europe and Australia and then onto rest of the world. Banks around the world have been affected by the changes in the remote environment indirectly through changes in the operating environment. Therefore, the banking industry was forced to progress through a significant transformation in their services; this was related to the appearance of advanced technologies and electronic commerce. In addition, the adoption of new technologies influenced banks to provide their consumers with a diversified and convenient range of financial services reliant on self-service techniques. This has allowed bank customers to feel more satisfied as they can access their accounts at any time during the day 24/7 and from different locations.

The nature of any technological development, such as Internet banking, has both advantages and disadvantages from a provider and customer perspective. Banks willing to adopt Internet banking normally encounter a variety of
challenges and barriers, especially at the early stages of adoption. Some of these barriers result from service provider management, whilst others result from external factors, such as customer satisfaction, culture and government support. Some countries appear to adopt Internet banking better than others. It seems that the success of Internet banking is not the same in all banks as it depends on the banks' management, government policies and customers' acceptance of Internet banking.

The Omani banking industry comprises the CBO, commercial and specialist banks. These banks are working to enhance the Omani national economy and provide bank customers with high-quality banking services. All Omani local banks maintain an information website to provide their customers with all essential information. However, six Omani local banks provided their consumers with Internet banking services.

The next chapter will reviews literature on technology acceptance theories to identify suitable conceptual framework for this study that identify the key factors that influence acceptance of Internet banking in the Sultanate of Oman.
CHAPTER THREE: LITERATURE REVIEW OF TECHNOLOGY ACCEPTANCE MODELS AND RESEARCH FRAMEWORK

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3.1 Introduction

This chapter critically reviews and evaluates literature in relation to the acceptance of new technology, with a specific focus on the key factors that affect bank customers' behavioural intentions for the acceptance and use of Internet banking. The chapter starts with an overview of the different technology acceptance models to identify the various factors that affect the acceptance of new technology. Section 3.3 justifies the selection of the unified theory of acceptance and use of technology (UTAUT) model in this research. Section 3.4 evaluates the UTAUT model and focuses on its definition and conception. Section 3.5 proposes modifications to the UTAUT model to develop a comprehensive conceptual framework that examines bank customers' acceptance of Internet banking in the Sultanate of Oman. Section 3.6 discusses the research conceptual framework based upon the critical review of literature. Section 3.7 summarises the entire chapter.
3.2 An Overview of Technology Acceptance Models

Information systems provide technology to enhance organizational and individual performance (Cameron and Webster, 2005). However, new technologies cannot be effective unless they are accepted and used. The theme of users' acceptance of new technology has been well researched during the last three decades, and has provided researchers with several technology acceptance theories and models that predict and explain the power of individual behavioural intentions to the acceptance and use of new technology (Taylor and Todd, 1995a; Venkatesh and Davis, 2000; Chau, and Hu, 2001; Venkatesh et al., 2003; Tétard and Collan, 2009; Lin and Chang, 2011).

This research will consider the more widely-used technology acceptance models which have been improved subsequently and developed on each other. These models and theories are: theory of reasoned action, technology acceptance model, motivational model, theory of planned behaviour, combined technology acceptance model and theory of planned behaviour, model of PC utilization, innovation diffusion theory, social cognitive theory, unified theory of acceptance and use of technology, technology task fit and lazy user theory. Each of these will be discussed in turn.

**Theory of Reasoned Action (TRA):** This theory was developed by Ajzen and Fishbein in 1980 and was derived from social psychology settings. It proposes
that the use of technology is determined by a user's behavioural intention influenced by their attitudes towards their behaviour and their subjective norms (Ajzen and Fishbein, 1980; Robinson, 2006).

**Technology Acceptance Model (TAM):** The TAM was developed from the TRA in 1989 by Davis. Initially, this theory was applied to give a clear view of the usage determinants of computer acceptance and evaluated the influence of different system characteristics on user acceptance. Moreover, the theory proposed that when end-users are presented with the latest technology, several elements affect their decisions in relation to how and when they will use this new technology (Davis, 1989; Loke, 2008; Lee, 2009). The TAM proposes that the acceptance of technology is determined by users' intentions towards use behaviour influenced by perceived usefulness and ease of use. In 2000, a related model developed from the TAM by Venkatesh and Davis (2000) -TAM2- included subjective norm as an additional predictor of intention in mandatory situations.

**Motivational Model (MM):** This model was formulated and developed through psychology research (Davis et al., 1992). In this regard, there are significant research studies in psychology which support the relationship between motivation theory and behaviour. Motivation is an explanation of users' attitudes and intentions towards the acceptance and use of the developed technology (Davis et al., 1992; Saadé et al., 2008). Therefore, Davis et al. (1992) explained that their motivational model contains intrinsic and extrinsic motivational
constructs to understand the selection, implementation, acceptance and use of new technology in the field of information systems.

**Theory of Planned Behaviour (TPB):** In 1991 Ajzen extended the TRA theory by adding one new element to the original model. The TPB theory incorporated perceived behavioural control as an additional determinant of behavioural intentions and actual behaviour (Ajzen, 1991). In 1995 a related model, developed from the TPB by Taylor and Todd (1995a), was the decomposed theory planned behaviour (DTPB) which is similar to the TAM and focused on the fundamental beliefs about technology acceptance.

**Combined Technology Acceptance Model and Theory of Planned Behaviour (C-TAM-TPB):** Taylor and Todd (1995a) combined two different theories, TAM and TPB into one acceptance theory named C-TAM-TPB. They combined the perceived usefulness of TAM with the original TPB model to provide a hybrid acceptance model which can be used within technology acceptance frameworks (Taylor and Todd 1995a; Chen and Chen 2009).

**Model of PC utilization (MPCU):** The concept of the MPCU derived from a theory of human behaviour developed by Triandis in 1977. Triandis' human behaviour model has been tested by different researchers in order to determine the possibility of using it in other sciences. Thompson et al. (1991) adopted Triandis' model for the information system framework to predict PC utilization. The characteristics of the MPCU focus on an individual's behaviour in regards
to the acceptance and use of different and new information technology (Riemenschneider et al., 2002). It seems that this theory presents a competing theory to that provided by TRA and TPB, as it was more focused on the factors that affect the acceptance of the technology. The model contains six constructs (job-fit, complexity, long-term consequences, affect towards PC use, social factors and facilitating conditions) that influence individuals' behavioural intentions towards the acceptance of new technology.

**Innovation Diffusion Theory (IDT):** Moore and Benbasat (1991) developed the IDT theory to explain the acceptance of new and innovative technology (Moore and Benbasat, 1991; Teo and Pok, 2003). According to Rogers (1995) the IDT was initially used in the agricultural industry during the 1960s and contained four different elements which influence the acceptance of innovation: the innovation itself; communication; time to accept a new technology; the social system. Moore and Benbasat (1991) adapted the innovation diffusion theory so that it was applicable to technology acceptance research. In addition, the acceptance of innovation involves a risk since it is new (Bhatnagar et al., 2000). The theory contained seven constructs (relative advantage, ease of use, image, visibility, voluntariness of use, results demonstrability and compatibility) that influence individuals' behavioural intentions towards the acceptance of new technology.
Social Cognitive Theory (SCT): The SCT was derived from the Social Learning Theory (SLT) which was introduced by Miller and Dollard (1941). In 1986 Bandura developed the SCT as one of the most influential theories focusing on human behaviour (Bandura, 1986; McCormick et al., 2006). Additionally, Compeau and Higgins (1995b) extended SCT for computer utilization and initially used the model to study computer acceptance. This was developed further and the model was extended to measure the acceptance and use of information technology (Compeau and Higgins, 1995b). The theory contained five constructs (outcome expectations performance, outcome expectations personal, self-efficacy, affect, anxiety) that influence individuals' behavioural intentions towards the acceptance of new technology.

Unified Theory of Acceptance and Use of Technology Model (UTAUT): The acceptance technology model was developed by Venkatesh et al. (2003) who combined eight different theories into one unified model of acceptance theory focusing on intentions and users' behaviours. The model contained four constructs (performance expectancy, effort expectancy, social influence and facilitating conditions) that influence individuals' behavioural intentions towards the acceptance and use of new technology and four moderators (gender, age, experience and voluntariness of use).

Technology Task Fit (TTF): Goodhue and Thompson (1995) developed the TTF arguing that information technology has a positive impact on an individual's
performance if the new technology system provides end users with the necessary requirements. The TTF theory measures user acceptance of the new technology in order to enhance their job performance (Goodhue and Thompson, 1995). The model consists of three constructs: the utilization of individual abilities, technology characteristics, and task requirement.

Lazy User Theory (LUT): Tétard and Collan (2009) developed a dynamic technology acceptance theory in order to understand users' selection of available services or products; they called this the Lazy User Theory (LUT). This theory is based on two constructs, firstly users select a technology dependent on their own requirements, and secondly they choose a technology which is user-friendly.

It may be argued that the given models are widely used in technology acceptance. However, it is apparent that almost all of the models are based on the TRA model developed by Ajzen and Fishbein in 1980. For example, the TAM was based on the TRA, in addition to TPB and C-TAM-TPB, plus IDT. However, Venkatesh et al. (2003) incorporated the various technology acceptance models and their extensions in a comprehensive model called the UTAUT, which depends mainly on eight different theories that have been developed based on the TRA.
3.3 Justifying the Use of the Unified Theory of Acceptance and Use of Technology Model (UTAUT)

After reviewing the various technology acceptance theories, it seems that the UTAUT model is the most appropriate conceptual framework for this research. It is derived from eight acceptance theories plus their extensions and takes account of the most important factors that impact technology acceptance.

The UTAUT theory considers the constructs that affect the acceptance of new technology with particular reference to whether this acceptance is voluntary or mandatory (Yeow et al., 2008). In order to encourage users to accept and use new technology a variety of methods can be used. These methods may be classified as optional and compulsory. The UTAUT enable the measurement of whether the users' acceptance and usage of the Internet banking is voluntary or mandatory.

The UTAUT recognises constructs which differ between developing and developed countries. The acceptance of new technology is usually influenced by a range of factors which may vary from one community to another. For instance, the constructs that affect the acceptance of Internet banking in developed countries are not necessarily the same constructs that influence the acceptance of Internet banking in developing countries. When comparing the UTAUT model with other technology acceptance models the UTAUT covers
70% of the variance that affect the acceptance of new technology in different societies (Bandyopadhyay and Fraccastoro, 2007).

The UTAUT is a technology acceptance model that can be implemented in different science fields (Hennington and Janz, 2007). Thus, UTAUT theory is not exclusively focused on a particular sector and it can be used in the banking industry in order to identify the main factors that affect bank customers' behavioural intentions towards the acceptance and use of Internet banking.

The UTAUT model has been recognised as a powerful model for the evaluation of technology acceptance. Hennington and Janz (2007) emphasised that the UTAUT model is currently one of the most comprehensive, inclusive and powerful technology acceptance models. Bandyopadhyay and Fraccastoro (2007) argued that the UTAUT model has been applied in more participative organisational cultures where people can make their own decisions in relation to technology acceptance, as this particular theory was created in a developed country context (USA). Moreover, Lin and Anol (2008) and Yeow et al. (2008) emphasised that UTAUT is an inclusive model that can used to explore the acceptance of new technology in different fields.

Moreover, the UTAUT model was implemented in several studies to explore individual acceptance and usage decisions of technology in developing countries. In this regard, Bandyopadhyay and Fraccastoro (2007) studied the effect of culture on user acceptance of information technology in India using the
Chapter Three: Literature Review of Technology Acceptance Models

UTAUT model. The findings indicated that performance expectancy, effort expectancy and social influence were significant constructs that influenced customers' behavioural intentions towards the acceptance and use of prepayment metering systems. Lin and Anol (2008) applied the UTAUT model to the phenomenon of learning online social support in Taiwan. The findings showed that all model constructs are significant except the facilitating condition construct was insignificant.

Loke (2008) studied the merchants' personal and perceptions of merchants towards the credit card payments in Malaysia. The findings demonstrated that the most constructs that played a significant role in a merchant's decision were performance expectancy and social influence constructs of the UTAUT model. Abdul-Rahman et al. (2011) demonstrated the influencing constructs for generic information system using tablet personal computer and mobile communication in Malaysia based on a modified UTAUT model. The findings indicated that performance expectancy, effort expectancy and information quality were significant, while service quality was insignificant related to users' behavioural intentions towards the acceptance and use of technology. It can be conclude that UTAUT model is a usefulness technology acceptance model that can measure the acceptance and usage of technologies in different developing countries fields.

It is anticipated that the technology acceptance model will need some modifications to fit the requirements of this study and the nature of the research
population. Such modification may require the addition or deletion of particular factors so it can be used in the context of a developing country, e.g. the Sultanate of Oman, to explore the acceptance of Internet banking.

3.4 Unified Theory of Acceptance and Use of Technology

As already mentioned the UTAUT model combines eight different theories (TRA, TAM, MM, TPB, C-TAM-TPB, MPCU, IDT and SCT) into a unified model focusing on users' behavioural intentions to accept and use of new technology. Venkatesh et al. (2003) explained that after reviewing and consolidating the eight different models, seven elements were found that impact behavioural intention and usage as follows:

- Performance expectancy.
- Effort expectancy.
- Social influence.
- Facilitating conditions.
- Attitude toward using technology.
- Anxiety.
- Self-efficacy.

Moreover, four moderators (age, gender, experience and voluntariness of use) were identified that impact major consequences (Venkatesh et al., 2003; Hennington and Janz, 2007).

Venkatesh et al. (2003) examined the model and discovered that there were three factors (performance expectancy, effort expectancy, and social influence)
that had a significant influence on usage behaviour through the behavioural intention. *Facilitating conditions* contributed directly to usage behaviour. However, the remaining three elements (attitude towards using technology, self efficacy and anxiety) did not have any major effect on behavioural intention or usage behaviour (Venkatesh et al., 2003; Mazman and Usluel, 2009). Venkatesh et al. (2003) justified their findings that attitude towards using technology was important only in relation to specific cognitions related to performance and effort expectancies. Consequently, attitude toward using technology impacts on intention and usage behaviour through performance and effort expectancies. Alternatively, self-efficacy and anxiety have no direct determinants as they are conceptual from *effort expectancy* as a perceived ease of use. Thus, Venkatesh et al. (2003) presented the Unified Theory of Acceptance and Use of Technology (UTAUT) (see Figure 3.1).

![Figure 3.1 Unified Theory of Acceptance and Use of Technology Model (UTAUT) [Source: Venkatesh et al., 2003].](image-url)
To understand the contents and features of the UTAUT model, the UTAUT model constructs and moderators will be defined as follows:

- **Performance Expectancy**: is the level to which an individual believes that using new technology will assist them to reach a high-level of job performance (Venkatesh and Davis, 2000; Venkatesh et al., 2003). Furthermore, Pikkarainen et al. (2004) and Yeow et al. (2008) clarified that individuals accept and use new technology (e-services) when they understand its usefulness and relative advantage. Hennington and Janz (2007) pointed out that *performance expectancy* was composed of five related constructs as showing in table 3.1.

<table>
<thead>
<tr>
<th>Performance Expectancy</th>
<th>Root Constructs</th>
<th>Models</th>
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<tbody>
<tr>
<td></td>
<td>Perceived Usefulness</td>
<td>Technology Acceptance Model (TAM)</td>
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<tr>
<td></td>
<td>Extrinsic Motivation</td>
<td>Motivational Model (MM)</td>
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<td></td>
<td>Job-fit</td>
<td>Model of PC Utilization (MPCU)</td>
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<td></td>
<td>Relative Advantage</td>
<td>Innovation Diffusion Theory (IDT)</td>
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<td></td>
<td>Outcome Expectations</td>
<td>Social Cognitive Theory (SCT)</td>
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Additionally, Venkatesh et al. (2003) and Yousafzai and Yani-de-Soriano (2012) found that the relationship between performance expectation and behavioural intention was moderated by age and gender; they found that younger people and males were normally more aware of the usefulness of new technology.
• **Effort Expectancy:** is the ease of use for the end users of a new technology (Plouffe *et al.*, 2001; Venkatesh *et al.*, 2003; Kolodinsky *et al.*, 2004). Hennington and Janz (2007) explained that *effort expectancy* is captured from three related constructs: perceived ease of use (TAM), complexity (MPCU), and ease of use (IDT). In addition, each of these root constructs influence technology acceptance, especially at the early stages of acceptance. Moreover, the relationship between *effort expectancy* and behavioural intentions was moderated by gender, age and experience (Venkatesh *et al.*, 2003). *Effort expectancy* was more salient for older, females and less-experienced users (Venkatesh and Morris, 2000; Venkatesh *et al.*, 2003; Feiertag and Berge, 2008; Yousafzai and Yani-de-Soriano, 2012).

• **Social Influence:** is the level to which an individual perceives others' perspectives regarding the new technology and its suitability for use. In other words how much individuals interact with their social networks and environment to accept and use new technology systems (Venkatesh *et al.*, 2003). Robinson (2006) classified the influence of society into: personal influence (e.g. colleagues, friends and family) and professional influence (e.g. administrators, faculty, staff and top-management). Hennington and Janz (2007) explained that social influence is captured from three related constructs: subjective norms (TRA, TAM2, TPB, DTPB and C-TAM-TPB), social factors (MPCU) and image (IDT). Furthermore, four key moderators (age, gender, experience and voluntariness of use) moderated the relationship between social influence and
behavioural intention as older, females and less-experienced individuals were more aware of other opinions and social influence constructs become none significant in voluntary contexts (Venkatesh et al., 2003).

- **Facilitating Conditions**: is the level to which individuals consider that an organizational and technical infrastructure applicable to support users of the new technology (Venkatesh et al., 2003). Hennington and Janz (2007) declared that facilitating conditions derived from three related constructs: perceived behavioural control (TRA, TPB, and C-TAM-TPB), facilitating conditions (MPCU), and compatibility (IDT). Additionally, two moderators (age and experience) moderated the relationship between facilitating conditions and usage behaviour, as the availability of facilitating conditions were considered to be more important for older and less-experienced individuals in the early stages of technology acceptance (Morris and Venkatesh, 2000; Venkatesh et al., 2003).

- **Behavioural intention**: before taking the decision to accept and use new technology systems, individuals need to have a positive intention towards the new system (Venkatesh et al., 2003). For example, users need to know about the new system: how it works; what benefits they are going to gain after using it; system features; what other people think about this new system. Subsequently, users have to take action to accept or reject the new system, which determines its future use (Wang et al., 2006).
• **Model Moderators:** Venkatesh *et al.* (2003) identified four moderators that affect the relationship between the model constructs and users' behavioural intentions. These moderators are gender, age, experience and voluntariness of use.

### 3.5 Modification of the UTAUT model:

The UTAUT model was developed in the USA a developed country as one of the most comprehensive, inclusive and powerful technology acceptance models that can be implemented in different science fields (Hennington and Janz, 2007). To implement this model in a developing country, such as the Sultanate of Oman, some modification is likely. This section reviews the UTAUT factors and considers the possibility of adding or deleting factors to synthesise an integrated conceptual framework that identifies the main factors impacting the acceptance of Internet banking in the Sultanate of Oman.

#### 3.5.1 Reviews the UTAUT Constructs

As already mentioned the UTAUT model contains four constructs (*performance expectancy, effort expectancy, social influence and facilitating conditions*) and four moderators (gender, age, experience and voluntariness of use). These constructs and moderators will be evaluated in this part.
3.5.1.1 The UTAUT Moderators

Through reviewing the four model moderators, the experience moderator was removed from the model as this moderator was used in other contexts as a proxy for users' experience of technology. However, this does not fit the Omani context. Until recently, there has been a lack of computing skills in Omani society, although recently this has changed as computing is now taught as a core subject in schools (Ministry of Education, 2011). There has also been a growth in the use of the Internet with improved IT infrastructure and a wider availability of computers and technology (Ministry of Information, 2010). If the experience moderator were used, it would not represent a true reflection of the user's experience as their experience is influenced by the country's educational level and IT infrastructure. Moreover, if the experience moderator were used, there would be two distinct groups which would be those before the educational system was changed and the IT infrastructure was improved and those after those changes were implemented. Therefore, if the level of education is used as a moderator, the recent changes in education and IT infrastructure would be better reflected in resultant model.

Nevertheless, Nambisan and Wang (2000), Nafziger (2006) and Kang and Yoon (2008) explained that levels of education have a major impact on technology acceptance, as highly-educated individuals are more likely to accept and use new technologies than less well-educated individuals. Furthermore, it
seems that gender, age and educational level moderators belong to the individual user, thus, these three moderators are combined under one general moderator called the individual moderator.

3.5.1.2 Performance Expectancy

Reviewing the five root constructs (perceived usefulness, extrinsic motivation, job-fit, relative advantage and outcome expectations) of performance expectancy, that were significant either in voluntary or mandatory settings (Venkatesh and Davis, 2000; Venkatesh et al., 2003), it may be argued that the root constructs of performance expectancy contains constructs related to organisation employees and customers performance. Thus, as this study concentrates on bank customers' acceptance of Internet banking, the job-fit root construct which deal with staff performance will be removed.

In addition to what was indicated by Venkatesh et al. (2003) regarding gender and age moderators, Robinson (2006) argued that gender does not moderate the relationship between the performance expectancy and users' intentions as there is no evidence of any significant interactions. Later, Abu-Shanab and Pearson (2007) substantiated the findings of Venkatesh et al. (2003) and showed that gender influences the relationship between performance expectancy and users' behavioural intention to use new technology. Furthermore, Compton et al. (2002) explained that the educational level moderated the relationship between performance expectancy and behavioural
intention, as more well-educated individuals were more aware of the usefulness of technology. Hence, educational level will be added as moderator besides age and gender in this study. Figure 3.2 outlines the study performance expectancy root constructs.

![Figure 3.2: The root constructs of performance expectancy](image)

### 3.5.1.3 Effort Expectancy

Venkatesh *et al.* (2003) clarified that the effort expectancy construct is significant in both voluntary and mandatory usage contexts, especially in the early stages of the system acceptance. In addition to Venkatesh *et al.* (2003) gender and age moderators, educational level influences the relationship between effort expectancy and behavioural intentions, as better educated users are more willing to accept and use new technology compared with less-educated users (Pijpers and Montfort, 2005; Al-Gahtani *et al.*, 2007). Figure 3.3 outlines the root constructs of effort expectancy.
3.5.1.4 Social Influence

By evaluating the social influence construct it seems that it is a part of culture influence. Thus, to study this construct more deeply the social influence construct will be replaced by the culture construct, in order to reach to a comprehensive conceptual framework of Internet banking acceptance in the Sultanate of Oman. In this regard, several researchers demonstrated that culture has a significant impact on the acceptance and use of advanced technologies (e.g. Slowikowski and Jarratt, 1997; Png et al., 2001; Twati and Gammack, 2006; Levy, 2007).

Straub et al. (2002) identified culture as the shared and transferred values between people in a specific human community which influence human attitudes and behaviours. Moreover, Levy (2007) explained that culture normally begins with humans at birth and develops as they grow and learn. It seems that
culture is one of the intangible bonds which dominate and control people who live together. Furthermore, it explains the way that individuals interact with each other within a specific society, as all members share the same language, religion, persuasion, principles, art, beliefs and literature (Lee et al., 2007). In addition, culture is important since it gives an individual his or her unique identity (Schein, 2004; Leung et al., 2005).

Thus, culture is a major factor for the success or failure of technology adoption and acceptance. Tan et al. (1998) noted that some researchers had studied the impact of culture on information system acceptance. Twati and Gammack (2006) recognised that many researchers illustrated that the major reason for the failure in the adoption and acceptance of new technology accrued to not considering cultural influences. In addition, Levy (2007) clarified that if new technology is adopted and accepted successfully in a particular culture it does not necessarily succeed in another. With regard to the culture influence in banking studies, Megicks et al. (2005) similarly noted that culture was a major factor in relation to adoption and acceptance of financial product innovation. Al-Sajjan and Dennis (2010) explained that culture influenced the acceptance of Internet banking.

In order to determine the impact of culture on Internet banking acceptance, Nelson and Quick (2003) reiterated Hofstede's (1980;1991) four dimensions of culture:
This section of the chapter will explore these four cultural dimensions in depth, as it seems that culture is one of the key factors that impact on the acceptance of Internet banking, especially in the societies of developing countries.

1) **Power Distance**: is the degree to which a particular culture accepts hierarchy and unequal distributions of power (Nelson and Quick, 2003; Khatri, 2009; Martinsons *et al.*, 2009). Communities, such as countries or organizations, expect and accept that power is unequally distributed between community members, for example, power distance in a family transfers from parents and other elders to children. Moreover, Chan and Cheung (2008) clarified that in high power distance societies ordinary people are fearful of disagree with decision makers. While, in less powerful countries individuals feel free (or less hesitant) to disagree with the decision makers. In less power distance societies authorities are normally willing to hear from the public before making decisions.

2) **Individualism**: in individualist cultures people belong to a loose social framework, as they tend to focus on their own rights and needs; their major aim is for themselves and their families (Nelson and Quick, 2003; Avery *et al.*, 2008). Muk (2007) agreed with this and explained that in individualist cultures...
people are more concerned with themselves and the relationships between people are weak, as humans are motivated by self-interest and achievement of their own personal aims. Ren and Gray (2009) explained that individualist cultures can be classified in terms of attitudes as people take their decision alone, while collectivist cultures can be classified in terms of norms, on the basis that community members influence each other’s decisions.

Collectivist community members are not concerned solely with themselves. People in this society share, cooperate and believe in group harmony. Moreover, the relationships between people in these cultures are strong. All their decisions are taken by the wider community and therefore, any decision reflects on all members in the community (Martinsons et al., 2009; Ren and Gray, 2009). Societies are classified according to the level of relationships between members as tightness or looseness. Therefore, it could be noted that developed countries can be classified as individualist cultures because people normally live as part of small family and take their decisions on their own, while developing countries are classified as collectivist culture since people live in large communities and their decisions are taken in groups and reflect on all community members.

3) Uncertainty Avoidance: considers societies that tolerate ambiguity and unknown situations (Nelson and Quick, 2003; Martinsons et al., 2009). Hofstede and Hofstede (2005) noted that uncertainty avoidance depends on society members feeling either comfortable or uncomfortable. Conversely, Chan and
Cheung (2008) pointed that inhabitants in low uncertainty avoidance societies are more tolerant of new and different ideas, such as new technology, and less concerned by uncertainty. Therefore, people in low uncertainty avoidance societies are more willing to accept, use, and deal with new technology, as they are willing to accept greater risks. Meanwhile, people in high uncertainty avoidance societies found new technology frustrating to use (Downey et al., 2005). Hofstede and Hofstede (2005) distinguished between uncertainty avoidance and risk avoidance emphasising that risk avoidance is the probability of particular event may happen at any time.

4) Masculinity: is the degree of assertiveness and materialist behaviour in a particular culture (Martinsons et al., 2009). Avery et al. (2008) emphasised that Hofstede observed that individuals in different countries and societies have different levels of assertiveness. Therefore, societies with high masculinity are ego-oriented, as values and treatments between males and females are considered differently (Hofstede, 2001). Furthermore, Chan and Cheung (2008) suggested that in high masculinity countries men are less caring and they have to be assertive and ambitious, while women are supposed to be tender and caring. In contrast, in feminine societies gender roles overlap where males and females have equal status. Consequently, in these countries there is no gap between men and women, as both have the same responsibilities (Nelson and Quick, 2003).
To that end, Hofstede (2009) studied the influence of cultural dimensions (power distance, individualism, uncertainty avoidance, and masculinity) in the Arab world (www.geert-hofstede.com). He found that Arab countries have:

- Large Power Distance.
- High Uncertainty Avoidance.
- Collectivist Culture.
- Masculinity Culture.

Figure 3.4 outlines the root constructs of culture.

Figure 3.4 The root constructs of culture

Venkatesh *et al.* (2003) found that four key moderators (age, gender, experience and voluntariness of use) moderated the relationship between social influence (which has been replaced by *culture*) and behavioural intention. It was found that older and females were normally more aware of the opinions of others. Along with the gender and age moderators, Chanasuc and Praneetpolgrang (2008) clarified that the educational level moderated the relationship between *culture* and behavioural intention, on the basis that *culture*
impacts directly on those who are considered as less-educated people. Finally, cultural constructs become non-significant in voluntary contexts (Venkatesh et al., 2003).

3.5.1.5 Facilitating Conditions

The facilitating conditions in the UTAUT model can be considered as the only construct in the model that contributes directly to the usage behaviour instead of behavioural intentions. Venkatesh et al. (2003) clarified that there was no direct influence between facilitating conditions and behavioural intentions. Moreover, facilitating conditions become non-significant in predicting behavioural intentions when both performance expectancy and effort expectancy constructs are present. Liu et al. (2005) and Friertag and Berge (2008) argued that facilitating conditions influenced behavioural intentions towards the acceptance and use of new technology, even with the presence of performance expectancy and effort expectancy.

Additionally, the individual moderator impacts the relationship between the facilitating conditions and behavioural intentions. Friertag and Berge (2008) explained that younger people are more willing to accept and use new technology than older people without assistance. Durndell and Haag (2002) pointed out that females were often found to ask for assistance when using new technology. In addition, Pare and Elam (1995) showed that the level of education influenced the relationship between facilitating conditions and
behavioural intentions, as less well-educated individuals were hesitant to accept and use advanced technologies without assistance. Therefore, this study will measure the influence of age, gender and educational level moderators on the relationship between *facilitating conditions* and behavioural intentions. Figure 3.5 presents the root constructs of *facilitating conditions*.

![Figure 3.5: The root constructs of facilitating conditions](image)

3.5.1.6 Adopted Unified Theory of Acceptance and Use of Technology (UTAUT) Model – Stage 1

To identify the different constructs that affect technology acceptance and to understand what affects the acceptance and use of Internet banking, some slight alteration on the original UTAUT model is necessary. Bandyopadhyay and Fraccastoro (2007) showed that social influence can be considered as part of the *culture*. Therefore, social influence as the UTAUT model will be replaced by the *culture* construct, by measuring the influence of the model moderators.
(gender, age, education level, and voluntariness of use) on the relationship between the culture and bank customers’ behavioural intentions.

Furthermore, the facilitating conditions construct influences the behavioural intention directly. Finally, a slight change has been undertaken with the model moderators, where the experience moderator was replaced with educational level moderator. Moreover, the first three moderators (gender, age and education level) will be grouped into one moderator named the individual moderator. Figure 3.6 presents the first stage of modification of the UTAUT model.

Figure 3.6: The modified UTAUT model (stage 1)
3.5.2 Reviewing the UTAUT Indirect Constructs

According to Venkatesh et al. (2003) the attitude towards the use of technology, self-efficacy and Anxiety were removed from the original UTAUT model as they do not have a significant influence on behavioural intention and usage behaviour. Martinsons et al. 2009 explained that the constructs which may not be considered as significant in some societies may not in others. Therefore, the three constructs will be added to the research model, and their impact on bank customers’ behavioural intention towards the acceptance and use of Internet banking will be examined.

3.5.2.1 Attitude towards Using Technology

Attitude toward using technology is individuals’ positive or negative feelings of using new technology (Ajzen and Fishbein, 1980; Venkatesh et al., 2003). This factor is related to individuals’ feelings towards the acceptance and use of new technology (Robinson, 2006). Dinev et al. (2008) referred the positively or negatively attitude to the individual judgment about how the new technology is used.

Bennett et al. (1999) and Robinson (2006) explained that the attitude toward new technology is shaped during the time that organisations prepare themselves for a technological change. Furthermore, Jacoby et al. (2002) noted
that attitude stems from two types of input - personal experience and the external environment. As users have their own beliefs and experiences that impact on their behavioural intentions toward using new technology or the normative beliefs that reflect the community's impact towards behaviour. Venkatesh et al. (2003) clarified that attitude towards using technology is an argument constructor and is considered unimportant in some theories (e.g. C-TAM-TPB, MPCU, AND SCT) but is also considered as a strong predictor of intention toward the use of new system in other acceptance theories (e.g. TRA, TPB/DTPB, and MM). Therefore, attitude does not exist as a separate element in the UTAUT model, but has been included as part of the performance and effort expectancy constructs.

Dinev et al. (2008) noted that several social science and information system studies have presented a strong argument for the relation between attitude and behavioural intention (e.g. Ajzen and Fishbein, 1980; Sheppard et al., 1988; Davis et al., 1989; Taylor and Todd, 1995b). It may be perceived that attitude towards using technology construct is considered as a disputed construct among researchers. Thus, attitude towards using technology will be added to the research conceptual framework. Nevertheless, Robinson (2006) pointed out that attitude towards using technology comprised of four related constructs (see Table 3.2).
Several studies have found that there is a relationship between gender and attitude toward using technology since males are more interested than females in accepting and use new technologies (Young, 2000; Bain and Rice, 2006; Meelissen and Drent, 2008). In addition, Kang and Yoon (2008) found that there was a relationship between the attitude towards using technology, age, and education level, as younger and better educated individuals were more willing to accept and use advanced technologies.

3.5.2.2 Self-Efficacy

Self-efficacy is defined as the user's ability to accept and deal with a new technology to achieve a particular objective (Bandura, 1986; Venkatesh et al., 2003; Labriola et al., 2007). McCormick et al. (2006) noted that self-efficacy was adapted from the SCT theory. Therefore, self-efficacy is not the skill that an individual has, but the individuals' judgment of what s/he can do with their skills (Compeau and Higgins, 1995b; Brosnan, 1998).
Compeau and Higgins (1995a) defined computer self-efficacy as an individual's judgment towards using and dealing with computers. It is not concerned with what happened in the past, as the focus is on the individual's belief on what they can do in the future. Zhang and Espinoza (1998) explained that if students have computer self-efficacy they have a greater ability to learn more about computer science. Barbeite and Weiss (2004) and Saleh (2008) confirmed that computer self-efficacy has a positive outcome in computer classes. Guriting et al. (2007) clarified that computer self-efficacy is one of the elements that affects the acceptance and use of Internet banking services, as customers with high computer self-efficacy were found to be more willing to accept and use Internet banking compared with those with less computer self-efficacy. It would seem that bank customers who have self-efficacy and good computer skill are more likely to accept and use Internet banking.

Venkatesh et al. (2003) explained that self-efficacy was formulated from perceived ease of use which was derived from the TAM. Wang et al. (2003) suggested that the fact that self-efficacy has an impact on perceived ease of use cannot be ignored. Users who have high levels of self-efficacy will perceive that Internet banking is easy to use. In addition, Wang et al. (2003) stressed that there is a relationship between self-efficacy and users' behavioural intentions on the basis that self-efficacy is a factor that affects users' acceptance of new technology. Moreover, Guriting et al. (2007) argued that
computer self-efficacy is inferior to perceived usefulness and ease of use which related to TAM and TAM2.

Durndell and Haag (2002) found that females were less confident about technology than males, as males had more positive confidence (self-efficacy) in using the latest technologies. Harold et al. (2005) explained that there is a relationship between self-efficacy and age, as older users felt less confident in using new technologies. Chu (2003) clarified that high educational levels increased the opportunities to accept and use the latest technology with high confidence.

Finally, computer self-efficacy is a construct that influences the acceptance and use of Internet banking. Therefore, it will be examined in this study as a new element to measure its impacts on behavioural intention towards the acceptance and use of Internet banking. Furthermore, the influence of the individual moderator (gender, age and education level) will also be examined.

### 3.5.2.3 Anxiety

Anxiety relates to the fear of using and dealing with advanced technologies, as normally it appears when a new technology is introduced (Beckers et al., 2007; Pauli et al., 2007). Arigbabu (2009) characterized computer anxiety as an effective response since users fear a negative outcome. Igbaria and Parasuraman (1989: p.375) defined computer anxiety as a "tendency of
individuals to be uneasy, apprehensive, or fearful about current or future use of computers”. Therefore, the influence of computer anxiety may create negative thoughts with regards to acceptance of Internet banking.

Compeau and Higgins (1995a) identified that there is a strong negative effect between computer anxiety and perceived usefulness of computers and an individual’s intention to use computers. Individuals who have computer anxiety are not willing to use computers they tend not to use them very often or maybe not at all. Yang et al. (2007) explained that there is another type of anxiety named Internet use anxiety which may impact on behavioural intention towards the use of Internet technology. Consequently, anxiety is a vital construct to identify and analyse in this study, since customers who use Internet banking need to be free of computer and Internet anxiety.

Sam et al. (2005) differentiated between anxiety and attitude towards using technology. The anxiety is the user’s negative feelings and beliefs towards the use of new system, while attitude is the user’s reaction toward using the system. Pauli et al. (2007) emphasised that anxiety influenced usage behaviour through behavioural intention.

Generally, there is a strong relationship between age and computer anxiety as older people experience more anxiety than younger people when they start using advanced technologies (Westerman and Davies, 2000; Todman and Day, 2006). Rezaei et al. (2008) argued that there is a negative relationship between
computer anxiety and age. The researcher referred Rezaei et al. (2008) findings to the study sampling which it may not reflected the population, as they focused only on college students who normally do not suffer of technology anxiety. Westerman and Berge (2008) substantiated the findings of Westerman and Davies (2000) and Todman and Day (2006) In addition, Moser et al. (2003) found that females suffered from higher level of computer anxiety than males. Jashapara and Tai (2006) clarified that well-educated computer users do not suffer as much with computer anxiety when compared with less-educated users.

3.5.2.4 Adopted Unified Theory of Acceptance and Use of Technology (UTAUT) Model – Stage 2

The three previous constructs (attitude towards using technology, self-efficacy and anxiety) have a common factor, since all of them are related to computer use. Furthermore, the acceptance and use of Internet banking requires good computer knowledge as a prerequisite. These three constructs will be grouped into one major construct named “customers attitude towards computers” (see Figure 3.7).
To fulfil the aims of the study some slight alterations to the original UTAUT model were necessary, as the research will focus on the acceptance of Internet banking in a developing country. Figure 3.8 outlines the second modification on the original UTAUT model. One new construct named "customers attitude towards computers" has been added.
3.5.3 Additional Construct for the UTAUT Model

One final construct need to be added to the original UTAUT model, i.e. trust.

3.5.3.1 Trust

*Trust* in general is the individual's beliefs about a person or organization's reliability, ability, truth and strength (Eisenstadt, 1995; Castelfranchi and Falcone, 2000). Gefen (2004) classified it as *specific beliefs* which deal with the ability, integrity, and benevolence of the trustee and *general beliefs* the general ideas about the trustee that can be trusted, and specific and general beliefs. Humphries and Wilding (2004) explained that *trust* is the essential ingredient that maintains long-term relationships between individuals and business. Moreover, Kivijärvi *et al.* (2007) and Al-Sajjan and Dennis (2010) clarified that lack of *trust* is a significant barrier to customer acceptance of electronic banking services, as customers want to ensure that they use a secure system. Furthermore, customer *trust* is a major construct that impacts on customer attitudes and behavioural intentions to using electronic services (Cai *et al*., 2008).

*Trust* is considered a major challenge in the acceptance of internet banking, as it has a strong and significant impact on customers behavioural intentions towards the acceptance and use of Internet banking (Mukherjee and Nath,
2003; Nor and Pearson, 2007). Lee et al. (2007) suggested that trust is a vital issue for both on-line and off-line banking transactions. Trust becomes even more important in the environment of Internet banking with the absence of human interaction (Suh and Han, 2002; Yoon, 2002; Yousafzai et al., 2009).

Yousafzai et al. (2009) suggested that bank customers' trust comprises of three levels:

- Trust in the bank.
- Trust in the Internet.
- Trust in Internet banking information.

1) **Trust in the bank**: bank customers have to trust the bank they deal with. This type of trust is gained from a customer's beliefs regarding the bank and is called self-interested motivation (Sohail and Shanmugham, 2003; Saparito, 2004). Trust in the bank helps customers' to transfer to Internet banking. Lee et al. (2007) argued that trust in off-line (traditional) banking services may encourage banking customers to shift from off-line to on-line (Internet) banking. Arnott (2007) and Hahn and Kim (2009) confirmed that trust in electronic banking channels is influenced by trust in traditional banking channels.

2) **Trust in the Internet**: Internet trust is considered a prerequisite to trust in Internet banking. Bank customers identified Internet privacy and security as two constructs related to trust (Yousafzai et al., 2003; Kim and Prabhakar, 2004). However, privacy and security are fundamental factors that affect trust in the
Internet and all Internet business services. Nevertheless, to implement privacy and security in Internet banking, banks need to provide their customers with assurances that no third party can access their bank account information without authorization (Sohail and Shanmugham, 2003).

Internet security is important, as banks have to implement a high level of Internet security so their customers can trust Internet banking (Liao and Cheung, 2002; Kivijärvi et al., 2007; Jahangir and Begum, 2007). Customers need to complete their banking transactions through secure channels which provide them with the necessary level of privacy and confidentiality. Banks which offer Internet banking services provide their online customers with additional security software in order to increase security and reduce perceptions of risk. This type of software is usually free and allows users to download to their personal computer before they start banking online (Dimitriadis et al., 2011).

3) **Trust in Internet banking information**: bank customers' trust in Internet banking depends on their trust in the bank's Internet information, which can be classified into two parts: information accuracy and information completeness and relevance (McCole, 2002; Wang and Emurian, 2005). The first stage in trusting Internet banking, relates to the need for customers to ensure that their personal bank accounts are accurate and up-to-date. Additionally, the Internet banking information has to be complete and that all the necessary and relevant information about the bank products and services are accurate, up to date,
complete, and available (Yousafzai et al., 2009). Figure 3.9 presents root constructs relating to Internet banking customers trust.

![Figure 3.9: The root constructs relating to trust](image)

Yousafzai et al. (2009) identified that trust is one of the fundamental constructs that impacts the acceptance and use of Internet banking. It may be perceived that the main reason for failure in the acceptance of any new technology accrues to a neglect of trust. In this study, Internet banking is not only a new information system that customers have to deal with, but is also a new marketing channel provided by banks for their customers. Therefore, trust which must be granted by customers is not only trust in the new system (Internet bank) but also towards the new marketing channel. However, the term trust has been widely studied in different areas of research such as sociology, management, banking and marketing, as it is an important factor that various
business transactions need for successful business results (Lee, 1998; Yousafzai et al., 2009; Dimitriadis et al., 2011).

Corritore et al. (2003) noted that when users deal with on-line services, their educational level moderates the relationship between trust and behavioural intention. In addition, Kolsaker and Payne (2002) as well as Siegrist et al. (2005) explained that gender and age play an important role in technology trust and acceptance. Therefore, the researcher will measure the impact of the three individual moderators (gender, age and educational level) on the relationship between trust and behavioural intention towards the acceptance and use of Internet banking.

3.5.3.2 Adopted Unified Theory of Acceptance and Use of Technology (UTAUT) Model – Stage 3

It can be gleaned from the previous section that trust has a significant influence on behavioural intention towards usage behaviour. Therefore, to acquire a valid and exact research conceptual framework, trust will be added to the research model, and the influence of trust towards behavioural intention will be measured by taking into consideration the influence of individual moderators (gender, age and educational level). Figure 3.10 presents the modified model after adding trust as a new construct.
3.6 Research Conceptual Framework

It is argued that the UTAUT model is more predictive than any other individual models (Yeow et al, 2008). This is because the model synthesises eight different theories and their extensions into one unified theory. Furthermore, the UTAUT theory includes most of the factors that influencing information technology intention and usage behaviour (Hennington and Janz, 2007). The model was developed within the context of a developed country and does not consider the dynamics within developing countries, such as the Middle East.
According to the literature and for the purposes of this study, it is recognised that there are some significant elements that are not covered in the original UTAUT model (or the other models on which it is built), which may affect Internet banking acceptance in developing countries, such as the Sultanate of Oman. Consequently, these elements (culture, trust and attitude towards computer) may be of limited impact in developed countries, but have major impact in developing countries, such as Oman. Figure 3.11 outlines the final research model, and Table 3.3 presents the research model constructs and their root constructs.

![Research conceptual framework](Image)

Figure 3.11: Research conceptual framework
Chapter Three: Literature Review of Technology Acceptance Models

Table 3.3: The research model constructs and root constructs

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<thead>
<tr>
<th>Construct</th>
<th>Root constructs</th>
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<tr>
<td>Performance Expectancy</td>
<td>Perceived Usefulness</td>
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<td>Extrinsic Motivation</td>
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<td>Relative Advantage</td>
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<td>Outcome Expectations</td>
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<td>Effort Expectancy</td>
<td>Perceived Ease of Use</td>
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<td></td>
<td>Complexity</td>
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<td>Ease of Use</td>
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<td>Facilitating Conditions</td>
<td>Perceived Behavioural Control</td>
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<td></td>
<td>Facilitating Conditions</td>
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<td></td>
<td>Compatibility</td>
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<tr>
<td>Customers Attitude Towards Computers</td>
<td>Attitude Towards Using Technology</td>
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<td></td>
<td>Self-efficacy</td>
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<td>Anxiety</td>
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<td>Culture</td>
<td>Power Distance</td>
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<td>Individualism</td>
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<td>Uncertainty Avoidance</td>
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<td>Masculinity</td>
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<td>Trust</td>
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<td>Trust in Bank Information</td>
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<td>Information Accuracy</td>
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<td>Information Completeness and Relevance</td>
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3.7 Summary

This chapter presents a modified unified theory of acceptance and use of technology (UTAUT) model which was developed by Venkatesh et al. (2003). The UTAUT model comprised of four constructs (performance expectancy, effort expectancy, social influence and facilitating conditions) that affect the usage behaviour through behavioural intention. Furthermore, they identified four moderators (age, gender, experience and voluntariness of use) which moderate the relationship between the model’s constructs and users’ behavioural intentions towards the acceptance and use of Internet banking.
This study will investigate the acceptance of internet banking in the Sultanate of Oman which is a developing country. To generate a comprehensive model for developing country contexts and the acceptance of Internet banking development of the model was considered in two parts:

- Reviewing the original model constructs and moderators;
- Adding new constructs to the original UTAUT model.

In order to explore the key factors that influence bank customers' behavioural intentions towards the acceptance and use of Internet banking, three constructs \textit{(performance expectancy, effort expectancy and facilitating conditions)} of the UTAUT model will be adopted. The social influence construct is replaced by a more comprehensive construct named \textit{culture}. This is due to the influence of the society \textit{culture} on the acceptance of Internet banking, as the technology that succeeds in one society may not necessarily succeed in other societies.

The three elements: attitude towards using technology, self-efficacy and anxiety, are eliminated from the original UTAUT model and synthesised into one major construct named customer attitude towards computer on the basis that use Internet banking requires prior knowledge of how to use and deal with computers and the Internet. Lack of \textit{trust} has been shown to be a significant factor affecting the acceptance of new technology. Therefore, the \textit{trust} construct has been added to the research conceptual framework as a new factor that
influences bank customers’ behavioural intentions towards the acceptance and use of Internet banking.

Finally, model moderators have been adapted to the research conceptual framework by replacing the experience moderator with educational level, because of the nature of technology experience and acceptance in Oman. Furthermore, age, gender and educational level moderators are combined into one major moderator named individual moderator. The next chapter discusses the research approach undertaken in this study.
# CHAPTER FOUR: RESEARCH APPROACH

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4.1 Introduction

This chapter presents a detailed justification of the research approach used to answer the research questions and achieve the aim and objectives outlined in chapter one. The chapter begins with an overview of social research design. Section 4.3 discusses the research paradigm as the theoretical research approach. Section 4.4 discusses the research methodology. Section 4.5 discusses the methods adopted in this research for data collection. The chapter outlines the sampling techniques, piloting study and analysis techniques (sections 4.6, 4.7 and 4.8, respectively). The chapter also illustrates the research validity, reliability, triangulation, ethical consideration and generalisability of the study (sections 4.9, 4.10 and 4.11, respectively). Section 4.12 summarises the entire chapter.
4.2 Research Design

Research is defined as an in-depth study of a particular issue or phenomenon which the researcher investigates to solve problems related to that issue/phenomenon (Marshall, 1997; Brewerton and Millward, 2001; Wilkinson and Birmingham, 2003; Creswell, 2007; Bryman and Bell, 2007). In the social sciences various researchers present the research overview – the theoretical and practical approaches – in different ways. The differences in presentation can be clearly identified between the models of Sarantakos (1998); Crotty (2005) and Saunders et al. (2007). These authors agree that social research can be thought of in terms of the theoretical and practical approaches. However, the terminology adopted varies between them. For instance, they use different terminology which can be confusing for other researchers. This section explains these different research designs in order to choose the appropriate research design for this study.

Sarantakos (1998) identified three levels of research (see Figure 4.1). The first level includes the researcher's theoretical approach which combines the epistemology and theoretical perspective, which Sarantakos calls the research paradigm. The second and third levels represent the practical approach which contains the research methodology and methods respectively.
Crotty (2005) named four different research levels for the social research (see Figure 4.2). The first two stages comprise the theoretical approach which contains the research epistemology and theoretical perspective. The following two stages comprise the practical approach – the research methodology and methods. Based on Crotty (2005), the four levels are interdependent, as the choice of the research epistemology is followed by the choice of theoretical perspective, the choice of study methodology and the choice of specific methods of data collection and analysis. The last two stages methodology and methods of Crotty and Sarantakos’ model are very similar. However, in terms of theoretical approaches Crotty’s outlines two levels – epistemology and theoretical perspective are merged into one level – the research paradigm in Sarantakos’ model. Figure 4.2 presents Crotty (2005) research design.
Saunders et al. (2007) offer a different model for social research design which they call the "research onion". According to this model there are six levels in social science research. The research levels are philosophies (e.g. interpretivism); approaches (contain either inductive or deductive); strategies (the research methodology); choices (types of research methods); time horizons (cross-sectional or longitudinal) and techniques and procedures (which includes data collection and analysis techniques). In this model the theoretical approach contains research philosophies and approaches (inductive and deductive). Meanwhile the practical approach contains the strategies as a methodology and the other three levels contain the research methods. The methods include both data collection methods and data analysis methods. Figure 4.3 presents the research onion according to Saunders et al. (2007:132).
The three research designs have considerable overlaps in their consideration into the theoretical and practical approaches. This research focuses on Sarantakos model, since it reflects more appropriately the research design adopted in this study. The following sections discuss in detail this research design.

4.3 The Research Paradigm

As mentioned early in Sarantakos research design the first level reflects the theoretical approach and is named the research paradigm (Sarantakos, 1998). The paradigm is a particular theme that is used to test and understand social phenomena (Gephart, 1999; Denzin and Lincoln, 2005; Eriksson and Kovalainen, 2008). Guba and Lincoln (1994) classified social science research into two models; a subjectivist qualitative (constructivist) model and an objectivist quantitative (positivism and post-positivism) model. Guba (1990)
explained that there is a third relativist paradigm called *pragmatism* which combines the subjectivist qualitative model and objectivist quantitative model and is a paradigm on its own. Later, several authors (e.g. Reichardt and Rallis, 1994; Tashakkori and Teddlie, 1998; Johnson and Onwuegbuzie, 2004; Pansiri, 2005; Creswell and Clark, 2007) agreed that the paradigm which mixes qualitative and quantitative approaches is *pragmatism*. Table 4.1 compares positivism, post-positivism, constructivism with pragmatism.

<table>
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<th>Paradigm</th>
<th>Positivism</th>
<th>Post-positivism</th>
<th>Pragmatism</th>
<th>Constructivism</th>
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<tbody>
<tr>
<td><strong>Methods</strong></td>
<td>Quantitative</td>
<td>Primarily Quantitative</td>
<td>Quantitative + Qualitative</td>
<td>Qualitative</td>
</tr>
<tr>
<td><strong>Logic</strong></td>
<td>Deductive</td>
<td>Primarily deductive</td>
<td>Deductive + Inductive</td>
<td>Inductive</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
<td>Objective point of view. Knower and Known are dualism</td>
<td>Modified dualism. Findings probably objectively &quot;true&quot;</td>
<td>Both objective and subjective points of view</td>
<td>Subjective point of view. Knower and Known are inseparable</td>
</tr>
<tr>
<td><strong>Axiology</strong></td>
<td>Inquiry is value-free</td>
<td>Inquiry involves values, but they may be controlled</td>
<td>Values play a large role in interpreting results</td>
<td>Inquiry is value-bound</td>
</tr>
<tr>
<td><strong>Ontology</strong></td>
<td>Naive realism</td>
<td>Critical or transcendental realism</td>
<td>Accept external reality. Choose explanations that best produce desired outcomes</td>
<td>Relativism</td>
</tr>
<tr>
<td><strong>Causal linkages</strong></td>
<td>Real causes temporally precedent or simultaneous with effects</td>
<td>There are some lawful, reasonable relationships among social phenomena. These may be known imperfectly. Causes are identifiable in probabilistic sense that changes over time</td>
<td>There may be causal relationships, but we will never be able to pin them down</td>
<td>All entities simultaneously shaping each other. It's impossible to distinguish causes from effects</td>
</tr>
</tbody>
</table>
4.3.1 Pragmatism

Pragmatism is derived from the Greek word “pragma” which mean action, from which the words practice and practical come (James, 2000). Dewey (1920) explained that pragmatism philosophy discover the meaning of idea that’s need to be checked consequently. Therefore, when researcher judges a phenomenon they must follow its empirical and practical consequences and note its impact on the study population (Tashakkori and Teddlie, 1998). Moreover, Easterby et al. (2008) explained that, by using pragmatism, researchers have to study individual experiences in-depth to develop an understanding of a particular phenomenon.

Moreover, Krauss (2005) explained that the pragmatist paradigm focuses on qualitative versus quantitative data and that to answer research questions where researchers have to mix objective and subjective approaches. Tashakkori and Teddlie (1998) clarified that by using pragmatism the research logic contains deductive and inductive approaches. Therefore, the pragmatism philosophy rejects the use of particular research philosophies, such as positivism, post-positivism and constructivism. Furthermore, Tashakkori and Teddlie (1998) explained that pragmatism focuses on both the meaning and the truth of ideas. Truth is "what works" at the time and it is not based on a dualism between whether reality is independent of the mind or within the mind.
Therefore, when judging ideas pragmatists consider their empirical and practical consequences.

Pragmatism is a research philosophy that removes the need to make a forced choice regarding the research epistemology between constructionism and positivism (including post-positivism). A pragmatic paradigm rejects traditional assumptions about the nature of knowledge, truth and the nature of inquiry. Furthermore, for pragmatists the research question is more important than the research method that is used (Johnson and Onwuegbuzie, 2004).

Thus, Creswell (2003) explained that the choice of the research paradigm (pragmatism) related mainly to the purpose and nature of the research questions. The pragmatism allowed the researchers to study different interested areas by employed different sources of evidence (methods) that are appropriate and explain the study findings in a positive manner (Tashakkori and Teddlie, 1998 and Creswell, 2003). Therefore, pragmatism is classified as one of the suitable research philosophies in social and management research that investigates beliefs and attitudes using mixed methodology combining qualitative and quantitative approaches (Creswell, 2003).

Reichardt and Rallis (1994) explained that there is much debate about whether pragmatism is in fact a research philosophy because it holds the centre-ground between two well-established social research philosophies. Johnson and Onwuegbuzie (2004) and Robson (2005) confirmed that pragmatism is no
longer a debatable philosophy but has achieved widespread use in social research. To achieve the aim of this research study pragmatism has been chosen as a research philosophy. The next part will discuss the mix between the qualitative and quantitative research approaches.

4.3.2 The Choice of Qualitative and Quantitative Research Approaches

Many researchers have discussed the difference between quantitative and qualitative approaches, including Brewer and Hunter (1989), Silverman (2000), Brewerton and Millward (2001), Holliday (2002), Thomas (2003), Corbetta (2003) and Cooper and Schindler (2005). Gelo et al. (2008) explained that quantitative researchers base their accounts on figures and numerical information, while qualitative researchers rely on non-numeric data, for instance words, narratives and feelings. Maanen et al. (1982: 32) introduced a verbal picture to help readers understand the difference between both research types as follows:

Quality is the essential character or nature of something; quantity is the amount. Quality is the what; quantity the how much. Qualitative refers to the meaning, the definition or analogy or model or metaphor characterizing something, while quantitative assumes the meaning and refers to a measure of it.

In addition, Bryman (1996) and Cooper and Schindler (2005) noted that quantitative and qualitative approaches are both valid and researchers can use either. Clarke and Dawson (2000) and Gray (2009) suggested that according to the nature of the research researchers can mix different approaches, as it is
very difficult to decide which one is better or more useful. Miller and Brewer (2003) confirmed that using a mixed methods approach decreases the weaknesses and limitations of the research. Table 4.2 compares quantitative, qualitative and mixed methods procedures (Creswell, 2003:19).

<table>
<thead>
<tr>
<th>Table 4.2: Comparison between quantitative and qualitative research (Source: Creswell, 2003:19)</th>
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<tr>
<td><strong>Tend to or Typically</strong></td>
</tr>
<tr>
<td>Use these philosophical assumptions</td>
</tr>
<tr>
<td>Employ these strategies of inquiry</td>
</tr>
<tr>
<td>Employ these methods</td>
</tr>
<tr>
<td>Use these practices of research, as the researcher</td>
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In addition, there are different ways to implement quantitative and qualitative approaches in one study. Johnson and Onwuegbuzie (2004) summarized these in Figure 4.4. This study combines qualitative and quantitative approaches in a sequential and equal way. The study starts with a qualitative approach through analysis of bank documents and websites. In-depth semi-structured interviews
were then conducted with Omani bank managers. This was then followed by a quantitative approach using a questionnaire survey of bank customers. Both phases of this study had equal status (see the top right quadrant of Figure 4.4).

**Figure 4.4 Mixed methods approach design matrix (the design used in this study is shown in blue). Adopted from Johnson and Onwuegbuzie (2004)**

### 4.4 The Research Methodology

The second research level according to Sarantakos (1998) is the research methodology. Crotty (2005:3) identified the research methodology research stage as:

*the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes.*
In addition, Crotty (2005) clarified research methodology as a strategy builds on it the data collection methods, and linking between the use of research methods and research outcomes. Furthermore, Crotty (2005) explained that there are several types of research methodology, and researchers should choose one which is most suitable for their research topic. This study chose a case study as the research methodology to investigate and understand the factors that impact the adoption and acceptance of Internet banking in the Sultanate of Oman.

Yin (2009) noted that the case study is now one of the most widely-used social science research methodologies, and applied in many different professional fields of social research (e.g. psychology, sociology, political science, business and marketing, economics, accounting, public administration, public health and education). Robson (2002:178) identified a case study as:

A strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence.

A case study research methodology was selected for several reasons. Case study have clear advantages compared with other research methodologies in answering the questions “why?”, “what?” and “how?” in relation to particular phenomenon. Moreover, to gain a clear and deep understanding of the phenomenon, case study considered as the best research methodology (Morris and Wood, 1991; Denscombe, 1998). A case study is a useful research methodology when the researcher has no control over the events. It also helps
researchers to explain their outcomes and identify why certain outcomes may happen (Denscombe, 1998; Yin, 2009).

In addition, using a case study as a research methodology enables a researcher to use multiple data collection methods to explore his/her research questions. This positively reflects on the research validation and triangulation. Thus, the research results and findings can be generalised as they are likely to be more accurate (Yin, 2009). This also supports the choice of case study as a research methodology in this research study. Ultimately, a case study is built using quantitative and qualitative approaches. Yin (2009) confirmed that case studies can be used either for quantitative or qualitative approaches, or a combination of the two.

With regards to the case study design, Yin (2009) illustrated that a case study can be single or multiple case studies. A single case study is used with critical, extreme and unique cases. Moreover, single-case maybe used if the researcher has a chance to study a phenomenon that few researchers have considered before. Multiple-case studies used to compare the findings from two studies. For example, if the researcher needs to generalise the findings from two cases, the researcher should establish whether the results of the first case occur in the second case. In addition, using multiple case studies design is expensive and time consuming. Yin (2009) proposed four types of case study design based on a 2x2 matrix: single-case (holistic) designs; single-case (embedded) designs; multiple-case (holistic) designs; multiple-case
(embedded) designs. Notes that holistic designs are based on single unit of analysis, while embedded designs include multiple units of analysis (see Figure 4.5).

![Figure 4.5 Basic types of designs for case studies [Source: Yin, 2009:46]](image)

This research study adopted a single case study with embedded units of analysis design to investigate the adoption and acceptance of Internet banking in the Sultanate of Oman (see Figure 4.6). This can be justified for a number of reasons. Firstly, the study explored the adoption and acceptance of Internet banking in a specific context Oman by focusing on the seven Omani banks. Secondly, it examined the conceptual framework (see Figure 3.11), which according to Yin (2009) that a single case study is used when it represents the
critical case for testing a theory has not been tested before. Thirdly, the acceptance of Internet banking in Oman from a customer perspective had not been studied before. According to Yin (2009) this would be a unique case and the single case study design is suitable for this.

Figure 4.6 The single case study design with seven embedded units of analysis used in the study.

Gray (2004) clarified that case studies can have three different forms: exploratory, explanatory and descriptive. An exploratory study aims to define the research questions or hypotheses for a subsequent study and aims to gather information in order to describe what is going on (Yin, 2009). Robson
(2002:59) identify an exploratory study for exploring "what is happening; to seek new insights; to ask questions and to assess the phenomena in a new light". This is important when there is not enough information about the phenomenon understudy. Alternatively, an explanatory case study explains in detail how a particular event happened by identifying the relationship between the phenomena variables (Saunders et al., 2007). Finally, a descriptive case study presents a description of a phenomenon within its context (Robson, 2002).

According to the three different forms of case study, this research study is an "exploratory" case study which investigates the adoption and acceptance of Internet banking in the Sultanate of Oman. It also explores the main barriers that faced Omani banks in the early stages of adoption of Internet banking. Moreover, it also explores the main factors that affect bank customers’ behavioural intentions towards the acceptance and use of Internet banking.

Crotty (2005) noted that the research questions determine the techniques of data collection and analysis are determined in a case study by the sources of evidence. Yin (2009) outlined that there are six different primary sources of evidence can be used in case study research as follows:

* Documentation
* Direct observations
* Interviews
* Participant observations
* Archival records
* Physical artefacts
Yin (2009) demonstrated that each of the sources has its own strengths and weaknesses. In addition, the researcher has to choose the applicable sources of evidence that match with the research aims and objectives. Yin (2009) outlined that to gain full benefits of the six data sources, researchers should follow three principles (see Figure 4.7).

![Figure 4.7: Principles of data collection](image)

In addition to following these three principles, in this study three different primary sources were used to collect the necessary primary data as follows:

- Documentation.
- Semi-structured interview.
- Questionnaire Survey.

However, comparing the three research primary data sources with Yin’s (2009) six sources of evidence, it can be concluded that according to Yin the three data sources related to two out of the six alternatives. Yin (2009) outlined that
structured interviews and questionnaire survey, focus group interviews and open-ended interviews all relate to one source of evidence named interview. Nevertheless, using multiple sources of evidence was achieved, since this research study used two sources of evidence – documentation and interviews (in-depth semi-structured interviews and questionnaire survey). The document analysis method used in this study included analysis of bank documents and an overview of the bank's websites. Meanwhile, in-depth semi-structured interviews and the questionnaire survey were implemented with two types of participants (interviews with Omani bank managers and the questionnaire survey with bank customers). Figure 4.8 outlines the sources of evidence identified by Yin (2009) for developing case studies and identify the sources used in this research study.

Figure 4.8: Yin's (2009) six sources of evidence and the two sources of evidence used in this study
4.5 Methods of Data Collection

This section presents the final research level namely the research methods. Crotty (2005) defined research methods as the techniques that used by researchers to collect and analyse the data required to answer the research questions. Moreover, according to Saunders et al. (2007) research methods are the various procedures used to collect data, such as questionnaire, observation and interviews, and to analyse it, e.g. statistical and non-statistical techniques, according to the nature of the research.

Since this study mixed quantitative and qualitative approaches different research methods have to be employed. Some of the methods were quantitative in nature (questionnaire), other methods were qualitative in nature (interviews). Furthermore, to determine the research reliability and validity, the researcher used multiple sources of evidence. Figure 4.9 presents the different research methods used in this research.

![Diagram of research methods]

Figure 4.9: Research methods used in this study
The nature of this research required two phases of fieldwork. In each phase two different research methods were applied according to the nature of the research objectives. In this regard, to achieve the first practical research objective, Omani bank managers' perspectives of electronic and Internet banking and the main barriers that faced the Omani banks in the early stages of Internet banking adoption were explored. This objective was achieved through a review of bank documents and an analysis of the bank's websites to determine the current situation of Omani banks with regards to electronic and Internet banking and to supplement the secondary data with interview data from Omani bank managers. Fourteen in-depth semi-structured interviews with Omani bank managers were conducted to discover their understanding of electronic and Internet banking and to identify the main barriers that faced their banks in the early stages of Internet banking adoption.

On the other hand, the second practical objective consisted of identifying the main elements that influenced bank customers' acceptance and use of Internet banking from the perspectives of both the local bank managers and their customers. This objective was achieved through two stages. Firstly, identifying the main factors that impacted on bank customers' behavioural intentions towards the acceptance and use of Internet banking from the Omani bank managers' perspective. This was implemented through interviews with local bank managers. The focus for these interviews was the Internet banking acceptance model that was developed in the previous chapter. Secondly, based
on the interview results a comprehensive questionnaire was designed to further test the Internet banking acceptance model that was developed early to identify the main factors that impacted on bank customers' behavioural intentions towards the acceptance and use of Internet banking. In this regard, 1000 questionnaires were distributed to Omani local bank customers who attended physically to their bank branches to complete their bank enquiries and transactions and willing to participate in this research study.

4.5.1 Documentation

To achieve the first practical objective, documentation was taken as a source of evidence to supplement the in-depth semi-structured interviews. Saunders et al. (2007) explained that documentary evidence can include written and non-written materials. Bryman (2008) classified documents as sources of data into:

- **Personal documents**: this type of document includes two documentary data types: written documents, such as letters and diaries and non-written documents, such as photographs, films and voice recording.
- **Official documents deriving from the state**: these written documents are usually obtained from government departments and may include Acts of Parliament and official reports.
- **Official documents deriving from private sources**: these documents are written documents and generally are gained from organizations and companies. Some of these documents are in the public domain, such as
financial annual reports, statistical annual reports and Internet websites. Other documents are not available in the public domain, for example company minutes of meetings and memos.

- **Mass-media outputs**: these published documents are in the public domain, for instance television programmes, newspapers, magazines and brochures and include written and non-written documents.

- **Virtual documents**: these documents are obtainable on the World Wide Web (Internet). Recently, Internet has become one of the important sources of documents.

Yin (2009) explained that using documentation in a case study methodology is important to corroborate and augment data from other sources for several reasons:

- Documents are helpful to double check interview information and people titles or company names mentioned in interviews.

- Documents can be used as secondary corroborating sources of evidence to help researchers confirm information gained through other means. If documentary evidence is contradictory the researcher needs to identify why by inquiring more deeply.

- Documentation can provide significant information and open up new line's of enquiry, for example by browsing websites a researcher may find new electronic marketing distribution channels which can be discussed with interviewees.
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Documentation is applicable in quantitative and qualitative research (Bryman, 2008 and Yin, 2009) and was applied in this research study. The types of document that were used were official, mass-media and virtual documents and included:

- Official and mass-media documents, such as bank annual report and banking magazines.
- Omani bank websites (virtual documents) in order to demonstrate that the Omani banks that adopt and launch Internet banking and general assessment on the site (e.g. identifies on-line services ease of use, availability of assistance and security) (see Figure 4.10).

![Diagram](image)

**Figure 4.10: Implementing documentary analysis in this study**
4.5.2 In-Depth Semi-Structured Interviews

In-depth or intensive interviews are sources of evidence which are classified as qualitative methods. Intensive interviews are usually used to explore human behaviours and their thoughts and feelings about particular issues (Schutt, 2006). Patton (2002) explained that the interview method is normally used with different people to understand their opinions and reactions regarding a particular phenomenon which cannot be directly observed. In addition, May (1997:109) identified the interview method as:

*The method of maintaining and generating conversations with people on a specific topic or range of topics, and the interpretations which social researcher make of the resultant data, constitute the fundamentals of interviews and interviewing.*

Interviews are classified into a variety of types, this depends on the availability of resources and the data required to answer the specific research questions (Brewerton and Millward, 2001; May, 2001; Weinberg, 2002). Bernard (2000) identified three different types of interviews as follows:

- **Structured interview**: researchers prepare themselves in advance by setting up a predetermined list of questions with limited option responses (closed questions). Usually structured interviews are associated with social surveys which aim to interview as wide range of respondents as possible to collect large volumes of data (Bernard, 2000; Denscombe, 2003). Saunders *et al.* (2007) classified the
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structured interview as a type of questionnaire which is administered face-to-face.

- **Unstructured interview**: are based on a clear plan that the researcher keeps in mind with no need for a predetermined list of questions and responses are characterized by minimum control. Consequently, in an unstructured interview a researcher may introduce a theme and give the opportunity for respondents to express themselves in their own terms. In addition, researchers have used unstructured interviews where they have plenty of time to explore and investigate a particular phenomenon or when they want to establish long-term fieldwork (Bernard, 2000; Saunders et al., 2007).

- **Semi-structured interview**: a list of questions is prepared in advance of the interview based on a particular theme or topic to be covered. In this type of interview the interviewer can be more flexible in the question order and more significantly, giving an opportunity to the interviewee to develop their own ideas and speak more widely about the interview topic. In addition, semi-structured interviews work well in studies where researchers are dealing with people who are worry about their time, such as managers, bureaucrats and elite members of a community (Bernard, 2000; Denscombe, 2003).

Each type of interview has strengths and weaknesses. However, conducting semi-structured interviews can have a positive impact by giving the interviewer flexibility to conduct and control the interview. Moreover, semi-structured
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interviews give the interviewer the chance to justify interviewees' responses and to gain more detailed and accurate information. However, sometimes it maybe difficult to control the interview as too much time may be wasted on inconsequential issues which may affect the research reliability (Brewerton and Millward, 2001). Moreover, Denscombe (2003) pointed that unstructured and semi-structured interviews are used by researchers to discover not to check, as the interviewer needs to explore the interviewees' thoughts and feelings.

Semi-structured interviews were an appropriate research method to achieve the practical objectives in this study. This is because: the researcher needed to conduct non-standardised one-to-one interviews with Omani bank managers and give opportunities to the interviewees to develop their own ideas and speak more widely about the adoption and acceptance of Internet banking in Oman, especially because this study was an exploratory study which aimed to discover not to check. Moreover, the bank managers were unlikely to give more than one chance to conduct an interview with them, as a result of constraints on their time (Brewerton and Millward, 2001). Therefore, in-depth semi-structured interviews were a suitable qualitative method to gain more accurate and reliable information in the context of this study.

All the interviews were conducted on a one-to-one basis, which made the interview much easier to control since there was only one interviewee to guide. This in turn led the interviewer to explore the interviewees' responses and gain more accurate information. In addition, the one-to-one interviews were relatively
quick and easy to arrange, as only the time and place needed arranging. Finally, all the interviews were conducted in Oman, as the Sultanate of Oman is the case study of this research. This phase of the research is written up in chapters 5 and 6.

4.5.3 Questionnaire Survey

The results of the document analysis and the semi-structured interviews with the Omani bank managers informed this second phase of research stage. Based upon the key findings from bank managers with regards to the model of Internet banking acceptance (see Figure 3.11 and 6.1), the research questionnaire was designed to identify the main constructs that impact bank customers behavioural intentions towards the acceptance and use of Internet banking. Thus, a questionnaire survey method was applied.

Robson (2005) clarified that the full benefits of using questionnaires in business research within a survey strategy. Fink (1995:1) identified survey as:

"A survey is a system for collecting information to describe, compare, or explain knowledge, attitudes, and behaviour. Survey involves setting objectives for information collection, designing research, preparing a reliable and valid data collection instrument, administering and scoring the instrument, analyzing data, and reporting the results."

Robson (2005) explained that a survey is used normally for descriptive and exploratory purposes. Moreover, a survey is used usually when the research sample is large and the researcher needs to collect a large volume of
standardized data (Schutt, 2006). If the researcher requires a large amount of
data in a short period of time a survey may be the best strategy (Alreck and
Settle, 2004). Moreover, a number of data collection methods can be used in
survey research, such as questionnaire, structured interviews, structured
observation and documents (Moser and Kalton, 1981). However, Saunders et
al. (2007) explained that if researchers in any research field want to get the full
benefit of using a questionnaire they have to adopt the survey strategy.

A large number of bank customers were included in the study in order to
determine their perceptions of Internet banking in Oman. Questionnaires are
one of the most common research methods aimed to gather primary data from
a large number of participants in social survey research (Burns, 2000). Furthermore, Bryman (2008) explained that questionnaires can be used as
either a quantitative or qualitative research approach. Oppenheim (2001:100)
defined the questionnaire as:

A set of questions, including perhaps some open-ended ones, from
more rigidly constructed scales or tests. A questionnaire may also
contain check lists, attitude scales, projective techniques, rating
scales and variety of other research methods.

Generally, questionnaire can be divided into two main types: self-administered
questionnaires and structured interview questionnaires (Bryman, 2008). Self-
administered questionnaires are occasionally named self-completion
questionnaires. In this type of questionnaire all respondents answers identical
questions in a particular chronological order by themselves (Oppenheim, 2001).
In contrast, in structured interview questionnaires the participants' answers identical questions which are introduced to him/her by the interviewer (Bryman and Bell, 2007).

Bryman (2008) explained that self-administered questionnaire can be used in several different forms, such as a postal questionnaire when the researcher sends the questionnaire by mail and asks the respondents to complete it and return it either by mail or alternative method. More recently, questionnaires can be sent through the Internet either from a website or by e-mail. Delivery and collection questionnaire is another self-administered questionnaire distribution where the researcher delivers the questionnaire by hand to each respondent and collects the completed questionnaire at later time.

Oppenheim (2001) explained that the questionnaire method like other research methods has both advantages and disadvantages. Low cost, quick and easy data collections from a large number of respondents in different areas are the major advantages. On the other hand, a low response rate is the main disadvantage of using questionnaire to gather primary data.

Bryman and Bell (2007) pointed that there is a different between types of questions that can be asked in a questionnaire. Questions can be categorized in two major types:
• **Open questions:** occasionally called free-response questions. Usually this type of question is used in exploratory research when the researcher wants to know exactly what is uppermost in respondents' minds or when the research necessitates a comprehensive response. The researcher not offers any options or choices in this type of question, and the respondents have to write or record their answers in full. This type of questions gets more detailed responses but is more difficult and time consumers to analyse.

• **Closed questions:** in this type of question the researcher offers respondents some choices of answer. Respondents may be asked to tick a box that matches their preferred response. List, category, ranking, rating and contingency questions are different sorts of closed questions. This type of questions gets more data responses and it easy to analyse using statistical software.

In order to increase the response rate a self-administered questionnaire was used in this study. Permission was taken from all the bank managers to allow the researcher to distribute questionnaires to their customers in their bank branches. All the bank managers accepted and were extremely interested in the outcomes of this research study. Thus, the researcher himself distributed 1000 questionnaires to Omani local bank customers who attended physically to their bank branches to complete their bank enquiries and transactions and willing to participate in this research study. 731 questionnaires were collected (73.1%)
and 611 questionnaires were accepted for statistical analysis (61.1%). From the researcher point of view it seems that a self-administered questionnaire was more appropriate in this study and that the distribution and collection of the questionnaires by the researcher himself would increase the response rate. This is because, participants are likely to be more motivated to respond when they have dealt directly with the researcher.

Furthermore, to increase the response rate the design of the questionnaire was carefully considered (Hoddinott and Bass, 1986). In this regard, the questionnaire was designed according to Dillman’s total design method. Hoddinott and Bass (1986) explained that following the Dillman method in designing a questionnaire increases the response rate by up to 80%. By following the Dillman method the questionnaire was designed and printed as a booklet with a cover sheet explaining the aim of the research study. Furthermore, in order to increase the response rate the questionnaire was distributed in two languages – Arabic and English.

Additionally, the type and sequence of questions was considered in the questionnaire design (Black, 1999). Three main types of questions were applied while designed the study questionnaire, as follows:

- **Factual questions**: In order to encourage respondents to answer the whole questionnaire, it started with fairly straightforward questions to
collect personal data: gender, age, education background, occupation and nationality.

- **Banking experience:** through this part of the questionnaire respondents were asked about their own banking experience and their acceptance of electronic banking, in general, and Internet banking, in particular.

- **Opinion and attitude questions:** the last two parts of the questionnaire were based upon the outcomes of the literature review and the results from the local bank manager interviews. Respondents were asked about their beliefs and attitudes towards Internet banking in order to identify the main factors that impacted on their behavioural intentions towards the acceptance and use of Internet banking. The third part comprised closed-ended questions, where as the fourth part contained open-ended question.

Finally, the closed-ended questions in part three were designed using a Likert scale (strongly agree, agree, disagree, strongly disagree). The researcher chose an even number of possible responses and did not offer a 'neither agree / nor disagree' response to increase the research reliability, so responders had to select an appropriate response (to be more specific). Additionally, the questions were adopted from previous studies regarding to technology and Internet banking acceptance (Compeau and Higgins, 1995; Compeau, *et al.*, 1999; Venkatesh *et al.*, 2003; Doll *et al.*, 2004; Lee *et al.*, 2004; Stone *et al.*, 2006; Segelström, 2008).
4.6 Sampling

After establishing the research questions, aims and objectives in social study, the researcher had to make a decision about the research population. If study population is complicated and not easy to access, the researcher can use sampling techniques (Bakeman, 1992). Bryman (2008:168) defined sample as:

*The segment of the population that is selected for investigation. It is a subset of the population. The method of selection may be based on probability or non-probability approach.*

In order to achieve the study aim and objectives all seven of the Omani commercial banks that offered services in the Omani banking industry were covered. From each bank two managers that were involved with electronic / Internet banking and customers services if the bank adopted and launched Internet banking services were selected. Alternatively, the interviews were carried out with customer services and marketing managers as they deal directly with customers and concentrate on customer satisfactions. This fieldwork phase was implemented during the period from March to May 2010.

On the other hand, the quantitative part aimed to identify the main factors that impacted on bank customers behavioural intentions towards the acceptance and use of Internet banking. Covering the whole population in this case is difficult and a sampling technique was required. Saunders et al. (2007) and Yin (2009) agreed that in case study research non-probability sampling (non-
random sampling) is suitable. The appropriate type of non-probability sampling for this study is purposive sampling since it maximizes the possibility of obtaining accurate and reliable information about the studied phenomenon (in this study acceptance of Internet banking) and relies upon choosing participants who have both experience of the phenomenon (dealing with banks and using electronic banking services) and the ability to discuss and communicate their experiences of that phenomenon (Denzin and Lincoln, 2000). In this regard, one thousand questionnaires were distributed in the seven Omani commercial bank branches. 731 questionnaires were collected, 611 were valid for statistical analysis. It should be noted that the data was collected in a three month period from August to October 2010. Moreover, the distribution of questionnaires was not confined to the city of Muscat, but included all regions in the Sultanate of Oman, such as Salalah, Nizwa, Sohar, Sur, Musandam and Al-Buraimi. Ultimately, the researcher used non-stratified sample as there were shortage of demographic information regard the Omani bank customers.

4.7 Pilot Study

In order to achieve a high level of validity and reliability, the interview and questionnaire questions were tested through a formal pilot study. According to Williams (2003) a pilot study has to take place before the official fieldwork and should be applied to a similar sample to the research population to be examined. Furthermore, the researcher has to take into account that a pilot study requires ethical approval before being undertaken. Veal (1997) and
Jennings (2008) pointed that a pilot study is not limited to quantitative research, but also is important in qualitative research. A pilot study enables researchers to make appropriate amendments in terms of sequencing and wording of the questions in interviews and questionnaires.

Oppenheim (2001) and Boynton (2004) clarified that there are important reasons that encourage researchers to pilot their research questionnaires before using them officially. For example, the pilot study gives researchers an idea of the required time for completion of the questionnaire. Moreover, implementing a pilot study helps researchers to check that all questions are understandable and there are no ambiguities. Boynton (2004) added that piloting gives the researchers confidence that the instructions are clear and easy to understand. In addition, a pilot study allows researchers to eliminate questions that are not useful for the study (Dillman, 2000).

Based on the above, the interview questions and questionnaire were piloted in this study in order to increase the study reliability and validity. The interview and questionnaire questions were piloted through two different stages. Firstly, the interview and questionnaire questions were reviewed by some academic scholars in order to make sure that all questions were suitable and appropriate. Some corrections were suggested and implemented. Secondly, the interview questions and questionnaire were re-tested. The interview questions were sent to two bank managers, in order to ensure that questions were understandable.
and appropriate. This was done in February 2010 – fortunately no corrections were suggested by the bank managers.

Prior to re-testing, the questionnaire was sent to bank managers who had been interviewed previously to clarify their opinions on the questionnaire. The questionnaire was re-tested by distributing fifty questionnaires to different bank customers, forty-four were collected. This was done in the last week of July 2010.

Fortunately, the respondents' feedback was helpful, and they suggested a number of amendments. The respondents' feedback was classified in three groups: questionnaire design; wording of questions; the addition of question choices. With regards to questionnaire design the respondents had praised the questionnaire design, but noted errors in the numbering of questions. Furthermore, some respondents made it clear that the questionnaire instructions were not clear, especially in section two when some questions had to be skipped by some respondents. Regarding the respondents' feedback the errors in the question numbers were corrected and the instructions improved to ensure the respondents answered the correct questions.

With regard to the wording of questions, there was a lack of clarity regarding the first and second questions in section 3.4 which related to cultured influences on the use of Internet banking. Moreover, the respondents were not familiar with the term mobile banking, which they considered as short message
service (SMS) banking. Finally, some respondents declared that some questions (for example 1.4 and 2.10) needed to have more possible answers added to them. The final questionnaire is available in appendix 4 and 5.

4.8 Data Analysis

The different methods of data analysis used in this study are explained in the following sections.

4.8.1 Qualitative Data Analysis

With regard to the qualitative data analysis which included the semi-structured interviews with bank managers and the open-ended questions in the questionnaire, content analysis was employed. Sandiford and Seymour (2007) explained that compared with quantitative data analysis, there is no ideal method or analysis of qualitative data. Content analysis was defined by Holsti (1969:14) as “any technique for making inferences by objectively and systematically identifying specified characteristic of message”. Some years later Krippendorf (2004:18) offered a broad definition of content analysis as “a research technique for making replicable and valid inferences from texts or other meaningful matter to the contexts of their use”. 
Based on this, the researcher chose content analysis for the analysis of the data in order to identify the main barriers and factors that impacted on the adoption and acceptance of Internet banking in the Sultanate of Oman. The qualitative data was analysed using NVIVO 8 computer software, which builds on the content analysis method.

In order to interpreting meaning from content of text of bank managers interviews coding method applied. According to Hsieh and Shannon (2005) there are three approaches of coding in content analysis method: conventional, directed and summative. Firstly, the conventional coding type of content analysis starts with observation which leads the researcher to codes and defined during the stage of data analysis. Codes in this case derived from the collected data. Secondly, if the study started with development of theory directed coding type is suitable. Thus, the researcher codes and defined before and during data analysis, as the codes are derived from the research theory or relevant research findings. Finally, if the study starts with searching for keywords summative coding type is appropriate. In this regard, the keywords are the codes and researcher identified the main keywords before and during data analysis. However, the research keywords derived from the literature review.

The directed coding approach was implemented in this research study to analyse the data collected from the interviews and questionnaire open-ended
question. This is because there were several existing theories and models of technology acceptance plus a rich literature regard technology and Internet banking adoption and acceptance. Figure 4.11 summarized the qualitative data analysis steps.

Figure 4.11 Qualitative data analysis steps
4.8.2 Quantitative Data Analysis

The quantitative data analysis (bank customers' questionnaire survey) used two computer software packages (Statistical Package for the Social Sciences, SPSS 17 and Analysis of MOment Structures, AMOS 8). In order to identify the main factors that impact on the acceptance of Internet banking in Oman, the analysis went through several stages. Firstly, descriptive analysis was applied in order to summarise the collected data, Fink and Kosecoff (1988) explained that descriptive analysis is considered the most commonly adopted statistical technique used to summarise data. The descriptive analysis employed a number of statistical techniques (e.g. frequencies, percentages, mean and median).

The following statistical analysis stages aimed to test and evaluate the research conceptual framework (the proposed model of Internet banking acceptance) in order to develop an appropriate model. Secondly, supplementary to the preliminary statistical analysis an analysis of the conceptual framework constructs and moderators were applied. This was implemented by creating average constructs. The tests used were parametric tests, and according to the nature of the collected data two parametric statistical tests were used t-test and ANOVA. The t-test was used to compare the scores of two groups whereas the one-way analyses of variance ANOVA with Post Hoc tests were applied to
compare between one independent variable which has several numbers of levels with different factors (Pallant, 2004; Pallant, 2007).

Thirdly, the correlation coefficients among the constructs and moderators were measured in order to ensure that the relationship between the constructs and moderators were linear. This part was implemented by using confirmatory factor analysis (CFA) (DeCoster, 1998). Finally, structural equation modelling (SEM) was used to identify the final model constructs and moderators relationship using AMOS software to evaluate the model by testing the relationships between the model constructs and moderators (Byrne, 2001; Enders and Bandalos, 2001). Figure 4.12 summarise the questionnaire survey analysis methods.
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4.9 Reliability, Validity and Triangulation

Academic researchers have to be aware of the quality of their research. To achieve high quality research researchers have to bear in mind the importance of reliability and validity. Bryman (2008) explained that reliability and validity are interrelated concepts – research without reliability cannot be valid.

Figure 4.12 Quantitative data analysis steps
4.9.1 Reliability

In academic research reliability means that another researcher would get consistent results if they adopted the same research techniques (Babbie, 1995). Moreover, Amaratunga et al. (2002) explained that reliability aims to reduce research errors and biases. In addition, Robson (2005:551) identified reliability as:

The extent to which a measuring device, or a whole research project, would produce the same results if used on different occasions with the same object of study. There are well-established procedures for assessing reliability in fixed design research. The issues are more difficult to deal with in flexible design research, where some researchers would regard the concept as inappropriate.

In the current study, the researcher sought to increase the reliability by considering the following issues:

- Using different research approaches (qualitative and quantitative) and triangulating methods (documentation, interview and questionnaire).
- In developing the research conceptual framework various theories that addressed the main factors that impact users’ acceptance of developed technology were reviewed in order to increase the factors’ reliability.
- Conducting a pilot study for the questionnaire and interviews questions.
- Document analysis and bank website overviews were implemented before the interviews in order to enhance the interview discussions.
Chapter Four: Research Approach

- All the interviews were conducted by the researcher.
- Semi-structured interviews were used to discuss the same issues with all interviewees.
- Appointments were taken by phone to avoid busy times and ensure that bank managers were free to participate.
- Interviews were conducted in English in order to avoid translation errors.
- During the interviews the conversation was recorded and contemporaneous note taken by the researcher, as a back-up in case the recordings were not clear.
- The recorded interviews were listened to many times to compare the recorded conversation with the interviewer's notes.
- NVIVO computer software package was used to transcribe and code the interviews and the open-ended questions from the questionnaire survey with bank customers.
- Just one analysis technique (content analysis) was used to analyse the qualitative data (interviews and open-ended question) to avoid any bias.
- Cronbach’s alpha coefficient was used to confirm the reliability of the factors. All values of Cronbach’s alpha coefficient were above 0.7 (see Table 8.1). According to Pallant (2007) an acceptable minimum Cronbach’s alpha coefficient is 0.7.
- An even number of Likert scale options (strongly agree, agree, disagree, strongly disagree) were used to increase the reliability, so
respondents had to select an alternative option that conformed to their opinion.

4.9.2 Validity

Research validity concerned on research finding, to make sure that findings reflect what they should be about (Saunders et al., 2007). Nachmias and Nachmias (1992) and Silverman (2001) explained that in quantitative and qualitative research the issues of validity are appropriate. In addition, Robson (2005:553) identified reliability as the following:

_The degree to which what is observed or measured is the same as what was purported to be observed or measured. At its most simple, this refers to the truth status of research reports. However, a great variety of techniques for establishing the validity of measuring devices and research designs has been established, both for quantitative and for qualitative research. More broadly, the status of research as truth is the subject of considerable philosophical controversy, lying at the heart of the debate about postmodernism._

The researcher increased the research validity by following up with several points as follows:

- Interview and questionnaire questions were developed according to the research problem, questions, aim and objectives in order to cover all aspects of the study.
- The study was supervised by three supervisors to ensure its validity. They make sure that the research process and findings matched the aim and objectives of this study.
Validity was achieved by undertaking three methods (documentation, semi-structured interviews and questionnaire survey) to investigate the research problem.

Interviews were conducted in English to avoid any ambiguity results from translation.

To avoid the risk of wrongly-interpreted answers during transcription of interviews, conversations were recorded and contemporaneous notes were taken by the researcher.

Participants (bank managers and customers) were informed that their personal information would be strictly anonymous and it would be used for research purposes only.

During interviews following-up questions were used to ensure that the participant understands the question and given the correct answer.

Each interview was transcribed directly on the same day of the interviews in a separate word document.

The results of first stage (interviews) were tested in the second stage (questionnaire).

Questionnaire distributed bilingual languages Arabic and English, to give participants the opportunity with which language they prefer to complete the questionnaire.

Questionnaire was designed by asking following-up questions in a negative way to ensure that the participant answered the questionnaire correctly.
To increase the responses rate and achieved the validity a self-administered method was employed. The researcher delivered the questionnaire by hand to each respondent and collected later.

- Cross-checking through the questionnaires data entering was done. Random sample was selected (every the questionnaire of the total questionnaires) and the data entering were reviewed.

4.9.3 Triangulation

Social science researchers deal with humans whose lives and behaviours are usually complex and changeable. Consequently, to understand the research participants' perspectives and feelings researchers need to collect accurate data (Fontana and Frey, 2005). Therefore, triangulation is an important research requirement. According to Robson (2005:553) triangulation is:

\[ A \text{ research approach employing more than one perspective, theory, participant, method or analysis. The notion is that this helps in getting a better 'fix' on the object of study.} \]

Breitmayer et al. (1993) declared that the purpose of triangulation in research is to achieve two distinct elements: research confirmation and completeness. Patton (2002) identified four different dimensions in achieving research triangulation: data triangulation; investigator triangulation; theory triangulation; methodological triangulation. In this research study each of the four triangulation dimensions were implemented according to Patton (2002) as follows:
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- **Data triangulation**: research data was collected from different sources (bank documents, bank websites, bank managers and bank customers) using different research methods (documentation, semi-structured interviews and questionnaire survey).

- **Investigator triangulation**: the researcher worked with three supervisors who checked and evaluated his research work on an ongoing basis.

- **Theory triangulation**: the research conceptual framework was developed based on the UTAUT model (Venkatesh et al., 2003) which integrated eight different technology acceptance theories.

- **Methodological triangulation**: to achieve the research aim and objectives two types of methodological triangulation were applied: using qualitative and quantitative research approach and employing data triangulation by using more than one source of evidence.

### 4.10 Ethical Considerations

Social research in general is aimed to explore humans’ thoughts, feelings, experiences and motivations (Mauthner et al., 2002). Therefore, there has to be a successful relationship between the researcher and the participants. This relationship depends on ethical considerations. Bell (2008) clarified that ethical responsibility start when the researcher develops his/her research plan and continues to develop an ethical approach to dealing with the research
participants. However, Miller and Brewer (2003: 95) defined the research ethical considerations as:

*The ethics of social research is about creating a mutually respectful, win-win relationship, in which participants are pleased to respond candidly, valid results are obtained, and the community considers the conclusions constructive.*

Davies (2007) explained that researchers have to know the principles of how to deal with different types of respondents, especially if the period of data collection is short. Furthermore, researchers should not harm respondents who participate in the research study. Moreover, researchers have to take care about issues of anonymity and confidentiality. To ensure that this research design included appropriate measures to protect the interests of the bank managers and customers who were involved in this study, the researcher followed and implemented the ethics guidelines and approval procedure for Cardiff Metropolitan University (UWIC), in which the researcher is asked to consider several aspects of the study: participants; knowledge; democratic values; justice; equity; education research quality; academic freedom. This study ethical consideration applied as follows:

- The researcher considered ethical issues in the early stages of the research.
- Issues of data ownership, intellectual property rights and copyright matters were considered.
- Prior authorization was taken from Omani bank managers to participate in this study. After getting approval from the bank, individual permission was taken from each manager who contributed to this study.

- Participants were provided with accurate information about the research aim, objectives and possible outcomes.

- None of the participants were harmed or injured by participating in this study.

- Participants (bank managers and consumers) were informed that any information they provided, such as personal names, roles and responsibility, banks names, bank accounts and statements would be treated confidentially and would not be made available to the public.

- All collected data was saved and kept in a secure place.

- To maintain anonymity, no real names or positions were identified in this study. Coding were developed for each interviewee and used consistently in presenting the results (see Appendix 2).

- Participants were informed that they could withdraw from the study at any time either during the interview or when they completed the questionnaire.

- Interviewees were given the right to refuse to answer any question that they believed contained confidential information.
4.11 Generalisation

Generalization of the results of a study from a sample to a population is an aspect of a research study that relates to research validity (Byrne, 2002). Williams (2002) pointed that in interpretive research generalization is a matter of debate because researchers in social research usually have their own way of thinking and measuring the phenomenon. Furthermore, Williams (2002) clarified that research generalization can be categorized into three types as follows:

- Total generalization: the research findings from a sample are typical of a population.
- Statistical generalization: the research findings reflecting the whole population.
- Moderatum generalization: the research findings can be generalized to other similar societies.

Miller and Brewer (2003) illuminated that quantitative research which deals with numbers through a sample reflecting the whole population is more suited to statistical generalization. Williams (2002) showed that moderatum generalization is more widely used in qualitative research as the findings from one particular case can be generalized to other cases. In addition, Williams
(2002) explained that total generalization occurs with quantitative studies although it is not impossible that it occurs in qualitative research study.

This research study mixes the two research approaches – quantitative and qualitative – statistical and moderatum generalization can be used to generalize the research results. In this study a sampling technique was used to identify a sample to clarify the main barriers and factors that affect the adoption and acceptance of Internet banking in Oman. Therefore, the study findings can be generalized to all Omani banks consumers. Furthermore, the research model and findings can be used in other similar cases in regard to the adoption and acceptance of Internet banking in other developing countries. Since, the nature and culture of many developing countries is similar. Figure 4.13 presents the types of generalizations adopted in this research study.

![Diagram of generalization types](image-url)

Figure 4.13: Types of generalizations adopted in this study
4.12 Summary

This chapter has presented the theoretical and practical research approach. The chosen research theoretical approach was the research paradigm “Pragmatism” as the study mixed qualitative and quantitative research approaches. The practical approach was classified into research methodology and methods. The research methodology selected for this study to investigate the adoption and acceptance of Internet banking in the Sultanate of Oman was a single embedded exploratory case study. Additionally, three different methods were used in this study - documentation (bank documents and website overviews), interviews (in-depth semi-structured interviews) and survey (questionnaire). In addition, the reliability and validity of the research have been discussed, as well as the ethical consideration and generalization issues. Figure 4.14 outlines study research approach. The next chapter presents and discusses the adoption of Internet banking in the Sultanate of Oman banking industry.
Figure 4.14: Study research approach, based on Sarantakos (1998) research design
CHAPTER FIVE: ADOPTION OF INTERNET BANKING IN THE SULTANATE OF OMAN BANKING INDUSTRY

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5.1 Introduction

The current chapter presents the results and discussion relating to objective two of the research study by exploring the adoption of electronic and Internet banking in the Sultanate of Oman. This was implemented through two stages, the first stage was implemented during the period from October to December 2009 and was conducted to identify the current state of electronic and Internet banking through document analysis and local bank website overviews to identify the electronic banking functions implemented in the Omani banking industry (section 5.2) and the services available for Internet banking customers (section 5.3). In the second stage, fourteen in-depth semi-structured interviews with senior managers from the seven Omani commercial banks were conducted during the period from March to May 2010. Section 5.4 discusses Internet banking concept from a local bank managers perspective. Section 5.5 investigates the main barriers that faced the Omani commercial banks in the early stages of adoption of Internet banking. Section 5.6 summarises the chapter.
5.2 Electronic Banking in the Omani Banking Industry

Electronic banking in the Sultanate of Oman has become more evident from the beginning of the new millennium (Omantel, 2006). By reviewing Omani bank websites (Ahli Bank, Bank Muscat, Dhofar Bank, Oman Arab Bank, Oman International Bank, National Bank of Oman and Sohar Bank) and the annual reports (2006 – 2010) of the CBO it became clear that there had been a quantum leap in the Omani banking industry during these years, especially with regard to the self-service banking channels. A number of electronic banking functions (or as labelled on local bank websites’ ‘electronic channels’) have been adopted and launched successfully in Oman, for example, the number of ATM machines increased 40.7% during the period 2006 – 2010 (Central Bank of Oman, 2011).

Whilst Omani commercial banks have adopted a number of electronic banking functions during the past decade, some of these functions are still in their infancy while others are more mature. Banks are making adjustments in their services to meet the industry competition and the demands of the customer. From the websites of Omani banks it is clear that these banks have adopted and launched a number of electronic banking functions as follows:

*Note: The following websites were accessed in January 2010.
Ahli Bank: [http://www.ahlibank-oman.com](http://www.ahlibank-oman.com)
Bank Muscat: [http://www.bankmuscat.com](http://www.bankmuscat.com)
Bank: [http://oman-arabbank.com](http://oman-arabbank.com)
International Bank: [http://www.rib.co.om](http://www.rib.co.om)
Bank of Oman: [http://www.nbo.co.om](http://www.nbo.co.om)
Bank: [http://www.banksohar.com](http://www.banksohar.com)

Dhofar Bank:
Oman Arab
Oman
National
Sohar
Chapter Five: Adoption of Internet banking in the Sultanate of Oman banking industry

- Automatic Teller Machine (ATM)
- Cash Deposit Machine (CDM)
- Telephone Banking
- SMS Banking
- Internet Banking
- Web Banking
- Home banking

According to the local bank websites, all the Omani banks provide their customers with three electronic banking functions: ATM, Web Banking and SMS Banking. With regard to the ATMs, B5MM and B2CM explained that it was the first self-service function adopted and launched and initially customers refused to use it without the support of bank staff. However, customers began to adopt the function successfully after bank staff clarified the efficiency of these functions and how they can use them. This finding agrees with Scupola (2002) who reported that ATMs were one of the first electronic banking functions to appear globally in the banking industries and that it has been adopted successfully.

With regards to Web banking, the seven Omani commercial banks established their own websites in order to provide their customers with the latest financial information. These websites were designed to ensure they were easy to use. In addition, users of Web banking services can choose their preferred language – Arabic or English. Moreover, Omani local banks provide their customers with mobile SMS banking. In this regards, B3EM and B6EM clarified that the Omani banking industry had not adopted other mobile banking functions as it mainly depended on the Wireless Application Protocol (WAP) which had not been
adopted in the Omani banking industry. This finding supports the findings of Hung et al. (2003) who indicated that WAP enabled users to view and browse the Internet while they were on the move using their mobile phone devices:

... We try not to call it mobile banking for one reason—because in addition to SMS banking, the mobile bank is figure upon WAP banking. So WAP banking is under the mobile, SMS banking is on mobile. If we use the term mobile for both of them, it kind of gets confusing ...

(B3EM)

An overview of the Omani commercial banks websites revealed that five out of seven Omani banks adopted and launched Internet banking during the period 2005 – 2009 (Dhofar Bank, Muscat Bank, Oman Arab Bank, National Bank of Oman and Sohar Bank). Through the research fieldwork it became clear that Al-Ahli Bank had adopted Internet banking in January 2010 but had not launched it officially. The bank provided an Internet banking service on a separate website link for those customers who asked for it. By January 2011 Ahli Bank had launched Internet banking services officially. Thus, the Oman International Bank is the only local bank that had not adopted Internet banking by 2011, as the bank management believed that it was not the right time to adopt Internet banking.

Five of the seven Omani banks (Bank Muscat, Dhofar Bank, Oman Arab Bank, Oman International Bank and National Bank of Oman) provided their customers with telephone banking services. The function relies on the Intelligence Voice Requisition (IVR) technique, as customers can complete their entire account enquiries without visiting their bank branch. The other two banks (Ahli Bank and
Sohar Bank) reported in April 2010 that they would soon provide their
customers with the telephone banking services.

The CDM was a new electronic function in the Omani banking industry.
According to the literature, Scupola (2002) explained that cash deposit is an
ATM function. However, through the overviews of Omani bank websites it
became clear that Omani banks have a separate machine for electronic cash
deposits. However, up to April 2010, only four banks (Bank Muscat, Dhofar
Bank, Oman Arab Bank and National Bank of Oman) had launched this new
service to their customers. In addition, the annual report (2010) of the CBO
demonstrated that 32 CDMs were available for customers' at the end of 2010
(Central Bank of Oman, 2011).

Home banking is an electronic banking function that is not offered in the Omani
banking industry. However, during the interviews it became clear that (B5)
provided their corporate consumers with home banking for enquiry purposes
only. This is consistent with the literature review as Cronin (1997) explained that
home banking is an electronic banking function which provides users with
limited bank enquiries. Other banks made it clear that because of the difficulty
and ineffectiveness of the system, they had decided to stop providing their
corporate clients with this service and replaced it with corporate Internet
banking:
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... The home banking we used to offer normally for corporate customer for enquiry purpose only. We felt it's difficult because it requires a lot of integration and other stuff and it was not useful to have it really. Therefore, we have decided to replace it with a new platform which is easy to access and easy to manage which is corporate Internet banking ...

(B6EM)

Finally, not one of the seven Omani commercial banks had adopted television banking, indeed some of the interviewees had not heard about this electronic function before (e.g. B1MM). Therefore, it can be noted that seven different electronic banking functions are available in the Oman banking industry (see Figure 5.1).

Figure 5.1: Electronic banking functions adopted by Omani banks.
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To that end, it can be noted that Omani banks were seeking to catch-up with the global development and competition in the banking industry, and were aiming to achieve high levels of customer satisfaction by providing them with several banking channels. In this regard, Omani banks can be classified as good adopters of electronic banking in general, even if some of these functions are not widely accepted by their customers. However, Omani banks were still increasing their provision of traditional bank channels, evidenced in CBO annual reports 2006-2010, which indicated that the number of bank branches had increased by 32% through the five years 2006-2010.

5.3 Internet Banking in the Omani Banking Industry

Internet banking was only adopted and launched officially in the Sultanate of Oman banking industry by 2005 (e-commerce, 2009) and therefore, the adoption of Internet banking is still in its early stages, this finding is consistent with Saqer (2009). According to the overview of local banks websites services offered through Internet banking vary among the Omani banks. It may be perceived that this is due to the nature of using technology in each bank. The findings of this research revealed that all banks provide their Internet banking users with following functions:
• Balance checking.
• Credit cards repayments.
• Transferring money between accounts.
• Fixed deposit requests.
• Ordering cheque books.
• Updating customer information.
• Viewing and printing bank statement.

With regard to funds transfer, banks allow their online customers to transfer funds between their own accounts. Three banks (Dhofar Bank, National Bank of Oman and Sohar Bank) offered third party transfers within the same bank. Only two of the banks (Dhofar Bank and National Bank of Oman) gave the opportunity to their online users to accomplish third party transfers between local and international banks (remittance transfers). However, it should be noted that according to the banks' regulations all local and international remittances take place the next working day. In addition, Bank Muscat offers limited online international remittance, as on-line customers could transfer funds to India only.

Paying utility bills is available for online customers by four banks (Bank Muscat, Dhofar Bank, Oman Arab Bank and National Bank of Oman). However, the managers of the other banks noted that their banks would provide this service in future. They were at that time in negotiation with utilities companies to have an agreement regarding a payment mechanism through Internet banking. Furthermore, the National Bank of Oman was the only bank offering credit or debit card requests via Internet banking at the time of this study.
Dhofar Bank allowed online active customers to open other matching accounts by signing into their Internet banking account. Furthermore, in order to communicate with bank customers more securely, Bank Muscat, Dhofar Bank and National Bank of Oman offered their Internet banking users a secure mailbox. Through this mailbox users could send their queries, complaints and feedback. This enhanced the service quality and kept banks in touch with their on-line customers. In addition, Bank Muscat was the only bank that offered a mobile top-up service albeit limited to just one mobile communication company (Nawras).

Briefly, it can be concluded that Omani banks provide their customers with various functions through Internet banking. This goes against the findings of e-commerce (2009) who indicated that Omani banks had provided their customers with limited Internet banking functions. Table 5.1 outlines the Internet banking functions that were offered in Omani banks until 2010, according to the website overview.

<table>
<thead>
<tr>
<th>Table 5.1: The available Internet banking services in Oman banking industry</th>
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</thead>
</table>
| <table>
| **Internet banking functions** | **Banking functions** |
| Paying utility bills. | Fixed deposit requests. |
| Credit cards repayments. | Credit / Debit card request. |
| Ordering cheque books. | Mobile top-up. |
| Opening joining account. | Third part transfers within the same bank. |
| Third part transfers between local banks. | Remittance transfers. |
| Updating customer information. | Transferring money between customer accounts. |
| Secured mailbox. | |
| </table> |
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Through the website overview it became clear that banks which had adopted and launched Internet banking had recognised the importance of a simple to use interface for Internet banking. Security was also a common issue for those banks which had adopted Internet banking. In this regard, was clearly displayed the security and trust company slogan (VeriSign Trusted). In addition, each bank provided on-line users with safe on-line banking tips which included security instructions and warnings (see Figure 5.2). With regard to the availability support for customers banks linked Internet banking with other electronic functions, such as telephone banking. Bank Muscat, National Bank of Oman and Sohar Bank provided users with a demonstration of how to deal with the system. This would be helpful for those using the Internet banking for the first time.

Figure 5.2 Snapshot of bank Muscat Internet banking website
In order to have a clear understanding of how the banking industry in Oman understood the Internet banking concept, all the interviewees were asked about their thoughts on the Internet banking term and how they defined it. The bank managers explained that the term Internet banking referred to all banking services provided through the Internet. This service aimed to achieve the highest level of customer convenience by enabling them to accomplish all their non-cash bank transactions or any bank enquiries 24/7 and from any location. This finding concurs with Podder (2005) and Shao (2007) who defined Internet banking as a banking service offered and delivered via the Internet. Bank customers accomplished their financial transactions via the Internet through bank websites at any time and anywhere as long as they had a computer and Internet connection. Furthermore, B3EM and B7IM added that banking on-line helps customers save time, as customers do not have to visit the bank and wait in a queue:

... This is a channel which will enable customers in the comfort of home and a lower cost of transaction and a faster utility between the total and straight-through processing, otherwise they have to walk and get it done this is the easiest way to work and organize in a short period of time, customer convenience plus a lower cost of transaction plus access of, easier access for the customer ...

(B7IM)

Moreover, all the bank managers declared that the Internet banking concept remained the same either from the bank or customer perspective. B4IM added
that Internet banking is available to all bank customers via the Internet 24/7, except in the case of power cuts or Internet separation:

... So here you save time and it's convenient, anytime you can do it 24/7 there are no breaks here except if your laptops battery comes down, the electricity or Internet connection comes down ...

(B4IM)

Alternatively, the bank managers clarified that there was a difference between electronic and Internet banking. They explained that a number of people think that the terms Internet banking and electronic banking are the same thing, but in fact there is a difference between the two concepts. Electronic banking means that all electronic banking channels (self-service) that are available for bank customers, where customers can complete their enquiries and transactions alone. Internet banking is considered to be one of these electronic banking functions which allow bank customers to complete their account enquiries or transactions through the Internet. This finding is supported by Wang et al. (2003) who indicated that Internet banking is one of several electronic banking functions which allow bank customers to perform routine transactions on-line:

... Internet banking would regard to the World Wide Web, that's the Internet banking, but e-banking is totally different. To me, Internet banking is a function of electronic banking functions ...

(B2CM)

From the findings of these interviews it can be concluded that Omani banks have a clear understanding of the meaning of the term Internet banking. In addition, Omani bank managers demonstrated that they have a clear understanding about the differences in terms of electronic and Internet banking.
5.5 The Main Barriers to Internet Banking Adoption in the Omani Banking Industry

Any new service adopted and launched for the first time is likely to face a number of barriers and difficulties, especially in the early stages. The bank managers indicated a number of barriers and difficulties that they had encountered in the early stages of Internet banking adoption. They explained that customers' reluctance to use Internet banking is acceptable, especially in the early stages, as the service was new and it took some time from them to accept it. This is consistent with Fisher (2000) who noted that after providing bank customers with the Internet banking customers needed some time until they recognized the system characteristics and benefits and decided to accept or refuse it.

In addition, interviewees indicated a number of barriers that faced banks when they adopted and launched Internet banking. In this regard the main barriers in this study can be classified into two main categories: external and internal barriers. Under each of these main categories there are a number of groups as mentioned in table 5.2.
Table 5.2: Classification of Internet banking adoption barriers

<table>
<thead>
<tr>
<th>Main Categories</th>
<th>Areas of Barriers and Difficulties</th>
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<tbody>
<tr>
<td>Internal Barriers</td>
<td>• Management issues.</td>
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<tr>
<td></td>
<td>• Customers' Behavior issues.</td>
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<td></td>
<td>• Cultural issues.</td>
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<tr>
<td>External Barriers</td>
<td>• Governmental issues.</td>
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<tr>
<td></td>
<td>• Technological issues.</td>
</tr>
<tr>
<td></td>
<td>• Trust issues.</td>
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</tbody>
</table>

5.5.1 Internal Barriers to Internet Banking Adoption

- **Bank Management Issues**

The research findings revealed that since the bank is the provider of Internet banking, the main barriers and difficulties lies with their management systems. Under this category banks have to be aware when they adopt and launch any new services, as the banking industry currently appears to be highly competitive. Thus, the bank management has to take the right decision at the right time in order to cope with the local and global competition.

However, three managers (B1EM; B4CM; B7IM) identified that industrial competition is one of the main difficulties that faced banks' adoption of Internet banking, especially in the early stages. In term of competition and marketing challenges banks have to undertake a feasibility study regarding the adoption of Internet banking. This leads them to taking the right decision in relation to choosing a suitable approach that matches with their existing technology at the right time. This is in agreement with Speece (2000) who explained that banks
which are considered as high users of advanced technology can adopt Internet banking more easily than less experienced banks. In addition, Sayar and Wolfe (2007) indicated that technology has allowed a number of new banks to offer their services in the banking industry. This encourages banks to be concerned about their service quality and customers satisfaction. One of the managers confirmed this:

... Nowadays, the world is quite open, so we have to be worried regards the global competition. We select the appropriate technology which suit us and suit the requirements of the market and choose the right time to launch it as well as taking into account the competitiveness of the bank in the industry ...

(B71M)

The previous point leads to another internal barrier related to banks’ management, which is staff awareness. Some local banks faced major difficulties with their staff, who refused to accept and use Internet banking. Some other bank employees were not aware of Internet banking and did not have a personal computer and Internet connection at home, which impedes their acceptance and use. Thus, to get rid of this difficulty some banks (e.g. B1; B2; B3) had developed intensive training courses for their employees to explain the importance and benefits of Internet banking and how to deal with it. It was believed that bank employees were best able to market the service and convince customers to accept and use Internet banking. This finding is consistent with that of Rotchanakitumnuai and Speece (2003) who noted that bank staff’s rejection of the acceptance and use of Internet banking is a major adoption barrier. In this regard, the Omani banks should provide their employees with appropriate training regarding Internet banking since this would
reflect positively on staff acceptance. One of the Omani bank managers explained:

... We even faced issues where we have employees who are not aware and do not have Internet at home. So without them having Internet at home, they cannot log-on to the Internet and check their account online. So we have taken a different approach. We sit with our staff and talk to them about Internet banking. We’re giving them a live demo so that they can see what Internet banking can do. This has helped in increasing the acceptance from our staff and now this has started reflecting on our customers ...

(B3EM)

Moreover, ten of the fourteen respondents noted that banks should pay attention to customer feedback in order to develop their on-line services and encourage customers to accept/continue using Internet banking. This finding agrees with Aladwani (2001) and Suganthi et al. (2001) who clarified that banks should pay attention to their customers in order to motivate them to accept and use Internet banking. In addition, B4CM declared that one of the major problems that faced the bank and continued to affect the acceptance of the Internet banking in their bank was ignoring customer feedback with regard to Internet banking services and bank website design. The manager said that a number of services were not available on-line as compared with other banks and customers were always asking for them. Moreover, customers and bank staff complained constantly about the bank website which was complicated and confusing. Unfortunately directors of the bank, ignored the demands of customers and staff alike, and ignored the importance of the customer’s feedback:
... There are a lot of services that are provided by the competition that is not provided in our website and customers asked for it, like inward and outward remittances and there are some particular areas that are not available on-line. The designing of the website is kind of confusing for a newcomer who just enters the website. It is very difficult for them to find what they need and they complained about it. Even for me when I started to bank on-line it took a very long time to get it ...

(B4CM)

B6EM emphasised that banks have to take in account customer feedback, as the service cannot remain the same for several years without being improved. It was recognised that customer’s feedback assisted the banks’ management to improve their services:

... Internet banking cannot go for five or six years without any improvement. You have to improve; you have to take feedback from the customers. Many customers have presented their feedback, so this feedback can really help in improving ...

(B6EM)

Thus, bank management was a major internal barrier that affected the adoption of Internet banking in the early stages. Bank management barriers included staff awareness, customer feedback and timely decisions to address industry competition.

5.5.2 External Barriers to Internet Banking Adoption

Based on the analysis there were a number of external barriers that affected the adoption of Internet banking. The Omani bank Managers were asked about the external barriers that faced their banks in the early stages of Internet banking
adoption. The main external barriers were grouped into five different categories (see Table 5.2). The following points illustrate the main external barriers groups that affected the Omani banks in adopting Internet banking.

- **Customer Behaviour Issues**

The Omani bank managers clarified that customer acceptance of Internet banking was the main difficulty that faced banks in the early stages of Internet banking adoption and that its impact still ongoing. Customers hesitated to accept Internet banking as they were worried about how they would deal with this new bank service, without human interaction. B2CM elucidated that Omani customers are conservative and they would not shift from traditional banking to Internet banking. In addition, B7IM explained that in the absence of human interaction, customers found it difficult to accept and use Internet banking. B3EM confirmed that customer acceptance was considered a major barrier, as people were frightened of new technology and they did not accept Internet banking easily.

Furthermore, managers explained that the acceptance of Internet banking depended on customers’ trust of the Internet, as they were concerned about security and privacy (B1EM; B2CM; B3EM; B4CM; B7IM). Finally, the Omani bank managers made it clear that the acceptance of Internet banking relied upon a number of elements which will be discussed in-depth in the next chapter (see chapter 6). These findings are consistent with those of Pikkarainen et al.
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(2004) as well as Lichtenstein and Williamson (2006) who pointed that user acceptance is one of the major barriers that affected the adoption of Internet banking:

... Customers acceptance of Internet banking was the main difficulty that faced us when we announced the Internet banking for the first time and it still affects us, in particularly the absence of face-to-face interaction leads customers to refuse to accept and use it. Generally, there are several issues that affect customers' acceptance of Internet banking ...

(B7IM)

Moreover, B1MM and B6BM noted that for customers to accept and use Internet banking they need to have good computer and Internet knowledge. The bank managers explained that there was a lack of computer access and Internet knowledge in Oman, as their customers were not familiar with using computers and the Internet. In addition, B1MM clarified that lack of well-educated customers regarding the use of computer and Internet was a barrier that affected the adoption and acceptance of Internet banking. B7CM explained that lack of computers and Internet knowledge was a barrier that had affected the acceptance and use of Internet banking in the early adoption stages but that this barrier would disappear in the near future. This is because recently the Ministry of Education in Oman had developed their programme and started to teach computer and Internet subjects in schools from day one. Thus, the next generation of Omanis would be more willing to accept and use Internet banking:
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... The new generation start using the computer from day one in school that is why not like my generation I mean we also start using the computer at later stage like when we go to college but now all the majority of the people they are using it from the first day in school. But for people who are older if you ask them to use their computer to bank on-line forget about it ...

(B7CM)

Furthermore, B2CM agreed with other bank managers that Omanis suffered from a lack of computer and Internet knowledge which led them to be less aware of Internet banking. The manager declared that 35 percent of Omani population were fifteen years old or less. So future generations would be more willing to accept and use Internet banking compared with the older generations. These younger people would have gained a good computer and Internet knowledge starting from grade one in school, which would reflect positively on their Internet banking acceptance and use. These findings support those of Robinson (2006) who indicated that individuals' attitudes and knowledge of using technology affects their reactions to start to use and dealing with new technology:

... Around thirty-five per cent of Oman’s population is fifteen years old and below so you have to accept an active users in the near future as all of these Omanis started to have a good education and their computer knowledge I assume will be perfect which will leads them to adopt and use the on-line services perfectly ...

(B2CM)

Moreover, B5CM confirmed that lack of interest and awareness of technology in general, and Internet banking in particular, was a major barrier. The manager clarified that 60 percent of bank clients were not PC users, as they did not have a personal computer and Internet at home, or they faced some difficulties with
using computer and Internet. Therefore, the bank (B5) does not offer this service to their customers as they are not ready yet to accept the Internet banking. This finding is consistent with that of Liao (2008) who noted that customer awareness is one of the priorities that banks have to take into account in adopting and launching new electronic services. For instance, B5CM manager commented that:

*... The customer bases that we have today, we could say about 60% are not PC based. They don’t have an electronic frame at home or there was a difficulty with electronic format so the bank can’t provide them with Internet banking services ...*

(B5CM)

To that end, customer behaviour was considered as one of the external barriers that affected the adoption of Internet banking in Oman. Customer behaviour includes several issues with customer acceptance being considered the main issue that impacted the successful adoption of Internet banking. Customer knowledge of computers and the Internet plus customer awareness were issues that affected the adoption and acceptance of Internet banking.

- **Culture Issues**

The second external barrier is the culture. The Sultanate of Oman is a developing country that has been classified as rich in cultural values. Therefore, any new changes that occur in the Omani culture usually take time as the culture is well preserved and the government is trying to take this issue into high consideration in term of any changes that appear in any sector of the country.
Thus, acceptance of new technology is not easy. Interviewees in the investigated banks explained that culture was an important barrier that negatively influenced the adoption of Internet banking.

Firstly, bank managers declared that Omanis preferred to use traditional banking services rather than electronic banking services, as they were more interested in human interaction than dealing with machines. This supported previous research, e.g. Fair investment (2006) who clarified that in the absence of human interaction people find it difficult to shift from traditional to electronic banking. In addition, the research findings revealed that Internet banking was one of the electronic banking functions which had been rejected by bank customers as they preferred to attend to their bank branch to complete their transactions. This is in agreement with Karjaluoto et al. (2002) who elucidated that customer attitude towards shifting from traditional banking to Internet banking was one of the key barriers that could not be ignored, which was due to the influence of culture. Moreover, B3BM and B6BM made it clear that some customers preferred to visit the bank and deal with the branch manager or assistant, which made them feel more comfortable compared with Internet banking. For instance, one of the respondents’ confirmed this by stating that:

... Probably the majority of customers would prefer to come to the branch and have a face-to-face interaction with the staff in order to be more convenient and more relaxed in doing financial transactions or get some information. They would prefer to come and meet up with the branch manager or the assistant branch manager, it makes them feel more comfortable ...

(B3BM)
On the other hand, human interaction affected bank managers themselves. In this contest, B5MM and B6EM illustrated that meeting with customers on a regular basis enabled the banks to have strong relationships with their customers. The presence of such relationship between bank management and their customers’ enabled the bank to consider their customers’ feedback regularly and to improve bank services almost immediately. Furthermore, meeting with bank customers constantly encouraged them to introduce the bank to other people. This led the bank in the short term to increase the number of customers which reflected positively on bank profitability in the longer term. Additionally, dealing face-to-face with bank staff made customers’ feel more comfortable and secure:

... I prefer to see the customer. The other point if the bank offered Internet banking I cannot see my customer to be able to have a relationship with them which is very important to the bank, because today he/she is my customer tomorrow he’ll bring his friends especially if he/she got a good service from the bank, plus it is more secure by dealing with the bank staff face to face ...

(B5MM)

The previous point clarifies another difficulty related to culture, which is the customer’s attitude towards change. B2IM and B7CM explained that the majority of Omanis were not willing to adopt new technology immediately, as they preferred to wait until the technology became more widely used. This attitude reflected on changing habits, as many Omanis were hesitating to accept Internet banking until they make sure that it is accurate, efficiency and safe. This is reflecting on their acceptance of shifting from traditional banking to electronic banking (Internet banking), to assert this B2IM noted that:
... The customer does not accept readily new things. There is like, we always want to do things that we have always been doing. It is little bit difficult for a change to take place ...

B7CM echoed this:

... The main difficulty that customers prefer traditional way to complete their bank transactions. This is like a chain and usually people take time to break away from that chain ...

Ultimately, culture was one of the external barriers that affected the adoption of Internet banking in Oman. Culture contains issues with customer attitudes towards change and lack of human interaction considered as the main issues that impacted on the successful adoption of Internet banking.

- Government Issues

The third external barrier that affected the adoption of Internet banking in Oman was the government. The bank Managers explained that the availability of the Internet was a major barrier that affected the adoption of Internet banking in Oman. Four interviewees (B21M; B3EM; B6EM; B6BM) explained that availability of the Internet was a major barrier. This is because; the Internet network did not cover all of Oman. Moreover, the quality of the Internet service in Oman suffered from a marked weakness, especially outside Muscat (the capital), as suppliers did not provide these regions with high-speed Internet. These findings are similar to those described by Al-Sabbagh and Molla (2003) who identified that the poor quality and the high price of the Internet were fundamental reasons that influenced the adoption of Internet banking:
... We are talking about Muscat—Muscat is an area where people are used to electronic services. People use the Internet. When you move to the regions, you have many locations where Oman hasn’t been able to provide high-speed Internet and people are still relying on going to a coffee shop to use Internet ...

(B6BM)

Furthermore, B5CM and B7IM illustrated that the Internet service in Oman was expensive and to motivate banks customers to start using Internet banking the cost of Internet services should be acceptable and reasonable. Moreover, the Omani Government should provide a competitive market for other Internet companies to compete in providing Internet services for residents:

... In Oman the cost of the Internet should be something permissible and acceptable. We have Oman Mobile Company, Nawras, Omantel and the prices that they charge the customers are not reasonable ...

(B5CM)

Moreover, B3BM disagreed with the other bank managers with regard to the Internet infrastructure in Oman and explained that Internet services in Oman were in constant development compared with what it had been previously. Nowadays Internet network coverage had reached most regions of Oman. Thus, B3BM concluded that Internet availability in Oman was no longer a barrier to the adoption of Internet banking:

... I do believe that the Internet today in Oman is much faster than how it was earlier. And I think it is, providers are having good Internet coverage service here in Oman ...

(B3BM)
Alternatively, B6EM agreed that Internet availability in Oman has been limited, especially five years ago when the bank had taken the decision to adopt and launch Internet banking, but that there had been huge improvements. This is due to competition in the telecommunications sector when government allowed Oman mobile and Nawras companies to enter the market and provide Internet services. Therefore, easy access to the Internet had improved, but still it needed to improve more:

... Internet availability in this country honestly speaking in Oman is quite limited. I mean we could see that there is an improvement for the last two years after allowed new company (Oman mobile and Nawras) to provide its services. I mean accessing to the Internet it starts becoming easy, but I cannot say it's very much easy but at least it's improving than five years ago when we launched the Internet banking ...

(B6EM)

The second difficulty related to the government was the lack of reliable statistical information. B2CM reported that the unavailability of reliable statistical information affected the adoption of Internet banking negatively. In this regard, if banks got the necessary information they could plan for Internet banking adoption which would lead them to provide the system early. However, when banks had taken the decision to adopt the Internet banking they suffered from a lack of accurate statistical information which resulted in delays in their decision to adopt Internet banking. Furthermore, lack of reliable statistical information affected banks' growth and development plans. Similarly, Al-Sabbagh and Molla (2003) found that lack of government support and lack of statistical information regarding the Internet and Internet banking users were fundamental reasons for
the late adoption of Internet banking in the Sultanate of Oman as B2CM explained:

... They needed to even adapt as well, statistical information. We want to know how many people had PCs and Internet connections in Oman. This is helping us to take a right decision. Unavailable of statistical information delay the adoption of Internet banking. You know Ministry of Economy, when they did the census, they even later on utilized that its important to understand how many people were using Internet, who are the users, whether an age group above or below. So this information we even had to accumulate and by that, we even later on do our strategy for adopt and improve our on-line banking services ...

(B2CM)

Additionally, all the interviewees made it clear that Oman government does place any pressure on the adoption of Internet banking, but some decisions had been made to regulate the adoption process of Internet banking. The CBO representative explained that the Omani government had developed a number of laws to regulate the commercial banks in the Sultanate of Oman. Accordingly, banks wishing to adopt Internet banking had to apply to the CBO for approval. In addition, B4IM and B7IM explained that the CBO approval (licence) was an extremely bureaucratic and lengthy process. Thus, these government laws and rules regarding Internet banking licence considered were a barrier to adoption of Internet banking, as B7IM explained:

... First there is a licence to be acquired from CBO, because once the bank chooses to run the channel, it needs a licence. So it needs a policy and all of this procedures take along time and need a lot of paper work ...
In summary, the third external barrier related to government contains three main difficulties: Internet availability, lack of statistical information and government regulations.

- **Technology Issues**

Technology has been spreading fast and its development and usage has become an essential element in all industries and services. Internet banking was an electronic banking function that depended heavily on development technology. The Omani bank managers praised the effectiveness of development technology in the banking industry in general and Internet banking in particular.

With regard to technology difficulties, B6EM pointed that the late adoption of Internet banking in Oman was due to the limited availability of technology a decade previously. The manager clarified that the bank had tried to adopt Internet banking since 1998 but unfortunately the available technology at that time had not helped the bank. By 2002 the bank had implemented an on-line system which provided users with information. Unfortunately, bank management and users were not satisfied with the new system. In 2005 the bank adopted a new system which enabled the bank to provide customers with a number of Internet banking services. In addition, technology had developed very fast and banks were in catch-up with the latest technology to meet the
industry competition. This result is consistent with the literature (e.g. Al-Hajri and Tatnall, 2008) who explained that the availability and speed of technological development was one of the obstacles hindering Omani banks in early adoption of Internet banking:

... From the technology part, of course in those days technology was so limited but technology now is so booming so you can adapt, you can modify, enhance your technology easily. I still remember the way we enrol our customers in 1998. By 2002 we have introduced another platform which also still not to the expectation because still if you want to enrol your customer, register your customer it takes you long process and again you know security and other stuff plus the system services was limited as its provide users with bank information. This is why we have decided on 2005 to introduce the new platform which is very much fixable and give lots of customer benefit and improve the customer experience...

(B6BM)

The second difficulty related to the technology was English technical jargon. Technology developments take place in developed countries that rely on English as a primary language. For this reason, all developed technologies output initially in English. However, B6BM clarified that the late adoption of Internet banking due to the system language. This is because in the early stages Internet banking was available in English only. Thus, there was no benefit in adopting the system if users could not understand it. Hence, the system must be available in Arabic in order to be used by Omanis as B6BM explained:

... The main problem was the customer knowledge and understanding about the services of the Internet as in the starting point the system were available in English and there was no benefit of offering a system contained difficulties of use ...

(B6BM)
Thus, technology was a major external difficulty that affected the adoption of Internet banking in the early stages. Technology difficulties included the availability and rapid evolution of technology plus technological jargon as the output of developed technologies was initially in English. It seems that English technical jargon may disappear with the new educational system that had adopted in Oman in early 2000, which relied on teaching English language from grade one in public and private schools.

- Trust Issues

The last external barrier was trust. The Omani bank managers stressed that trust was a major issue facing them in the early stages of Internet banking adoption. This finding is consistent with Kivijärvi et al. (2007) who illustrated that lack of trust was a significant barrier influencing customers’ acceptance of electronic services. Accordingly, B1MM and B2IM made it clear that if customers’ trust the bank they dealing with they will trust its bank services. This is consistent with previously-published research, e.g. Saparito (2004), which clarified that customers have to trust the bank they deal with. Thus, trusting the bank was the first step to trusting the Internet banking service:

... If the customer does not trust the ban full stop. He or she will not use their online facilities ...

(B1MM)
Tusting the bank as a service provider was considered the first step towards trusting Internet banking. B3EM made it clear that there are a number of customers who trust the bank, but unfortunately they suffer from technology anxiety. Thus, these customers avoided using Internet banking which relied mainly on ICT and Internet. Customers were concerned to use Internet banking because of privacy and security issues. They were afraid that Internet hackers could hack their Internet banking password and gain access to their accounts. This led to the second step towards trust in Internet banking, which is trust in the Internet. This finding is consistent with previously-published results, e.g. Palvia (2009) and Zhao et al. (2010), which explained that trust in Internet was a prerequisite to trust in Internet banking:

... There are people who still do not trust Internet based technology so they fear that someone might snatch their password and start transacting using their accounts ...  

(B3EM)

However, customers have to trust in the Internet to start banking on-line, as if they did not trust the Internet they would not trust Internet banking. In this context, a group of bank managers (B1EM; B2CM; B3EM; B4CM; B6BM; B7CM) confirmed that trust in Internet was one of the major difficulties in the adoption of Internet banking. Moreover, B2IM and B6EM reported that Omani customers were classified as good adopters of electronic banking functions and they did not have any problems dealing with technology except the Internet in term of financial transactions. To clarify this issue B2CM explained that some of the Internet banking customers would phone the bank after they had completed
their transaction on-line to ensure that the transaction had been implemented successfully. In this context, customers were utilizing two electronic banking channels:

... You can imagine now the Internet banking customers would deduct the amount and then call in to the phone bank so they are utilizing two e-channels. So there was a problem in terms of that segment of the people, so there was a trust issue ...

(B2CM)

Additionally, to trust in Internet banking customers' have to trust the bank they deal with and the Internet as a channel. Trust in the bank and the Internet leads customers to trust in Internet banking which was achieved by providing customers' with high level of security and privacy. This finding is consistent with those of Khalfan et al. (2006) who explained that lack of security and confidentiality was considered a significant barrier that affected Omani bank customers in accepting Internet banking. To achieve a high level of security and privacy, (B1MM; B2IM; B3EM; B6EM; B7IM) pointed that the Omani banks had implemented the latest security techniques with alerts and monitoring control to provide customers with a secure system that provided them with accurate, complete and relevant information. For example, one of the respondents explained:

... People really resist using Internet banking because of security. They believe that it's not very much secure. Therefore, we implement a real security which customer can trust by introducing latest security techniques, alerts and monitoring control ...

(B6EM)
Furthermore, B1MM and B7IM explained that because of security issues banks had not implemented all functions of Internet banking. For example, an Internet banking application form was not available on the website so customers had to visit their bank branch to become active users. Moreover, customers had to visit their bank branch to collect their Internet banking user name and password as they were not delivered by post mail or e-mail. This is because, the bank wants customers to feel more secure by collecting their user name and password themselves to reduce the risk that these might go to the wrong people:

... For security issues customers have to apply for Internet username and password in our bank branch and in case of losing or forgetting them they have to apply for new username and password in the bank. Also, we do have as other banks, two passwords login password and a transaction password. These passwords have to be alphanumerical minimum of eight as alphanumeric will take more time to be hacked than numerical or alphabetical ...

(B1EM)

It can be concluded that trust is a critical external barrier that has affected Omani banks in the early stages of Internet banking adoption. The Omani bank managers clarified that trust was comprised of three categories: trust in the bank, trust in the Internet and trust in Internet banking security.

5.6 Summary

This chapter has explored the adoption of electronic and Internet banking in the Sultanate of Oman in two stages. The first stage explored the current state of electronic and Internet banking through documentation and an overview of bank
Chapter Five: Adoption of Internet banking in the Sultanate of Oman banking industry

websites. The results showed that Omani banks were good adopters of electronic banking even if they were considering traditional banking. In addition, Omani banks provided their on-line customers with several Internet banking services (see Table 5.1) The Omani banks had a clear understanding of electronic and Internet banking terms.

The second stage identified the main barriers that faced the Omani banks in the early stages of Internet banking adoption. The Omani banks were faced by a number of barriers in the early stages of adoption of Internet banking. These barriers were divided into two main categories (internal and external barriers). Table 5.4 summarizes the barriers to Internet banking adoption. The next chapter is designed to investigate the main constructs that affect bank customers’ acceptance of Internet banking from the perspective of Omani bank managers.

| Table 5.3 Barriers of Internet banking adoption in Oman banking industry |
|---------------------------------------------------------------|--------------------------------|
| **Main Categories**                                           | **Barriers Issues**                    | **Related Difficulties** |
| Internal Barriers                                             | Bank Management                      | Timely Decisions to Address Industry Competition |
|                                                              |                                         | Staff Awareness |
|                                                              |                                         | Customer Feedback |
| External Barriers                                             | Customers Behaviour                  | Customers Acceptance of Internet Banking |
|                                                              |                                         | Computer and Internet Knowledge |
|                                                              |                                         | Customers Awareness |
| Culture                                                      |                                         | Human Interaction |
|                                                              |                                         | Customers Attitudes Towards Changes |
| Government                                                   |                                         | Internet Availability |
|                                                              |                                         | Lack of Statistical Information |
|                                                              |                                         | Government Regulations |
| Technology                                                   |                                         | Rapid Evolution of Technology |
|                                                              |                                         | Technology Language |
| Trust                                                        |                                         | Trust in the Bank |
|                                                              |                                         | Trust in the Internet |
|                                                              |                                         | Trust in Internet Banking Security |
CHAPTER SIX: THE MAIN CONSTRUCTS AFFECTING BANK CUSTOMERS BEHAVIOURAL INTENTIONS TO ACCEPT AND USE INTERNET BANKING FROM THE BANK MANAGERS' PERSPECTIVE

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Chapter Six: The Main Constructs Affecting Bank Customers Behavioural Intentions to Accept and Use Internet Banking from the Bank Managers' perspective.

6.1 Introduction

This chapter investigates the key factors that affect customers' acceptance of Internet banking from the perception of Omani bank managers. This stage moves the conceptual framework from a generic to more specific model. In addition, the chapter explores the mechanisms that are followed by banks to make a positive impact of the key factors on customers' acceptance and use of Internet banking. The chapter begins by exploring the users of Internet banking in the Omani banking industry, according to their gender, age, educational level and voluntariness of use. Section 6.3 investigates the impact of performance expectancy on bank customers' behavioural intentions towards the acceptance and use of Internet banking. Section 6.4 discusses the influence of effort expectancy on bank customers' acceptance and use of Internet banking. Section 6.5 explores the importance of facilitating conditions towards the acceptance and use of Internet banking. Cultural influences are investigated in section 6.6. Section 6.7 illustrates the influence of bank customers' attitudes towards computer on the acceptance and use of Internet banking. The influence of trust with regard to the acceptance and use of Internet banking is outlined in section 6.8. Section 6.9 presents the initial model of the acceptance and use of Internet banking in the Sultanate of Oman banking industry. Section 6.10 summarises the entire chapter.
6.2 Users of Internet Banking in Oman Bank Industry

The conceptual framework that was developed previously in chapter 3 shows four moderators (age, gender, educational level and voluntariness of use) that influence the relationship between the independent constructs and bank customers' behavioural intentions towards the acceptance and use of Internet banking. Thus, this section discusses the different moderators that influence the acceptance and use of Internet banking from the bank managers' perspective. However, the Omani commercial banks could not provide the researcher with any statistical information regarding users of Internet banking in Oman (because they did not have any).

6.2.1 Users Gender

With regards to the gender of users, eleven interviewees in the investigated banks explained that females are less likely to accept and use Internet banking, compared with males. This finding is supported by Durndell and Haag (2002) who indicated that females were often found to be less experienced and interested in technology than males. Moreover, B2CM reported that the majority of bank customers were males and therefore they represented the largest proportion of Internet banking users. This is related to the Omani culture in which males feel more comfortable than females walking into a bank and
opening an account, whereas females in Omani culture would be more likely to use her family bank account. This is evidenced below:

... Now when we're speaking about Internet banking, some ladies don't even have an account to use the Internet banking. Males are more willing to use Internet banking than females. The ratio of how many people have accounts with us? males have more accounts. Because males are more comfortable even walking in to the branch and opening a bank account ...

(B2CM)

Furthermore, (B1EM; B1MM; B2IM) noted that they cannot specified who are more likely to use the Internet banking services – males or females. This is because their banks did not have any statistical information regarding the gender of Internet banking users'. For example, B2IM conformed this by stating that:

... Seriously, we have not been in the analysis in terms of the gender so I can't tell you in terms of whether it is male or female, because we have not done that, by gender analysis ...

(B2IM)

6.2.2 Users Age

With regard to age, the Omani bank managers (B1EM; B2IM; B3EM; B5CM; B6EM; B7CM; B7IM) believed that younger customers' are more likely to accept and use Internet banking compared to older customers. This finding supports previous research in this area which links user age to technology acceptance and usage (e.g. Morris and Venkatesh, 2000; Venkatesh et al., 2003). However, the actual ages of 'younger' customers were a discussion point among bank managers. B2CM and B3BM clarified that 'younger' was less than 45 years old.
In contrast, B3EM and B71M explained that ‘younger’ customers would be 30 – 40 years old and that they are more willing to accept and use Internet banking. Moreover, B5MM noted that new university graduates (25 years old) are more willing to accept and use Internet banking, especially those who have studied abroad. This is because they have used it previously and they are aware of the service efficiency, as demonstrated in the following quote:

... They are university graduates aged 25 years and they have studied abroad and they used to have these facilities before, that's why they are asking about it ...

(B5MM)

Some managers (B1MM; B41M) explained that it is difficult to determine the age group of Internet banking users. This is because, Internet banking was considered as being more appropriate for younger customers, although there were also some retired customers who used the system and preferred it than visiting the bank branch. Nevertheless, they confirmed that generally younger customers were more willing to bank online compared to older customers:

... More appropriately young people will use it, but then I know retired individuals who preferred using online banking than going to the bank. Considering that a lot of the retired people are educated as well, so it's becoming more and harder to generalize. But I would say generally the younger people will be more prone than the older people ...

(B1MM)

In addition, B2CM and B7CM added that the new generation were experts in using new technology because they started learning how to use computers and other technological devices in school at an early age, whereas older generations had missed the opportunity to learn how to deal with technology:
... New generation are more likely to adopt and use the Internet banking as they got the opportunity to learn how to use advance technology, such as computer in schools, compared to our generation who got this chance only at colleges or universities ...

(B7CM)

To that end, younger bank customers were seen to be more willing to accept and use Internet banking compared to older bank customers. In addition, customers aged between 25-45 years were classified as active Internet banking users, especially for those who studied abroad and were aware of the importance of Internet banking.

6.2.3 Users Educational level

Users’ educational level had a positive impact on Internet banking acceptance. The Omani bank Managers agreed that more educated customers' were more willing to accept and use Internet banking, compared to less-educated customers. In this regard, Nambisan and Wang (2000) and Kang and Yoon (2008) explained that there are positive relationships between users’ educational level and technology usage. They clarified that less-educated individuals are less likely to accept new technology. Moreover, B7IM and B2IM believed that there was a relationship between the educational level and acceptance of Internet banking, because the technology is constantly evolving and educational developments are based on technological developments:

... Education level has a direct impact towards the acceptance of on-line services. Even though, the correlation has to be between education and technology, as the developments education depend mainly on the technology development ...

(B2IM)
6.2.4 Voluntariness of Use

The Omani bank managers made it clear that customer convenience and satisfaction were the main objectives they seek to achieve. Thus, banks cannot force their customers to accept and use the Internet banking as if they did their customers would shift their accounts to another bank. Internet banking was a new electronic banking function and there were a number of banks who still had not adopted it. Therefore, using Internet banking in the Oman banking industry is voluntary. This supports previous research (e.g. Venkatesh et al., 2003) who found that the use of new technology in any community is voluntary. One of the managers commented:

... I cannot impose my customers to use Internet banking by turning around and say, "If you come to the bank, I'll charge you for branch services ..."

(B1MM)

The Omani banks had implemented different plans to motivate customers to accept and use the Internet banking. In this context, B3EM and B6EM clarified that their banks had adopted different strategies to motivate customers to use Internet banking. For instance, banks introduced their customers to a range of Internet banking services for free (without charge) and for other services, such as bank remittances and cheque book requests they offered a special discount of up to 60%:
Chapter Six: The Main Constructs Affecting Bank Customers Behavioural Intentions to Accept and Use Internet Banking from the Bank Managers’ perspective.

... In order to motivate customers to bank on-line almost all of Internet banking services free of charge and some services are chargeable. However, according the chargeable services we gave the on-line customers a special discount ...

(B3EM)

Moreover, B2CM noted that in order to shift customers from the traditional to the electronic banking system including the Internet banking, the bank had begun to impose some charges for services provided through the branches. For example, if a customer entered the bank branch asking for a bank statement they would be charged. Whereas, if a customer ordered a bank statement through one of the electronic banking functions, such as Internet banking or ATMs, it was free. Thus, various methods of motivating customers to accept and use electronic banking in general, and Internet banking in particular, had been trialled:

... We have a strategy to enhance the use of e-channels by charging those customers who entered their branch and asked for their bank account balance and account history ...

(B2CM)

To that end, it can be concluded that the acceptance and use of Internet banking in the Omani banking industry is voluntary, although banks had tried various ways of encouraging customers to accept and use Internet banking.

6.3 Performance Expectancy

With regard to performance expectancy construct interviewees were asked if it was considered as one of the key constructs that influenced bank customers’ behavioural intentions towards the acceptance and use of Internet banking.
From the managers' perspectives performance expectancy was considered as one of constructs that impacted customers' acceptance of Internet banking. This is due to the usefulness of the system; if bank customers' believed that Internet banking was useful they would accept and use it. This is consistent with Venkatesh et al. (2003) who explained that performance expectancy is one of the constructs that affected the users' intention towards accepting new technologies.

Furthermore, the bank managers noted that any new service needed some time to be accepted by customers, as customers need to understand the usefulness and relative advantages of the new service. This finding is consistent with previously-published results (Venkatesh et al., 2003; Pikkarainen et al., 2004; Hennington and Janz, 2007; Yeow et al., 2008; Yousafzai and Yani-de-Soriano, 2012) which clarified that new technology is not immediately accepted until its benefits and usefulness have been recognised:

... The intention will be high when customers start using it and they find it useful. However this may require from customers some time in order to assure the usefulness and relative advantages of the Internet banking ...

(B7IM)

Moreover, (B5CM; B2CM; B6EM) explained that customers' acceptance of Internet banking can be measured by their acceptance of other electronic banking functions, such as the ATM. In the early 1990s, when Omani banks introduced ATMs for the first time, customers' hesitated to accept and use the ATM in the absence of bank staff. They expected bank staff to be available at
all times so they could resolve any problems. Therefore, customers need time to realize the system usefulness in order to accept and use it successfully. For example, one of the managers confirmed this:

... If customers feel that the system is useful they will use it. You see what happened; ATM is a very good example. People are frightened to go to the ATMs when we first introduced ATM in 1990. They were afraid whether the machine will give them money or not and the questions asked by local Omanis were: Are you there if the machine is giving me less money than what it is? You are not going to be there. This was the fear they had but after the bank explains to customers the machine benefits they used it. Today our machines run out of cash within a matter of hours. You can imagine the number of transactions taking place. So, this is what is going to happen in Internet banking as well. Customers will understand the useful of the system and after that they'll start use ...

(B5CM)

In addition, B3EM pointed out that if the bank had realised the usefulness of Internet banking early, it would have not delayed the adoption of the system. Thus, performance expectancy in one of the main constructs that impacts on the acceptance and use of Internet banking, as evidenced:

... I will say if the bank realized the advantages and usefulness of Internet banking early we would not have delayed the adoption of it ...

(B3EM)

The findings of this research showed that Omani commercial banks which offered Internet banking were seeking to develop a useful Internet banking system in order to encourage customers to accept and use Internet banking (B1EM; B2CM; B3EM; B6EM; B7IM). This was accomplished by focusing on three key points (content, accuracy and timeliness) which will be discussed in the following sub-sections.
A. Internet Banking Content

With regard to Internet banking content, B2IM and B6EM noted that their organizations had to provide Internet banking users with sufficient information and services. This was achieved through a historical analysis of customer needs so banks could determine the most important information and services in order to provide through Internet banking:

... Basically, when we designed the Internet banking content, we looked at, what are the things that customer needs most? Why does customer keeps visiting the bank branch? What are their needs? I am talking in terms of historical. So, what that person need on the Internet banking? We do that kind of analysis in terms of provide online users with different information and services ...

(B2IM)

Moreover, B4CM explained that banks should motivate their customers to accept and use Internet banking by explaining the usefulness of the system. This would be achieved by providing customers’ with the right information and services. Nevertheless, if banks did not take customers’ feedback into account, this affected negatively customer acceptance of Internet banking. In addition, banks which anticipated adopting and launching Internet banking should start at the point reached by other banks. This finding is consistent with previously-published results, e.g. Pikkarainen et al. (2004) who explained that by recognizing the usefulness of new technology users will be more willing to accept it:
... To be really honest a lot of decisions that has been taken recently had affected the Internet banking badly. This is because a number of on-line services have been stopped, therefore a lot of customers are hesitant to apply for Internet banking services ...

(B4CM)

B. Accuracy

Managers in the investigated banks explained that Internet banking information had to be accurate. In this regard, banks had to make sure that all transactions made through the Internet were made through the core bank system, in order to keep the core banking system and the Internet banking system consistent. In addition, banks had to test the Internet banking system on an ongoing basis to make sure that the system was accurate. It was actually tested first by the system developers, followed by the bank's information technology department and finally by business users:

... Internet banking is very accurate as well. All the information is pulled from our core banking system so the information is actually real and accurate. And in addition to that, the system went into so many rigorous tests just to make sure that everything is ok. It was actually tested by our test inventor, tested by our IT department, and tested by us, the business users ...

(B3EM)

C. Timeliness

With regard to timeliness, interviewees made it clear that users of Internet banking had to be able to access the required information quickly. Therefore, (B1EM; B2CM; B6BM) clarified that Internet banking was designed to be user-friendly and easy to understand and utilize. Moreover, managers explained that
their banks had taken a decision when they designed the Internet banking system that it should be Straight Through Processing (STP). This is because; customers’ need to feel that the Internet banking channel saved their time compared to visiting bank branches:

... See the Internet banking system was designed to be user-friendly and to be even very quick to understand and very quick to utilize. It's supposed to be easier than coming in to the branch and standing in a queue. The queue takes you fifteen minutes. It’s designed to be less than that ...

(B2CM)

6.4 Effort Expectancy

The Omani bank Managers confirmed that effort expectancy played a fundamental role in Internet banking acceptance because normally customers were attracted to the ease of use of the system. Therefore, if customers felt that Internet banking was easy to use and understandable they would be willing to accept and use it. These results are consistent with those of Plouffe et al. (2001) and Venkatesh et al. (2003) who clarified that ease of use is one of the main constructs that affected users’ acceptance of new technology. Other researchers, such as Kolodinsky et al. (2004), noted that the simplicity of Internet banking attracts bank customers' intention towards using it. One of the respondents confirmed this saying:

... If the system is easy to use, customers will use it and they will use it more and more often. While, if the system is difficult then it's more convenient for customers to come over ...

(B1MM)
Moreover, eight managers clarified that bank customers in Oman came from different regions and backgrounds, therefore to attract their intention to Internet banking it had to be easy and cover their requirement. In this context, customers' avoided difficult and complicated systems as they preferred easy to use systems. There are similarities between these results and those described by Khalfan et al. (2006) and Yousafzai and Yani-de-Soriano (2012) who explained that effort expectancy has a major influence on the acceptance and use of new systems, particularly at early stages of adoption:

... Before you start a business keep your feet in the customer's shoe. That's it. Think as a customer and not how you will like it or how you will do it. For most of the people let's say 80% of the people want to go with the easy. They want it to be safe, secure and easy ...

(B1EM)

In addition, B6EM agreed that Internet banking had to be user-friendly. Therefore, banks had to enhance their systems constantly. This is related to technological development and, in particular, to security issues which were very important factors in relation to the acceptance of Internet banking. However, sometimes security procedures impact on a system's ease of use. For example, to accessing Internet banking a username and password are needed. Some banks enhanced their systems' security by providing their online users with two passwords – one for singing-in and one for account transactions. These security procedures may affect the ease of use of the system. Therefore, banks should search for a solution to achieve a balance between security, ease of use and other benefits:
... Enhancing the system if we feel that security is coming with the new standards which we feel it’s going to really affect the easiness of the friendliness of this system we have to find some other alternative. We need to enhance that security to that standard as well as to not affect the customer service. I’ll give you a small example, if you feel that the security one day comes and you need to introduce three or four steps of login or accessing to the net we might say yes but we have to make it a very simple steps to not affect users. You have to introduce five more steps and these steps are very complicated the next day we are losing our customers ...

(B6EM)

The findings of this research revealed that Omani banks took different measures to provide their customers with an easy to use Internet banking system which can be classified into three areas (website design, language and number of web pages).

A. Website Design

The Omani bank managers believed that bank websites in general and Internet banking web pages in particular had to be simple and easy to utilize, read and understand. Therefore, the managers (B1EM; B2IM; B2CM; B3EM; B4CM; B6BM; B6EM; B7CM) explained that banks had focused on website design, in order to provide customers with an uncomplicated system to grab their attention.

Furthermore, B3EM illustrated that a menu of online banking functions had to be presented using attractive clear icons, so users did not need to waste their time searching for the service they needed. Moreover, B2IM added that to
improve usability, the functions menu had to appear on the web pages permanently, even when moving from one screen to another within the Internet banking website:

... *It is absolutely correct statement that the system has to be easy to use that is why we are trying as much as possible to keep the website simple as much as possible. So we have the left hand side the menu in which the main functions are given and they're pretty clear in terms of a person may not have to think twice to be able to understand what has been there. Furthermore, icons are bright. They're colourful and they catch the eye. So you have all the items which are centred and the name along with the icon, we also have them named of the particular function. So to that extent we are trying to make the information as simple as possible ...*

**B. Language Availability**

To keep Internet banking easy, two Omani banks (B3 and B6) had introduced their Internet banking webpages in two languages – Arabic and English. This is because they did not want to force someone who’s English was very weak to start using the Internet banking in English. Providing users with two languages (Arabic and English) was considered as an important step in making the system easy to use and attracting more customers to accept and use Internet banking:

... *We can't expect someone who's English is very, very weak or hardly even read anything in English to start banking in English. That's why we stressed the importance in having it in Arabic ...*

**B3EM**

On the other hand, some Omani banks (B2 and B7) were very interested in making Internet banking system simple and easy to use, but unfortunately they had provided their Internet banking services only in English. From B2IM's point
of view, language is not an impediment in keeping the system uncomplicated. This is because accepters of Internet banking are generally younger customers who had a good education and a low resistance of technology. Therefore, they could deal easily with the system, even though the Internet banking was designed to use simple English language. Nevertheless, M2IM explained that the availability of Arabic and English language had advantages and attracted more customers but providing the system in English only was not an impediment:

... I absolutely agree with you, that it would've been excellent if we had a translation of the Internet banking on the Arabic. We don't have that at the moment. At the same time, this is not an impediment, too. It would have been excellent, yeah and maybe we will have more customers. So related to Internet banking, you will not have this kind of a problem because adapters are always a younger crowd who got a high quality of education who have the basic of the English language ...

(B2IM)

C. Number of Web Pages

With regard to the number of web pages, B4IM and B6EM made it clear that to make the system more easily banks had recognized that reducing the number of web pages on the Internet banking website was one of the procedures that enhanced the website's ease of use. Due to this customers can complete their accounts transactions online through one or two pages. One of the managers suggested that:
... More informative, all the information users need is available thru the page. For example if users want their bank statement inquiry, they can get it in one round. We formulate all the accounts for customers at one round. We try that when customers click the information they need in one window so they can get all the time one or two windows maximum ...

(B4IM)

6.5 Facilitating Conditions

The Omani bank managers reported that availability of facilitating conditions influenced positively on customers' behavioural intentions towards the acceptance and use of Internet banking, especially in the initial stages of acceptance. This is because customers feel more confident using Internet banking when there are a number of support facilities to help them when they need assistance. These results echo those of Liu et al. (2005) who emphasised that facilitating conditions influenced users' behavioural intentions to accept and use of new technology. However, this contradicts with Venkatesh et al. (2003) and Hennington and Janz (2007) who explained that facilitating conditions do not influence behavioural intentions with the presence of performance expectancy and effort expectancy constructs and it influence the user behaviour directly, B2IM explained:

... Customers are looking for facilitating conditions when they getting into the system for the first time. Once a person has adjusted and he used it two, three, four times, typically he doesn't ask for it ...

(B2IM)
However, perceptions of the importance of facilitating conditions were different between bank managers. The reason for this due to the nature of bank customers’, as some customers need help in the early stages of using the system, while other ask for assistance when the system is developed to add new services. In addition, some customers feel confident when they are sure that the bank will provide them with assistance at any time around the clock. Some managers (B4CM; B5CM; B7IM) believed that the importance of facilitating conditions was not limited to the early stages of the acceptance process. The importance of this construct is ongoing even after customers have accepted Internet banking successfully. This is because users might face technical difficulties which require technical assistance:

\[
... \text{Usually users are need the facilitating conditions until they get familiar with the system and after that also if they faced any problem by using one of the Internet functions ... (B5CM)}
\]

The Omani banks offered their customers a range of facilities to influence their intentions to accept and use Internet banking. Firstly, some banks (B1; B2; B3; B6) focused on training their employees on Internet banking, which enabled them to market the service more effectively and answer customer queries directly. In this context, B6BM and B6EM made it clear that their bank had developed a plan to train bank staff specifically for Internet banking. Furthermore, the bank had motivated their employees to be active users by offering them all online services for free.
... Last year we came up with the initiative to train all our staff and encourage them to use the Internet banking, therefore we have introduced a zero charges for all the transactions done by the staff. This enables them to help and train bank customers easily ... (B6EM)

Secondly, all banks supported their Internet banking users through a call centre working around the clock, which enabled customers to call if they faced difficulties whilst banking on-line. Moreover, B2IM pointed that the bank offered their on-line customers a specialized help desk to answer user queries immediately, as all staff were fully trained. However, this specialized help desk was available only during normal branch opening hours, although there was a plan to shift it to the call centre department in future:

... At the moment, we have the specialized help desk to help bank customers to be able to use the Internet banking system if there are any difficulties or problems. This specialized help desk working during the bank office hours and some time in the future by this year or the next year will be transferred to the bank call centre ... (B2IM)

Thirdly, some banks, such as B6 and B7 developed an Internet banking section in their branches by installing a number of computers in each branch where customers could access their Internet banking accounts. These banks found that developing an Internet banking section in each branch was one of the facilitating conditions that influenced customers since it made them feel more confidants when they used the system at the branch with the support of bank staff:

... In order to train customers on how to deal and use the system, we allocated an Internet banking section in each branch ... (B6CM)
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Fourthly, four banks (B1; B2; B3; B6) offered their online users a secure e-mail alongside the other Internet banking services. Through this service, users' could send any queries regarding problems encountered when using Internet banking. Banks normally replied the next working day which could be considered a limitation in facilitating conditions. However, banks planned to improve this service by replying the same day when possible depending on the nature of the problem:

... One of our facilitating conditions providing on-line customers with a special email ID that is popularly called as bankmuscatonline.net. Through this mailbox users can communicate with us if they have any difficulty by using the system. Bank will reply by the next day ...

(B2IM)

Fifthly, all banks provided their customers with a booklet explaining how to use Internet banking step-by-step. Customers needed to read the booklet before banking online. The booklets were available in two different languages Arabic and English. B4IM manager explained that there was no benefit for using these booklets as Omani customers preferred to hear how to use the Internet banking either by visiting the bank branch or by calling the bank call centre rather than reading the manual and following the instructions:

... Perhaps our culture in Oman, people prefer to talk to people they don't want to read. People here don't want to read, they still prefer to talk to someone of the bank stiffs in order to advice him how to use the system ...

(B4IM)
Sixthly, B2 and B6 banks linked their Internet banking system with other electronic banking functions, such as ATM, telephone and mobile banks. The availability of this facilitating condition helped Internet banking users to accomplish their account transactions through other electronic banking functions in case of technical problems. In addition, if there was an urgent need to complete the transaction when there were technical problems with the system, customers could complete their account transactions through the telephone banking or by mobile banking. Furthermore, B6EM pointed that the bank linked Internet banking and the ATM, in case of losing the username and password of Internet banking. Customers could access their accounts and reset their passwords by using the PIN code for their ATM card:

... If the customer forgets his/her passwords still it is easy to reset his password because we have link to his ATM card and it is very secured as well as the pin on that card is much secured so we don’t want really to create a very difficult environment and we need to provide our customers with good facilities ...

(B6EM)

B2CM explained that the link between Internet banking and other electronic functions was a facilitating condition. Nevertheless, the manager was worried that customers may perceive that other electronic functions (e.g. telephones and mobile banking) were easier to use than Internet banking, which caused them to ignore Internet banking and solely depend on the other electronic banking functions:
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... If the Internet banking users cannot find something they looking for within four minutes or they have some technical problems, they will not use it again. They will rather look down and see where can they call automatically? This is in an experience point of view. Straight away they will use the other function. So now you've utilized another channel for the customers which they may feel that it is easier than the Internet banking ...

(B2CM)

Finally, three banks (B2; B6; B7) had adopted a unique facilitating condition when they designed their website by providing online customers with a demonstration explaining step-by-step how customers could use the system. Moreover, in the case of some system difficulties customers could get assistance using the demonstration:

... One of measures the bank took to keep the system ease of use is providing users with online demo. So if a person is having a problem and may not be able to understand, there's a demo that goes step by step. Its functionality, a person is actually guided to. There's some kind of a hand-holding shake ...

(B2IM)

6.6 Culture

According to the literature review culture is one of several factors that affect customers' acceptance of new technology (Slowikowski and Jarratt, 1997; Png et al., 2001). Therefore, the Omani bank managers were asked about the impact of Omani culture on customers' acceptance and usage of Internet banking. They confirmed that culture is an important constructs with direct impacts on customer behavioural intentions towards the acceptance and use of Internet banking in Oman:
... Omani culture affected the customer intentions towards the use of Internet banking, as culture is education, awareness, advertisement about technologies, sharing the resource and skills...

(B4IM)

Moreover, the managers explained that Omanis' were committed to their customs and traditions. Therefore, human interactions and word of mouth were considered important issues that affected the acceptance of Internet banking. Furthermore, B1MM explained that culture is a very important factor, as the Omani banks have to take into their accounts that the Omani culture differs from one region of Oman to another and impacts on the acceptance of electronic and Internet banking. In the interior regions people still preferred to visit their bank branches rather than completing their account enquiries and transactions through electronic banking channels. There were similarities between these findings and those described by Levy (2007) who indicated that culture is an important factor that impacts individual intentions towards the use of new technologies. It is important to recognise that the successful adoption of a new technology (e.g. Internet banking) in one society does not necessarily mean it will succeed in another:

... I wouldn't say Omani culture affects the customer intention, I would say that regional culture affects the customers' intentions towards the acceptance of Internet banking. We found that regain customers less interested to adopt electronic banking functions compared with Muscat customers. For example, there are some regional branches where the transactions in the branch are higher than the ATM transactions ...

(B1MM)
Moreover, B4CM and B5CM explained that Omanis in general are very hospitable people – they like to meet with different people and interact with them and therefore still they prefer the traditional banking compared to electronic banking channels, especially if they are premium bank customers. Furthermore, some bank customers liked to visit their bank branch and meet with the branch manager in order to feel appreciated by their banks. There are similarities between these findings and those described by Khalfan et al. (2006) and Fair Investment (2006) who indicated that bank customers’ prefer to use traditional banking rather than electronic banking functions, as they were more interested in dealing with people than dealing with machines. Other managers also agreed with this, but they identified the customers’ who liked to visit their bank branch and meet with branch managers were older customers who were resident in the interior regions of Oman:

... Omanis are very hospitable people, we like to be welcomed, we like to talk face-to-face, and we like to interact. You know, some old generation, it could be very difficult to tell them to start using the Internet banking. They likes coming in to the branch and meeting with the branch manager. They likes being felt as the branch manager welcome them as well ...

(B2CM)

Additionally, some bank managers (B2CM; B4CM; B6BM; B71M) noted that there were differences between Omani and foreign customers with regard to the acceptance and use of Internet banking. Foreign customers asked about Internet banking services before they opened their bank account demonstrating more interest in Internet banking, as they were accustomed to it in their own
countries. Moreover, they were classified as faster adopters of electronic banking functions compared to Omani customers. This finding is consistent with those of Littler and Melanthiou (2006) who explained that in developed countries the use of online banking had risen dramatically in the previous decade as bank customers' had tried to obtain full advantage of Internet banking:

... I found that foreigners asking more about the Internet banking than Omanis, this is because of the availability of the service in their countries and because it is more advanced. Majority of foreigners asked from the first minute if the Internet banking services available or not ...

(B6BM)

Hofstede (1980, 1991) identified four cultural dimensions (power distance, individualism, uncertainty avoidance and masculinity). The perceptions of the bank managers about each of these dimensions are explained in the following sub-sections.

A. Power Distance

All the interviewees reported that Oman culture can be considered as a high power distance culture. This is because lifestyle in Oman depends on living in groups which depend on a group leader. For example, at the family level, parents are the leaders, while in the workplace managers are the leaders and amongst friends the oldest one is the group leader. Furthermore, bank managers made it clear that they do not accept any member of their staff to disagree with Internet banking. Moreover, B2IM pointed that at a family level, if
one of the senior family members tried Internet banking and gained some
benefit from it, this member would influence the rest of the family to use the
Internet banking. This finding supports the idea of Nelson and Quick (2003) and
Martinsons et al. (2009) who indicated that power distance is one of the culture
dimensions that affects members of community For example, power distance in
a family transfer from parents and other elders to children. One of the managers
interviewed explained that:

... If there is one person in the family member who had the authority
starts using the system, ok? His influence on the family is large; he
will go and tell his family members that I am using it, why don't you
also use it. Therefore the other persons also will possibly use it ...

(B2IM)

From the research findings it could be concluded that Omani culture can be
classified as a high power distance culture. This finding is consistent with
previously-published results Hofstede (2009) who explained that Arab societies
suffer from high power distance.

B. Individualism

With regard to individualism, the Omani bank managers noted that Omanis live
in harmonious groups. Relationships between Omanis' are strong, as they
discuss decisions amongst them before taking them. Hofstede (2009) described
Arab societies as collectivist, as B4CM explained that:

... We always on a day-to-day basis discuss these kind of topics
with our family and they have an impact on us whether to do it or
not ...
B2CM manager added:

... I would definitely ask someone else before I took the decision, the reason being for word of mouth is very important and persons experiences are better, you know a person who has tried it is better than a person has no clue about it ...

In addition, B71M made it clear that Oman cannot be classified as an individualist culture, like Western countries, where individuals take decisions by themselves. However, (B3BM, B41M and B7CM) explained that Omani society can be considered as a community of people living with each other, but in terms of decisions such as the use of Internet banking, these would be considered as personal decisions:

... Most customers who came here are coming and inquiring about Internet banking for the first time probably they have read about it or heard it from a friend but I think most of the customers when they come and apply for it they come with their own decision ...

(B3BM)

C. Uncertainty Avoidance

With regard to uncertainty avoidance all the interviewed managers without exception agreed that uncertainty avoidance is a cultural dimension that affects customers’ behavioural intentions towards the acceptance and use of Internet banking. This is because customers’ who have high uncertainty avoidance are less willing to accept Internet banking. However, in the opinion of bank managers the level of uncertainty avoidance is disparate. Some managers’ believed that Omanis in general were had high uncertainty avoidance, as they
do not really rush to accept and use new technology until they feel that it is stable and secure:

... It happened many times where people don’t really rush to a technology and are not confident, until they see that it is stable ...

(B6EM)

Moreover, B1EM and B1MM agreed that Omanis are generally considered as having high uncertainty avoidance, but this cannot be applied to all regions of the country. This is because Omanis residing in Muscat have a high level of development and urbanization compared to Omanis residing in the interior regions. Therefore, the level of uncertainty avoidance is low in the capital, and higher in the interior regions:

... We’re a fad mentality. We will take the latest mobile and we will take the latest of everything, especially people who stay in cities such as Muscat and Salalah ...

(B1MM)

Furthermore, B3BM explained that Omanis are fast adopters of new technology when it is available, but they are conservative in terms of their initial use of all the functions. That means that if a new technology had ten different functions, initially Omanis would use only one or two functions and as time goes on they would use more functions:

... I think they will use it but at the first stage they will be a bit conservative in terms of using it. For example, if a new technology comes with ten options probably they will use one or two when they’ve become confident with it, they will go for the third one, fourth one, and so on. But I don’t think they will not or they will wait sometime to use it ...

(B3BM)
Omani culture can be classified as medium uncertainty avoidance since they are willing to adopt and use new technology but they are conservative in terms of initial using all the options. In contrast, Hofstede (2009) explained that Arab societies suffer from high uncertainty avoidance.

D. Masculinity

All managers that were interviewed agreed that there was no objection to Omani women using the Internet to bank online. In this context, some managers (B1EM; B2CM; B7IM; B7CM) explained that in the early stages of the Internet families were resistant to their children using the Internet. However, B3EM and B6EM explained that the Omani government has played a significant role by providing technology to all service sectors with a special emphasis on the education sector. Accordingly, computers and Internet were essential in the education sector, as the use of these technologies helped students, whether male or female, to complete the processes of scientific research successfully. Therefore, the use of computers and the Internet were fundamental to education, which led Omani families to accept these new technologies and to allow their children to use it at home. This enabled Omani females to adopt the Internet and start using Internet banking:
... When we talk about the females we talk about the parent who is looking after the caretaker of the family so this kind of resistance was there. Yes there was a resistance why the females should have this, but this resistance started getting reduced. When our government has emphasized everybody in this country should have the right to get better education. So, it became mandatory to use this facility (computers and the Internet) in academic field so that it has changed the mindset of those people who were resisting ...

(B6EM)

In addition, some of the interviewees (B1MM; B2IM; B3BM; B4CM; B6BM; B7CM) explained that Omani culture allowed females to use the Internet in order to bank online. Therefore, Omani culture as one of the Arab culture can be classified as a mixture of masculinity and femininity. In Omani society, men and women have the same rights. This finding is in contrast to Hofstede (2009) who noted that Arab societies were considered as Masculinity culture.

The question that arises in this connection is do females want to accept using Internet banking. It have been mentioned earlier in this chapter (section 6.2.2) that interviewees thought that females were less willing to use Internet banking compared with males who were more willing to bank online. Therefore, although the culture did not object to women using Internet banking, nevertheless, women's reluctance to accept Internet banking due to a fear of new technology or the unwillingness of Omani women (especially those who staying in the interior regions) to deal with banks which led them to use their families' bank accounts.
6.7 Customers Attitude towards Computer

The bank Managers were asked their opinions regarding bank customers’ attitudes towards computers and its influence on their behavioural intentions towards the acceptance and use of Internet banking. All the respondents made it clear that customers who were knowledgeable about technology in general and computers in particular were more willing to accept and use Internet banking. This is because Internet banking mainly relies on computer and the Internet, so customers cannot accept Internet banking if they do not know how to deal with computers and they are fear technology and the Internet. Therefore, to adopt the Internet banking successfully customers have to have positive attitudes towards computers and the Internet. Similarly, Dinev et al. (2008) found that individual attitudes towards using technology seem to be a major element influencing the adoption and use of new technology:

... If client is IT literate then he by far would prefer to adopt the Internet banking because it's second nature to him. But when it comes down to a person who has problems in dialling up or logging on the Internet and he didn't know how to use computer, so they are not willing to accept and use Internet banking ...

(B2CM)

In addition, B4IM noted that if customers had prior knowledge of computers and the Internet, this reinforced their acceptance of Internet banking. The banks did not expect anyone to start banking online without a prior knowledge of computers and the Internet. Furthermore, B2IM made it clear that customers could not accept Internet banking without going through several steps starting
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with having a personal computer and knowing how to use it, dealing with different Microsoft Office tools and other programmes. This would lead them to starting to use the Internet. This would guide them to gaining knowledge about e-commerce and in turn leads to using Internet banking:

... That is the way customer flow happens. First the customer has a computer and knows how to deal with it, by practicing things like Excel, Word... those kinds of things. Once he is comfortable with that, he goes to the Internet, he starts looking for e-mail. If he’s comfortable with email, he’ll go to social networking sites. This will lead him to chatting rooms; he will try to build up his confidence. When his confidence is there about Internet this led him to accept and use Internet banking ...

(B2IM)

Three constructs (customers' attitude towards technology, self-efficacy and anxiety) need to be studied in order to measure customers' attitudes towards computers. The perceptions of the bank managers of these constructs are explained in the following sub-sections.

A. Customers Attitude Towards Using Technology

All the managers interviewed reported that if customers had a positive attitude towards technology this would lead them to accepting Internet banking easily, while if their attitude towards technology was negative they would not accept Internet banking easily. This finding is consistent with those of Ajzen and Fishbein (1980) and Venkatesh et al. (2003) who showed that attitude toward using technology is the individual's positive or negative affective reaction to start using and dealing with new technology.
Moreover, B1MM and B3EM explained that negative attitudes towards using technology could be turned into positive attitude in the event that customers had an internal desire to change their judgment towards new technologies. This might happen only if customers felt that the new technology provided a range of benefits for them. There are similarities between these findings and those of Jacoby et al. (2002) who pointed out that attitude follow from two types of input, either personal experience or the external environment:

... Customers who have positive attitude towards technology are more willing and they appreciate the effort that we have offered. However, there are only several who are completely worst in technology, but some of them have the will to start adapting technology ...

(B3EM)

B. Self-efficacy

The bank managers explained that the computer self-efficacy construct was one of the constructs that impacted their customers' intentions to accept Internet banking. Customers who had high levels of confidence with using computer were more likely to accept and use Internet banking, while those customers who did not have computer confidence were less likely to accept Internet banking. The findings of this study seem to be consistent with other studies (e.g. Guriting et al., 2007) which found that computer self-efficacy is one of the elements that affects the acceptance and use of Internet banking services:
... I would say that if customers have a computer confidence and they are considered as a good end-user of the basic requirements of computer and Internet those customers are going to accept and use the Internet banking easily...

(B4CM)

In addition, B6EM agreed that computer self-efficacy is an important factor affecting customers' intentions to accept Internet banking. But unfortunately there were some customers' who have computer self-efficacy but were not willing to accept and use Internet banking. From the manager perspective, these people used computers in their workplace as part of their jobs, but at the end of their official working hours, they were unwilling to use computing. Using computers in the office was mandatory, whereas using computers at home was voluntary:

... Customers who have computer self-efficacy are more willing to use the Internet banking because they have the confidence of using the PC and this is what we have noticed everywhere, but we cannot assure this because we have seen many people who use the PC everyday for work but not at home, they don't like to use the PC but because of duty requirement they have used it...

(B6EM)

C. Anxiety

The Omani bank managers' confirmed that computer anxiety was one of the obstacles that hindered the acceptance of Internet banking. Ten out of fourteen interviewees explained that customers' suffering from computer anxiety do not accept Internet banking, as they are afraid of losing their money or personal information by hitting the wrong key on the computer keyboard. This supports
previous research (e.g. Beckers et al., 2007; Arigbabu, 2009). One of the interviewees explained:

... If someone is scared of using the computer, they will never learn to use the Internet banking. You can’t even convince them or pressure them to do it. If something happens later on, transaction fails or something like that, you’ll get a million complaints coming ...

(B3EM)

In addition, B6EM clarified that the bank had tried seriously to help customers overcome their anxiety by adopting a suitable back-up system. In this regard, any transaction would be backed-up so that the bank could resolve any issues. Moreover, banks had designed the Internet banking system to ask users to confirm any transactions twice before they were implemented. It was hoped that this would have a positive impact on customers by decreasing their anxiety and increasing their self-efficacy:

... A suitable back-up system has been implemented in case of any incorrect transaction. Moreover, a twice conformation is recurred of any account transaction in order to keep the user sure that this transaction what he/she want to implement. This may decrease customers’ anxiety and increase their confidence regards the system...

(B6EM)

To that end, by 2011 His Majesty Sultan Qaboos bin Said has issued a Royal Grant bestowing one free laptop and Internet access modem for each school student that belong to beneficiary family of the social insurance and free personal computer per student in these families who are presently enrolled in higher education studies. Moreover, the grant also includes a subsidization of the cost of personal computers for higher education students enrolled in their first year of study in the Sultanate, in addition to teachers who are graduates of
the Government IT Training & Certification (GITTC) project (Information Technology Authority, 2011). This will be an important initiative in encouraging Omanis to adopt e-government in future by preparing the next generation, which will reflect positively on the acceptance of Internet banking. Thus, this construct may have a week influence on Internet banking acceptance in future.

6.8 Trust

The last factor that will be examined for the conceptual framework is trust. According to the literature review, trust is an individual belief about an organization’s reliability, ability, truth and strength, as any relation in the business world has to be built on trust (Eisenstadt, 1995). Therefore, all the Omani bank managers were asked their opinions with regard to trust as one of the constructs that might impact on customers’ acceptance of Internet banking. All the respondents confirmed that trust is the main construct that affects customers’ behavioural intentions towards the acceptance and use of Internet banking. Moreover, they pointed that trust is the key challenge for the success of any electronic service. This finding is consistent with those of Khalfan et al. (2006) and Al-Sajjan and Dennis (2009) who identified that lack of trust is one of the significant factors affecting bank customers’ acceptance and use of Internet banking:

... Trust is the key challenge, as if we gain customers’ trust with regards to our technology and Internet banking system, I think we don’t need to struggle into any other factors ...

(B6EM)
Furthermore, BTCM made it clear that customers have to trust Internet banking before using it as users accomplish all their account transactions online without human interaction. In addition, B2IM said that customers’ fear Internet banking because money is involved. They do not mind using the Internet on a daily basis, but when it comes to Internet banking they start thinking about security, privacy and safety. Additionally, bank managers identified three stages in terms of customers’ trust of Internet banking as follows:

- Trust in the bank.
- Trust in the Internet.
- Trust in Internet bank information.

The following sub-sections will explain in detail the bank managers’ perspectives regarding each of the three levels of trust in Internet banking and what actions had been taken by the banks to achieve customers’ trust at each stage.

A. Trust in the Bank

The first step towards trust in Internet banking is trust in the bank. In this regard, managers clarified that customers have to trust the bank they deal with as this type of trust leads them to feel more confident with all bank services. This step played a significant role by motivating bank customers to shift from traditional to Internet banking. These findings are consistent with previously-published results.
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(Sohail and Shanmugham, 2003; Saparito, 2004) who indicated that customers have to trust the bank they deal with as a first step in order to accept the Internet banking:

… If customers do not trust the bank full stop, they will not use the online facilities which affect their shifting towards Internet banking …

(B1MM)

Moreover, B3EM explained that banks have to provide their customers’ with a booklet clarifying the bank’s terms and conditions. This helps customers to understand their rights and the bank’s responsibilities in case of any problem. B1MM pointed out that the bank’s terms and conditions also have to be published on the bank’s website. In addition, B4CM and B7IM noted that banks have to build their customers’ trust through paying attention to their feedback and replying to it directly:

… We consider what customers need and we try to offer it by taking into our account the quality of the service before we launch it to customers in order to build trust between the bank and customers …

(B7IM)

B. Trust in the Internet

With regard to trust in the Internet, the Omani bank managers explained that trust in the Internet is an important step towards building trust in Internet banking. All the managers interviewed confirmed that trust in the Internet is a prerequisite to trust in Internet banking. There are similarities between these results and those described by Yousafzai et al. (2003) who noted that Internet trust is a prerequisite to trust in Internet banking. Moreover, B4CM and B5CM
reported that local bank customers do not have any problem in dealing with new technologies, as they had successfully adopted other electronic banking functions. The poor acceptance of Internet banking is due to the lack of trust in the Internet, as customers were worried about privacy and security. Moreover, B2CM explained that customers trusted the bank and they were willing to use Internet banking services but they believed that using the Internet was not a secure way of accessing their accounts. Similarly, several studies (e.g. Liao and Cheung, 2002; Jahangir and Begum, 2007; Kivijärvi et al., 2007) showed that Internet security is important to the acceptance and use of Internet banking. Thus, banks have to implement a high level of Internet security so customers will trust the online banking and feel more confident:

... Our customers are willing to use electronic banking services but according to Internet banking I think they don't willing because of the Internet security and privacy ...

(B5CM)

Furthermore, all respondents assured that the Omani banks had strived to provide security and privacy for their customers who used Internet banking services. The banks had implemented a range of methods to provide online users with security and privacy. However, B2IM and B6EM explained that banks had to take into their account that the protection methods should not interfere with the system’s ease of use. This is because in some cases, the security systems for Internet banking might make the system more difficult or complicated. Therefore, banks have to achieve a balance between protection and ease of use:
... We adopted several methods to keep our Internet banking secure, but we are in a very, very initial stage. We cannot make the things very complicated for the customer. we want to keep the things simple for the customer ...

(B2IM)

In addition, all the interviewees reported that there were a range of methods adopted by the Omani banks in order to make the system secure and private. In this context, all Omani banks that provide Internet banking service had signed agreements with international companies that specialized into website protection (e.g. VeriSign Trusted Company). So these security companies were responsible for protecting the bank’s website and Internet banking system from penetration by Internet hackers. Moreover, these companies had to discover any breach as soon as possible and take all necessary measures to protect the bank’s website and customer information:

... The bank implemented different issues to provide on-line customers with safe and privacy. We had an agreement with international company (VeriSign Trusted) to protect our Internet banking system from any kind of Internet hackers ...

(B7CM)

For trust and security issues (B2CM; B3EM; B6EM) explained that their banks had connected Internet banking and other electronic banking functions. For example, (B2; B3 and B6) banks sent a text message (SMS) to a customer’s mobile to inform the customer that his/her online account was open. Thus, in the case of account access by an unauthorized person the account holder would be aware immediately. In this case customers had to contact the bank immediately (e.g. bank call centre) to freeze all account operations.
Furthermore, for any transactions made online a SMS would be sent to the user's mobile:

... Users of Internet banking will receive a text message if their online account open and a further text message if any transaction has been implement. However, receiving a text message if unauthorized person open your on-line account give you chance to call the bank and freeze your account ...

(B3EM)

In all the banks, customers had to apply and receive their username and password from bank branch. This is to make sure that this security information had been received by the right person. Moreover, Omani banks provided their customers with two passwords, one for singing-in and one for account transactions, apart from (B6) bank which provided customers with one password – a mix of letters, numbers and symbols. Moreover, (B3 and B6) bank customers need to activate their username and passwords before they used it the first time by calling their bank’s call centre. Furthermore, four banks (B1, B3, B4 and B6) provided their corporate customers with token devices which provided users with different password each time they entered to their business account and a different password for every transaction. In addition, all the Omani banks provided their online users with virtual keyboards which appeared on the computer screen to enter their username and passwords. In this case, users did not need to use their computer keyboards, which may help hackers to steal their passwords:

... We offer two passwords one to login-in and one for transactions which have to renew each three months. Users have to enter their password by using a virtual keyboard which appears on their laptop or PC screen ...

(B7IM)
For security purposes all Internet banking users were requested to change their passwords every three months, except (B4) which required customers to change their passwords monthly. Furthermore, in case of forgotten or lost usernames and passwords customers had to report this to their bank branch to receive a new username and password. B6EM and B6BM clarified that their Internet banking customers did not need to visit their bank branch if they had any problem with their username and password but needed to enter their online account using their ATM number as a username and PIN code as a password. Thus, users could create a new username and password that suited them. In this context, B3EM argued with (B6) bank saying that using the number and PIN code of the ATM card to access to the Internet banking account is not secure.

Briefly, it can be concluded that Omani banks provided their customers with a number of methods to enhance customer security and privacy in order to promote customers trust in the Internet. However, managers mentioned that with the current levels of Internet banking adoption all the actions which had been taken to achieve security and privacy for users of banking services via the Internet were enough. This is because the adoption of Internet banking in Oman banking industry was still in the early stages. The list below presents the main methods that had been implemented by Omani banks to enhance customers' trust in the Internet in order to encourage them to trust Internet banking.
Chapter Six: The Main Constructs Affecting Bank Customers Behavioural Intentions to Accept and Use Internet Banking from the Bank Managers' perspective.

- Connect between electronic banking functions.
- Apply and receive username and passwords from the bank branch.
- Activate the username and passwords before used it by calling the bank call centre.
- Implement two passwords, one for singing-in and one for account transactions.
- The validity of the passwords is 90 days.
- Agreement with international companies that specialized in website protection.
- Virtual keyboard appearing on the user’s screen to enter the username and password.
- Providing corporate customers with a token device to enhance security.

C. Trust in Internet Banking Information

After the achievement of trust in bank and the Internet banks, had to achieve customers’ trust in Internet banking. The Omani bank managers demonstrated that if customers trusted the Internet to complete their banking operations they were on their way to trusting Internet banking. During this phase, customers needed to build trust in the information provided by the bank through Internet banking. This finding concurred with Wang and Emurian (2005) who indicated that banks have to take care with respect to all information available to
customers via Internet banking, in order to provide Internet banking users with accurate, complete and relevant information.

To achieve customers’ trust in Internet banking, the bank managers made it clear that as a first stage they had to make sure that the bank information was accurate and up-to-date. In this context, banks updated all account information immediately after the completion of any account transaction via Internet banking, as all banks had a link between Internet banking and core banking systems. This was consistent with previously-published results (McCole, 2002; Wang and Emurian, 2005) who explained that trust in Internet banking information had to be accurate. One of the interviewee explained:

... All account transactions are updated immediately on the spot, updating customers profile, cash withdrawal, cash deposit, utility bill payments, transfer of funds, transfer to credit card, all these transactions takes place immediately as it linked directly to the core banking system ...

(B3BM)

In addition, twelve interviewees explained that there were some account requests that did not take place immediately, such as remittances which would be dealt with the next working day. This is because the CBO imposed restrictions on international remittances in order to reduce money laundering. Moreover, B1EM and B7IM noted that remittances did not take place at the same time because of the time difference between the States.

... The transactions which are requested and linked to third party will be done on the next working day as it has to be done during working hours as we link to the Central Bank rules and regulations. Furthermore, differences in time between some countries delay international transfers ...

(B1EM)
Additionally, at the second stage with regard to trust in Internet banking all Internet banking information which appeared on the bank website had to be complete and relevant. In this contest, bank managers made it clear that the updated information on their core banking system linked to all banking systems including the Internet and Web banking systems. So, at the same time exchange rates or interest rates were updated in the banks' branches it will be also updated instantaneously on Internet banking system. This is consistent with previously-published results (McCole, 2002; Wang and Emurian, 2005) who explained that trust in the Internet bank information required it to be complete, accurate and relevant:

... It has to be dynamic, when I say dynamic it has to be updated all the day as all presenting information to customers have to be updated, correct and relevance ...

(B7IM)

6.9 An Initial Model of Acceptance and Use of Internet Banking in the Sultanate of Oman

According to the first phase research findings there are a number of constructs that affect the Omani bank customers' acceptance of Internet banking. Figure 6.1 illustrates the six main independent constructs (performance expectancy, effort expectancy, facilitating conditions, culture, customers' attitude towards computers and trust) that affect customers' behavioural intentions towards the acceptance and use of Internet banking in Oman. Furthermore, three main moderators (gender, age, and educational level) moderate the relationships
between the six constructs and bank customers' behavioural intentions. With regard to the voluntariness of use moderator the first phase findings illustrated that Internet banking is voluntary under any circumstances.

The research conceptual framework that was developed in chapter three based upon the UTAUT model has been discussed with the Omani bank managers. The findings demonstrate that the conceptual framework is comprehensive, as it contains the main constructs that impact customers' behavioural intentions towards the acceptance and use of Internet banking in the view of the Omani bank managers. However, according to the Omani bank managers' perceptive acceptance and use of Internet banking is voluntary under any circumstances. For this reason there is no need to test if Internet banking is voluntary or mandatory. Therefore, the voluntariness of use moderator was deleted from the initial model before it way re-tested with bank customers in the second phase of fieldwork. Figure 6.1 presents the initial model of acceptance and use of Internet banking in the Sultanate of Oman.
6.10 Summary

The chapter has explored the perceptions of bank managers about the main constructs that affect customers' acceptance and use of Internet banking. The research results illustrated that there are six independent constructs (performance expectancy, effort expectancy, facilitating conditions, culture, customers' attitude towards computers and trust) affecting Omani bank customers' behavioural intentions towards the acceptance and use of Internet banking. Furthermore, the chapter clarified the mechanism followed by the Omani banks to make a positive impact of these constructs on the customers' behavioural intentions. The chapter discussed and presented the main
moderators (gender, age and educational level) that impact on relationships between the different constructs and customers' behavioural intentions. With regard to the voluntariness of use moderator the first phase findings illustrated that Internet banking cannot be mandatory. Thus, acceptance and usage of Internet banking is voluntary under any circumstances. Finally, the chapter ends with the presentation of an Initial model of acceptance and use of Internet banking in the Sultanate of Oman. The model was developed based on the Omani bank managers' perceptive. The next chapter is designed to test the initial model based on bank customers' perceptive.
CHAPTER SEVEN: MODELLING INTERNET BANKING ACCEPTANCE AND USE IN THE OMANI CONTEXT

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7.1 Introduction

This chapter presents the outcomes of the process of testing the initial model of Internet banking acceptance which contained six independent constructs and three moderators (see Figure 6.1) in order to develop an appropriate model to reflect the Omani context. The chapter is divided into three parts (see Figure 7.1). The first part (section 7.2) focuses on the preliminary analysis of the conceptual framework constructs (performance expectancy, effort expectancy, facilitating conditions, culture, customer attitudes towards computers and trust). Section 7.3 outlines a summary of findings and integrates the preliminary analysis. The second part (section 7.4) focuses on the inferential statistical analysis by using the confirmatory factor analysis (CFA). The third part (section 7.5) focuses on structural equation modelling (SEM) and tests the initial research model. Section 7.6 outlines the main issues of the open-ended question which was divided into two groups: problems and constraints of using Internet banking and suggestions for the improvement of Internet banking. Section 7.7 summarises the entire chapter.

![Figure 7.1 Data analysis process following in this chapter](image-url)
Chapter Seven: Modelling Internet Banking Acceptance and Use in the Omani Context

7.2 Part One – Preliminary Analysis Using Parametric Tests

The conceptual framework of this study was designed based on the UTAUT model which was developed by Venkatesh et al. (2003) (see Figure 3.11). This was tested with the Omani bank managers and an initial model was achieved. The initial model contained six independent constructs (performance expectancy, effort expectancy, facilitating conditions, culture, customer attitudes towards computers and trust) and three moderators (gender, age and educational level) that influence bank customers’ behavioural intentions towards the acceptance and use of Internet banking (see Figure 6.1).

For the purposes of testing the initial framework and to determine the impact of each moderator on the six independent constructs, a set of statistical tests were carried out. Before determining the appropriate statistical tests that were to be used, it is necessary to check the reliability of each factor scale using Cronbach’s Alpha value (see Table 7.1). A value of alpha equal or greater than 0.7 means that the factor is internally reliable (Pallant, 2007). To measure Cronbach’s Alpha value all the negative statements were reverse-coded. Table 7.1 presents Cronbach’s Alpha value for each of the construct in the initial model.
Chapter Seven: Modelling Internet Banking Acceptance and Use in the Omani Context

### Table 7.1: Cronbach’s Alpha value for each factor of the conceptual framework

<table>
<thead>
<tr>
<th>Factor</th>
<th>Cronbach’s Alpha value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Expectancy</td>
<td>0.93</td>
</tr>
<tr>
<td>Effort Expectancy</td>
<td>0.96</td>
</tr>
<tr>
<td>Facilitating Condition</td>
<td>0.85</td>
</tr>
<tr>
<td>Culture</td>
<td>0.75</td>
</tr>
<tr>
<td>Customers Attitudes Towards Computer</td>
<td>0.70</td>
</tr>
<tr>
<td>Trust</td>
<td>0.85</td>
</tr>
</tbody>
</table>

From Table 7.1 it is clear that all the values of alpha are greater than or equal to 0.70 which means that the scales for each construct were internally reliable. Accordingly, for the purposes of inferential statistical analysis, new scale averages were developed from all statements individually to produce the arithmetic mean (see Table 7.2). The new scale averages were to determine the impact of each moderator on the six independent constructs and its relationship with behavioural intentions towards the acceptance and use of Internet banking.

#### 7.2.1 Descriptive Analysis of the New Average Constructs

As explained earlier in chapter 4 the respondents’ perspective for each construct were measured by asked a number of questions regarding each construct with the answers in the form of a four-point Likert scale. In this section a descriptive analysis for the new average constructs is undertaken by using the mean and standard deviation (see Table 7.2)
Chapter Seven: Modelling Internet Banking Acceptance and Use in the Omani Context

Based on the data contained in Table 7.2, the scale mid-point of the arithmetic mean of the constructs is equal to 2.5, as the agreement Likert measurement scales (strongly agree, agree, disagree, strongly disagree) was used in this study. For each scale a t-test was used to compare the scale average with the mid-point. The results demonstrated that:

- The respondents disagreed that Internet banking is useful as measured in performance expectancy.
- The respondents disagreed that Internet banking is easy to use as measured in effort expectancy.
- The respondents disagreed that the Omani banks offered all the necessary assistance (facilitating conditions) to those customers who use or are willing to use Internet banking.
- The respondents agreed that culture is a construct that affects their acceptance of Internet banking.

<table>
<thead>
<tr>
<th>Average Constructs</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-test Value = 2.5</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Expectancy</td>
<td>2.33</td>
<td>0.76</td>
<td>-5.64</td>
<td>610</td>
<td>P &lt; 0.05</td>
</tr>
<tr>
<td>Effort Expectancy</td>
<td>2.32</td>
<td>0.90</td>
<td>-5.05</td>
<td>610</td>
<td>P &lt; 0.05</td>
</tr>
<tr>
<td>Facilitating Condition</td>
<td>2.17</td>
<td>0.66</td>
<td>-12.44</td>
<td>610</td>
<td>P &lt; 0.05</td>
</tr>
<tr>
<td>Culture</td>
<td>3.03</td>
<td>0.46</td>
<td>28.46</td>
<td>610</td>
<td>P &lt; 0.05</td>
</tr>
<tr>
<td>Customers Attitudes Towards Computer</td>
<td>2.59</td>
<td>0.46</td>
<td>5.03</td>
<td>610</td>
<td>P &lt; 0.05</td>
</tr>
<tr>
<td>Trust</td>
<td>2.43</td>
<td>0.52</td>
<td>-3.43</td>
<td>610</td>
<td>P &lt; 0.05</td>
</tr>
</tbody>
</table>
Chapter Seven: Modelling Internet Banking Acceptance and Use in the Omani Context

- The respondents agreed that their computer experience affects their behavioural intentions towards the acceptance and use of Internet banking.
- The respondents disagreed that they can trust Internet banking.

7.2.2 Analysis of the Initial Model constructs and moderators Using Parametric Tests

In order to determine the impact of each moderator on the six independent constructs, a number of additional statistical tests were undertaken. In this study, with a four-point Likert scale non-parametric statistical tests would normally be considered more suitable. However, since this study uses average constructs in developing the model parametric statistical tests were considered more appropriate (Which Test, 2004). Thus, two parametric statistical tests were used: a t-test and an analysis of variance (ANOVA). The t-test was used to compare the scores of two groups, whereas the one-way analysis of variance (ANOVA) was applied to compare between one independent variable which has several numbers of levels with different factors. Post Hoc Test used with ANOVA to identify which specific group pair(s) are statistically different from each other. The test results were considered significant if the test value $P < 0.05$ (Pallant, 2007). These parametric statistical tests were used to identify the effects of gender, age and educational level on the six independent constructs and its relationship with the behavioural intentions towards the acceptance and use of Internet banking.
7.2.2.1 Gender and the Acceptance of Internet Banking

As mentioned earlier, gender is one of the moderators that affects the relationship between the constructs and respondents' behavioural intentions towards the acceptance and use of Internet banking (Venkatesh et al., 2003). Thus, a t-test to compare differences between two independent groups was used. Table 7.3 outlines the t-test results for gender moderator.

The data presented in Table 7.3 showed that there was a significant difference between males and females with regard to the effort expectancy and customers' attitude towards computers. According to the mean mid-point scale the findings illustrated that males' attitude towards the ease to use is more positive than females, although both males and females disagreed that Internet banking is easy to use. In regard to customers' attitude towards computers, there was a significant difference between males and females. The findings showed that males' attitudes towards computers were more positive than females' attitude.
Generally the findings agree with Venkatesh and Morris (2000), Venkatesh et al. (2003) and Yousafzai and Yani-de-Soriano (2012) who illustrated that males are more disposed to the acceptance and use of new technology which they believed are easy to use. In addition, the findings showed that the males' attitude to using computers was more positive than the females. This finding is consistent with those of Meelissen and Drent (2008) who claimed that there is a relationship between gender and attitude towards using technology since males are more interested in new technology (computers) than females. At the same time, these results contradict those of Bain and Rice (2006) who noted that there was no difference between males and females in their attitude to the use of technology (computer).

Conversely, there were no significant differences between the beliefs of males and females with regard to Internet banking performance expectancy, facilitating conditions, culture and trust. The results illustrated that males and females disagreed that they can trust Internet banking owing to lack of usefulness and facilitating conditions. In addition, males and females agreed that the culture construct impacted their acceptance of Internet banking. These findings contradict those of Venkatesh et al. (2003) and Yousafzai and Yani-de-Soriano (2012) which demonstrated that according to performance expectancy males tend to be highly task-oriented and more willing to accept and use new technology. However, the results are consistent with those of Robinson (2006) who explained that there was no gender difference with regard to Internet
banking performance expectancy. Furthermore, according to the t-test findings for the facilitating conditions construct there is a contradiction with the findings of Durndell and Haag (2002) findings which demonstrated that facilitating conditions are more likely to be more important for females than males.

Nevertheless, the t-test findings demonstrated that there was no difference between males and females with regards to the culture construct. This finding contradicts those of Venkatesh et al. (2003) and Bandyopadhyay and Fraccastoro (2007) who found that females tend to be more concerned with the beliefs of others in their society. Concerning the trust construct, the t-test finding contradicts those of Kolsaker and Payne (2002) and Siegrist, et al. (2005) who showed that gender plays an important role in the trust of technology, as trust is more likely to be important for females than males.

7.2.2.2 Age and the Acceptance of Internet Banking

The second moderator that will be considered in term of its impact on the six independent constructs that influence the respondents' behavioural intentions towards the acceptance and use of Internet banking is age. The age moderator was divided into six age sub-groups (less than 20 years, 20 – 30, 31 – 40, 41 – 50, 51 – 60, more than 60 years) so the appropriate parametric test to use was the one-way analysis of variance (ANOVA) as it allows the comparison of one independent variable which has several levels. Post Hoc Test used with ANOVA to identify which specific group(s) are statistically different from each
other (Pallant, 2007). Table 7.4 outlines the mean (\( \bar{x} \)), standard deviation (s) and number of the respondents (n) of each age sub-group. In addition, Table 7.5 shows the results of ANOVA test for the age moderator.

| Table 7.4 Mean, standard deviation and number of the respondents of each age sub-group |
|---|---|---|---|---|---|---|---|---|
| Age sub-groups | Less than 20 years | 20-30 years | 31-40 years | 41-50 years | 51-60 years | More than 60 years |
| Construct | \( \bar{x} \) | s | n | \( \bar{x} \) | s | n | \( \bar{x} \) | s | n | \( \bar{x} \) | s | n | \( \bar{x} \) | s | n |
| Performance Expectancy | 2.20 | 0.51 | 35 | 2.51 | 0.71 | 183 | 2.56 | 0.75 | 166 | 2.30 | 0.80 | 110 | 1.79 | 0.59 | 83 | 1.76 | 0.56 | 34 |
| Effort Expectancy | 2.75 | 0.85 | 35 | 2.60 | 0.80 | 183 | 2.54 | 0.87 | 166 | 2.18 | 0.89 | 110 | 1.67 | 0.65 | 83 | 1.70 | 0.59 | 34 |
| Facilitating Conditions | 2.23 | 0.55 | 35 | 2.32 | 0.66 | 183 | 2.35 | 0.58 | 166 | 2.15 | 0.67 | 110 | 1.71 | 0.53 | 83 | 1.65 | 0.59 | 34 |
| Culture | 3.15 | 0.34 | 35 | 2.89 | 0.41 | 183 | 2.88 | 0.42 | 166 | 3.10 | 0.48 | 110 | 3.35 | 0.41 | 83 | 3.48 | 0.40 | 34 |
| Customers Attitude towards Computers | 2.83 | 0.42 | 35 | 2.75 | 0.41 | 183 | 2.71 | 0.42 | 166 | 2.52 | 0.64 | 110 | 2.22 | 0.33 | 83 | 2.13 | 0.39 | 34 |
| Trust | 2.30 | 0.39 | 35 | 2.52 | 0.52 | 183 | 2.58 | 0.53 | 166 | 2.37 | 0.55 | 110 | 2.20 | 0.42 | 83 | 2.06 | 0.34 | 34 |

| Table 7.5 The one-way analysis of variance (ANOVA) results for age moderator |
| Construct | F | df | Sig. |
| Performance Expectancy | 20.273 | 5,610 | \( P < 0.001 \) |
| Effort Expectancy | 30.708 | 5,610 | \( P < 0.001 \) |
| Facilitating Conditions | 19.484 | 5,610 | \( P < 0.001 \) |
| Culture | 25.758 | 5,610 | \( P < 0.001 \) |
| Customers Attitude towards Computers | 33.232 | 5,610 | \( P < 0.001 \) |
| Trust | 12.334 | 5,610 | \( P < 0.001 \) |

Based on Table 7.5, the findings indicated significant differences among the age moderator and model constructs. Therefore, a set of Post-Hoc tests were applied among the age sub-groups in order to identify any significant differences between the six age subgroups.
• Performance Expectancy

The Post-Hoc tests were applied and the results showed (see Table 7.6) that there were significant differences between older age sub-groups (51 – 60 and more than 60 years) compared with younger and mid-age sub-groups (20 – 30, 31 – 40, and 41 – 50 years). This is because, younger and mid-age respondents' were more widely accepted the usefulness and effectiveness of Internet banking, while those respondents' aged above 50 years old believed that Internet banking is not useful according to the mid-point scale (see Table 7.4).

There were no significant differences between younger and mid-age sub-groups (Less than 20, 20 – 30, 31 – 40, and 41 – 50 years), as generally they have a similar attitude towards the Internet banking performance expectancy. Moreover, the results showed that there were no significant differences between the respondents' aged less than 20 years and other age subgroups. This is may be because the respondents' were students and were under the care and control of their parents.

Table 7.6 summarises the outcome of the Post-Hoc tests between the age subgroups according to the performance expectancy average construct. It should be noted that Post-Hoc tests results support previous research findings which links user age and the acceptance of new technology as younger individuals are
more conscious of the relative usefulness of advanced technological systems compared with older individuals (Venkatesh et al., 2003).

| Table 7.6 Significant differences between age sub-groups and performance expectancy |
|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Age Subgroups                              | Less than 20 years                            | 20 – 30 years                                 | 31 – 40 years                                 | 41 – 50 years                                 | 51 – 60 years                                 | More than 60 years                            |
| Less than 20 years                         | NS                                            | NS                                            | NS                                            | NS                                            | NS                                            | NS                                            |
| 20 – 30 years                              | NS                                            | NS                                            | P < 0.001                                     | P < 0.001                                     |                                               |                                               |
| 31 – 40 years                              | NS                                            | NS                                            | P < 0.001                                     | P < 0.001                                     |                                               |                                               |
| 41 – 50 years                              |                                               |                                               |                                               |                                               |                                               |                                               |
| 51 – 60 years                              |                                               |                                               |                                               |                                               |                                               |                                               |
| More than 60 years                         |                                               |                                               |                                               |                                               |                                               |                                               |


**Effort Expectancy**

The Post-Hoc tests results (see Table 7.7) demonstrated that the respondents aged more than 40 years were more resistant to the acceptance and use of Internet banking as they believed that Internet banking is complicated and difficult to deal with. According to the mid-point scale (see Table 7.4) the respondents aged less than 40 years agreed that Internet banking is easy to use.

From the previous findings, it can be noted that with the increasing of the respondents' age, Internet banking become complicated from the respondents' perspective. Thus, the age of 40 years can be considered as a watershed, as those respondents aged less than 40 years have a positive belief concerning Internet banking effort expectancy compared with older respondents. This finding supports previous research which links the user's age and the acceptance of new technology concerning effort expectancy (e.g. Venkatesh et
al., 2003; Bandyopadhyay and Fraccastoro, 2007). Table 7.7 summarises the levels of significance of the differences between age sub-groups according to the effort expectancy average construct.

**Table 7.7 Significant differences between age sub-groups and effort expectancy**

<table>
<thead>
<tr>
<th>Age Subgroups</th>
<th>Less than 20 years</th>
<th>20 – 30 years</th>
<th>31 – 40 years</th>
<th>41 – 50 years</th>
<th>51 – 60 years</th>
<th>More than 60 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20 years</td>
<td>NS</td>
<td>NS</td>
<td>P &lt; 0.05</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>20 – 30 years</td>
<td>NS</td>
<td>NS</td>
<td>P &lt; 0.005</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>31 – 40 years</td>
<td></td>
<td></td>
<td>P &lt; 0.05</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>41 – 50 years</td>
<td></td>
<td></td>
<td></td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.005</td>
<td></td>
</tr>
<tr>
<td>51 – 60 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>More than 60 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NS = Not Significant

**Facilitating Conditions**

The Post-Hoc tests were applied and the results demonstrated that there were significant differences between younger and mid-age sub-groups (Less than 20, 20 – 30, 31 – 40, and 41 – 50 years) compared with older age sub-groups (51 – 60 to more than 60 years) (see Table 7.8). The results illustrated that the respondents' disagreed that banks offered the necessary assistance to use Internet banking (see table 7.4). However, older respondents attach greater importance to receiving assistance to the use of Internet banking, especially at the early stages of Internet banking acceptance. This might be because they feel more comfortable in the presence of bank employees where they could ask for assistance.

Generally, the previous parametric test findings were consistent with published findings (e.g. Friertag and Berge, 2008) which showed that younger people are...
more willing to accept and use new technology even in the absence of facilitating conditions. Table 7.8 summarises the levels of significance of the differences between age sub-groups according to the facilitating conditions average construct.

| Table 7.8 Significant differences between age sub-groups and facilitating conditions |
|---------------------------------|-----------------|----------------|-----------------|-----------------|-----------------|
| Age Subgroups                   | Less than 20 years | 20 – 30 years | 31 – 40 years | 41 – 50 years | 51 – 60 years | More than 60 years |
| Less than 20 years              | NS               | NS            | NS             | P < 0.005     | P < 0.01     |                 |
| 20 – 30 years                   | NS               | NS            | NS             | P < 0.001     | P < 0.001    | P < 0.001     |
| 31 – 40 years                   | NS               | NS            | P < 0.001      | P < 0.001     |                 |                 |
| 41 – 50 years                   | P < 0.001        | P < 0.001     |                 |                 |                 |                 |
| 51 – 60 years                   |                 | NS            |                 |                 |                 |                 |
| More than 60 years              |                 |               |                 |                 |                 | NS             |

NS = Not Significant

- Culture

In order to identify the significant differences between the age sub-groups the Post-Hoc tests were applied (see Table 7.9). Post-Hoc tests results indicated that the age moderator had a direct impact on the culture construct. The effect of culture was found to be more salient for respondents' aged above 40 years. This may be because older respondents are normally more sensitive to the opinions of others and more resistant to change. It should be noted that there were no differences between the respondents' aged less than 20 years and other age subgroups. This may be due to the nature of this age subgroup, as they are still supervised by their parents.

The previous finding is consistent with those of Venkatesh et al. (2003) as well as Bandyopadhyay and Fracastoro (2007) who found that social influence
(culture) affected more older individuals. Table 7.9 summarises the levels of significance of the differences between age sub-groups according to the culture average construct.

<table>
<thead>
<tr>
<th>Table 7.9 Significant differences between age sub-groups and culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Subgroups</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Less than 20 years</td>
</tr>
<tr>
<td>20 – 30 years</td>
</tr>
<tr>
<td>31 – 40 years</td>
</tr>
<tr>
<td>41 – 50 years</td>
</tr>
<tr>
<td>51 – 60 years</td>
</tr>
<tr>
<td>More than 60 years</td>
</tr>
</tbody>
</table>

NS = Not Significant

- **Customers Attitudes towards Computers**

The Post-Hoc tests were applied among the six age sub-groups (see Table 7.10). The results showed that the respondents’ aged less than 40 years had positive attitudes towards the use of computers when compared with those respondents’ aged more than 40 years. According to the descriptive analysis older respondents normally suffered from technology and computer anxiety and felt less confident in using computers.

On the other hand, respondents’ aged less than 40 years had more positive attitudes towards the use of computers (see Table 7.4). Generally, the first three age sub-groups (Less than 20, 20 – 30 and 31 – 40 years) had a high level of confidence towards the use of technology and computers. This may due to the development in the Omani education sector during the last forty years (Ministry...
of Education, 2011), which had a positive impact on the acceptance of evolution in all sectors including the development in ICT.

The findings in this study support the findings of previous research which links user age and the acceptance of new technology to users' attitude towards the use of computers and technology (e.g. Dinev et al., 2008; Kang and Yoon, 2008). Table 7.10 summarises the levels of significance of the differences between age sub-groups according to the customers attitudes towards computers average construct.

<table>
<thead>
<tr>
<th>Table 7.10 Significant differences between age sub-groups and customer attitudes towards computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Subgroups</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Less than 20 years</td>
</tr>
<tr>
<td>20 - 30 years</td>
</tr>
<tr>
<td>31 - 40 years</td>
</tr>
<tr>
<td>41 - 50 years</td>
</tr>
<tr>
<td>51 - 60 years</td>
</tr>
<tr>
<td>More than 60 years</td>
</tr>
</tbody>
</table>

NS = Not Significant

• Trust

The Post-Hoc tests were applied (see Table 7.11) and the results showed that the respondents' aged over 40 years disagreed that Internet banking is safe and secure in comparison with those respondents' aged (20 – 40) years. Linking these results with the results obtained from the descriptive statistical analysis (see Appendix One, Table 11), it can be noted that the main issue is the lack of trust in the Internet, which reflected negatively on the trust in Internet banking.
The findings of this research are in agreement with those of McCole (2002) as well as Wang and Emurian (2005) who claimed that younger people trust Internet banking more than older bank customers. Table 7.11 summarises the levels of significance of the differences between age sub-groups according to the trust average construct.

<table>
<thead>
<tr>
<th>Age Subgroups</th>
<th>Less than 20 years</th>
<th>20 – 30 years</th>
<th>31 – 40 years</th>
<th>41 – 50 years</th>
<th>51 – 60 years</th>
<th>More than 60 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20 years</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>20 – 30 years</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>P &lt; 0.01</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>31 – 40 years</td>
<td>P &lt; 0.05</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>41 – 50 years</td>
<td></td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>51 – 60 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 60 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7.11 Significant differences between age sub-groups and trust

NS = Not Significant

7.2.2.3 Educational Level and the Acceptance of Internet Banking

The third moderator affecting the relationship between the model constructs and bank customers' behavioural intentions towards the acceptance and use of Internet banking is educational level. Educational level moderator was divided into five education level sub-groups (School certificate, Diploma degree, Bachelor degree, Masters degree and PhD degree). As for the analysis for the age moderator, the suitable statistical test was ANOVA with Post-Hoc tests. Table 7.12 outlines the mean (\( \bar{x} \)), standard deviation (s) and number of the respondents (n) of each educational level sub-group. In addition, Table 7.13 outlines the ANOVA results for educational level.
Table 7.12 Mean, standard deviation and number of the respondents of each educational level sub-group

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>School Certificate</th>
<th>Diploma Degree</th>
<th>Bachelor Degree</th>
<th>Master Degree</th>
<th>PhD Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \bar{x} )</td>
<td>( s )</td>
<td>( n )</td>
<td>( \bar{x} )</td>
<td>( s )</td>
</tr>
<tr>
<td>Performance Expectancy</td>
<td>2.02</td>
<td>0.66</td>
<td>141</td>
<td>2.04</td>
<td>0.61</td>
</tr>
<tr>
<td>Effort Expectancy</td>
<td>2.02</td>
<td>0.87</td>
<td>141</td>
<td>1.98</td>
<td>0.76</td>
</tr>
<tr>
<td>Facilitating Conditions</td>
<td>1.94</td>
<td>0.64</td>
<td>141</td>
<td>1.99</td>
<td>0.57</td>
</tr>
<tr>
<td>Culture</td>
<td>3.22</td>
<td>0.44</td>
<td>141</td>
<td>3.17</td>
<td>0.42</td>
</tr>
<tr>
<td>Customers Attitude towards Computers</td>
<td>2.42</td>
<td>0.48</td>
<td>141</td>
<td>2.50</td>
<td>0.42</td>
</tr>
<tr>
<td>Trust</td>
<td>2.23</td>
<td>0.43</td>
<td>141</td>
<td>2.27</td>
<td>0.37</td>
</tr>
</tbody>
</table>

Table 7.13 The one-way analysis of variance (ANOVA) results for the educational level moderator

<table>
<thead>
<tr>
<th>Construct</th>
<th>F</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Expectancy</td>
<td>37.000</td>
<td>4, 610</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Effort Expectancy</td>
<td>28.880</td>
<td>4, 610</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Facilitating Conditions</td>
<td>19.897</td>
<td>4, 610</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Culture</td>
<td>34.283</td>
<td>4, 610</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Customers Attitude towards Computers</td>
<td>19.571</td>
<td>4, 610</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Trust</td>
<td>22.775</td>
<td>4, 610</td>
<td>P &lt; 0.001</td>
</tr>
</tbody>
</table>

Based on the ANOVA findings in table 7.13, the findings indicated that there were significant differences among the educational level moderator and model constructs. To identify the main significant differences between the educational levels Post-Hoc tests were applied. The following points illustrate the results of Post-Hoc tests through the initial model constructs with regard to the educational level moderator.
Performance Expectancy

The Post-Hoc tests were applied and the results verified that the usefulness of Internet banking linked to the respondents' educational level (see Table 7.14). More-educated respondents' generally have more positive expectations of Internet banking performance expectancy.

Post-Hoc tests results showed that there were no significant differences between the two postgraduate degrees of Masters and PhD and both groups more widely accepted the usefulness and effectiveness of Internet banking. In addition, there were no significant differences among the diploma degree and school certificate holders as both groups disagreed with the statement that Internet banking is useful. On the other hand, there were significant differences between the postgraduate respondents' (Masters and PhD degree holders) and other respondents' (Bachelor, diploma and high school certificate holders). Moreover, there were significant differences between Bachelors degree holders' compared with diploma degree and school certificate holders. Hence, it is clear that holders of Bachelor degrees were more widely accepted the usefulness of Internet banking when compared with those with a lower level of educational attainment (see Table 7.12). Thus, more educated respondents' had more positive expectations of Internet banking performance expectancy.
The findings of this research are consistent with those of Compton et al. (2002) who claimed that knowledge and educational level impact on the relationship between performance expectancy and behavioural intentions. On the basis that more educated individuals are more willing to accept and use new technology, as they recognised their usefulness. Table 7.14 summarises the levels of significance of the differences between educational level sub-groups according to the performance expectancy average construct.

<table>
<thead>
<tr>
<th>Educational Level Subgroups</th>
<th>School Certificate</th>
<th>Diploma Degree</th>
<th>Bachelor Degree</th>
<th>Master Degree</th>
<th>PhD Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Certificate</td>
<td>NS</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Diploma Degree</td>
<td></td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td></td>
<td></td>
<td>P &lt; 0.005</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Master Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td>PhD Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NS = Not Significant

- **Effort Expectancy**

The Post-Hoc tests results demonstrated that there were significant differences between graduate respondents' (school certificate, diploma and bachelor holders) and postgraduate respondents' (Masters and PhD holders) (see Table 7.15). Moreover, there were significant differences between the Bachelor's degree holders and school certificate and diploma degree holders.

According to the Post-Hoc tests, holders of Bachelors' degrees are considered as watershed, on the basis that they differ from other education level
subgroups. The perspectives of this group of respondents’ were positive with regard to the Internet banking effort expectancy compared with less-educated respondents. Meanwhile, postgraduate respondents (Masters and PhD holders) were more agreed that Internet banking ease of use compared with Bachelors’ degree holders (see Table 7.12). As with increased educational level they agreed that Internet banking was ease of use.

The findings demonstrate that the user’s educational level and effort expectancy of new technology are linked (e.g. Al-Gahtani et al., 2007). Table 7.15 summarises the levels of significance of the differences between educational level sub-groups according to the effort expectancy average construct.

<table>
<thead>
<tr>
<th>Educational Level Subgroups</th>
<th>School Certificate</th>
<th>Diploma Degree</th>
<th>Bachelor Degree</th>
<th>Master Degree</th>
<th>PhD Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Certificate</td>
<td>NS</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Diploma Degree</td>
<td></td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td></td>
<td></td>
<td>P &lt; 0.005</td>
<td>P &lt; 0.005</td>
<td></td>
</tr>
<tr>
<td>Master Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td>PhD Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NS = Not Significant*

- **Facilitating Conditions**

The Post-Hoc tests results (see Table 7.16) showed that respondents with a lower level of educational attainment (school certificate and diploma holder) were in greatest need of assistance in using Internet banking, especially in the early stages of Internet banking acceptance. In addition, postgraduate holders were convinced that Omani banks provided the necessary facilitating conditions.
to users of Internet banking. The results indicated that there were no significant difference between university graduates (Bachelor's and postgraduate holders) but Bachelor's degree holders needed greater assistance when compared to postgraduate holders (see Table 7.12).

This is consistent with previously-published results, Pare and Elam (1995) for example explained that less well-educated individuals were hesitant to accept advanced technologies without assistance. Table 7.16 summarises the levels of significance of the differences between educational level sub-groups according to the facilitating conditions average construct.

<table>
<thead>
<tr>
<th>Educational Level Subgroups</th>
<th>School Certificate</th>
<th>Diploma Degree</th>
<th>Bachelor Degree</th>
<th>Master Degree</th>
<th>PhD Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Certificate</td>
<td>NS</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.005</td>
</tr>
<tr>
<td>Diploma Degree</td>
<td>P &lt; 0.005</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
<td>P &lt; 0.005</td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td></td>
<td></td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Master Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td>PhD Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NS = Not Significant

- Culture

The Post-Hoc tests results indicated that there were significant differences between more-educated and less-educated respondents' with regards to the culture construct (see Table 7.17). The results illustrated that the impact of culture on the respondents' acceptance and usage of Internet banking decreases with the increase of the respondents' educational level.
Therefore, the effect of culture was salient for less well-educated respondents (school certificate and diploma), compared with those respondents' who obtained higher educational degrees (Bachelor's, Masters and PhD). According to the mid-point scale (see Table 7.12) respondents with a lower educational level were normally more sensitive to other's opinions and suggestions and were more resistant to change. In contrast, respondents who obtained higher educational degrees were less susceptible to the effect of their society, but still they were concerned about their society culture.

In addition, the previous findings are consistent with those of Chanasuc and Praneetpolgrang (2008) who clarified that educational level moderates the culture construct towards the acceptance of new technology. Table 7.17 summarises the levels of significance of the differences between educational level sub-groups according to the culture average construct.

<table>
<thead>
<tr>
<th>Educational Level Subgroups</th>
<th>School Certificate</th>
<th>Diploma Degree</th>
<th>Bachelor Degree</th>
<th>Master Degree</th>
<th>PhD Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Certificate</td>
<td>NS</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.005</td>
<td></td>
</tr>
<tr>
<td>Diploma Degree</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.005</td>
<td></td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Master Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PhD Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NS = Not Significant
• Customers Attitude towards Computers

The Post-Hoc tests results showed that the respondents' attitude towards computers were more positive than those who obtained Bachelors' and postgraduate degrees compared with those respondents' who had obtained lower educational degrees (school certificate and diploma degree) (see Table 7.12 and 7.18). It can be noted that with the increase in the respondents educational level their attitude towards computers became more positive which reflects positively on Internet banking acceptance. It is suggested that more well-educated respondents’ had greater confidence in using computers which led them to achieve a high computer self-efficacy and less computer anxiety.

The findings support previous research which links users' educational level and acceptance of new technology to users' attitude towards advanced technologies (e.g. Chu, 2003; Jashapara and Tai, 2006; Kang and Yoon, 2008). Table 7.18 summarises the levels of significance of the differences between educational level sub-groups according to respondents’ attitude towards computers average construct.

<table>
<thead>
<tr>
<th>Educational Level Subgroups</th>
<th>School Certificate</th>
<th>Diploma Degree</th>
<th>Bachelor Degree</th>
<th>Master Degree</th>
<th>PhD Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Certificate</td>
<td>NS</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Diploma Degree</td>
<td>P &lt; 0.05</td>
<td>NS</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td></td>
<td></td>
<td>NS</td>
<td>P &lt; 0.005</td>
<td></td>
</tr>
<tr>
<td>Master Degree</td>
<td></td>
<td></td>
<td></td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>PhD Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NS</td>
</tr>
</tbody>
</table>

NS = Not Significant
• Trust

The Post-Hoc tests were applied and the results demonstrated that significant differences were found between educational level sub-groups (see Table 7.19). The finding illustrated that postgraduate respondents' placed more trust in Internet banking than those respondents' who obtained school certificate and diploma degree. Bachelors' degree holders were more likely to trust the use of Internet banking than those with a school certificate and diploma holders and less than the postgraduate respondents'. Thus, trust seems to be salient for less well-educated respondents' (see Table 7.12).

In addition, the parametric test finding regarding trust supports previous researchers (e.g. Kolsaker and Payne, 2002; Corritore et al., 2003; Siegrist et al., 2005) who clarified that better-educated individuals place more trust in Internet banking compared to less-educated individuals. Table 7.19 summarises the significant differences between the educational level sub-groups according to trust average construct.

| Table 7.19 Significant differences between educational level sub-groups and trust |
|---------------------------------|-------------------------------|----------------|----------------|----------------|----------------|
| Educational Level Subgroups     | School Certificate Degree    | Diploma Degree  | Bachelor Degree| Master Degree  | PhD Degree     |
| School Certificate              | NS                            | P < 0.005       | P < 0.001      | P < 0.001      |                |
| Diploma Degree                  |                               | P < 0.05        | P < 0.001      | P < 0.001      |                |
| Bachelor Degree                 |                               | P < 0.001       |                |                |                |
| Master Degree                   |                               |                |                |                |                |
| PhD Degree                      |                               |                |                |                | NS             |

NS = Not Significant
7.3 Summary and Integration of Findings

The previous sections were designed in order to evaluate the research conceptual framework, which was suggested by the literature review. Accordingly, the parametric statistical tests were applied to determine the effect of the model moderators on the relationship among the model constructs. Table 7.20 summarises the main findings that have been reached from the inferential statistical analysis with regards to the research conceptual framework.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Expectancy</td>
<td>Effect negatively for older with less educated qualifications</td>
</tr>
<tr>
<td>Effort Expectancy</td>
<td>Effect negatively for older females with less educated qualifications</td>
</tr>
<tr>
<td>Facilitating Conditions</td>
<td>Effect negatively for older with less educated qualifications</td>
</tr>
<tr>
<td>Culture</td>
<td>Effect negatively for older with less educated qualifications</td>
</tr>
<tr>
<td>Attitude towards Computer</td>
<td>Effect negatively for older females with less educated qualifications</td>
</tr>
<tr>
<td>Trust</td>
<td>Effect negatively for older with less educated qualifications</td>
</tr>
</tbody>
</table>

With reference to previous results, it can be noted that there are a set of points of interest. These points must be highlighted for further analysis in order to reach to a final model. The following points illustrate the most important points that require additional analysis to ensure that the research model is valid and reliable.

Firstly, the results illustrated that gender affects two constructs: effort expectancy and customers' attitudes towards using computers. From the
literature and the findings of this research it was found that males tend to be highly task-oriented and more willing to accept and use new technologies when compared to females with respect to all the constructs included in the model (e.g. Venkatesh and Morris, 2000; Durndell and Haag, 2002; Venkatesh et al., 2003; Siegrist, et al., 2005; Bandyopadhyay and Fraccastoro, 2007; Meelissen and Drent, 2008).

Secondly, concerning to the age moderator, the results showed that there were significant differences between age sub-groups with regard to acceptance and use of Internet banking. This is because with increasing age behavioural intentions towards the acceptance and usage of Internet banking became more negative. Generally this is in agreement with the findings of Venkatesh et al. (2003), Liu et al. (2005), Wang and Emurian (2005), Bandyopadhyay and Fraccastoro (2007), Friertag and Berge (2008), Dinev et al. (2008) and Kang and Yoon (2008). However, the results showed that there was no significant difference between the respondents’ aged less than 20 years and other age subgroups for performance expectancy and culture constructs. That means the respondents’ aged less than 20 years and older respondents’ had the same opinions with regard to the performance expectancy and culture. This may be because these respondents’ were students and were controlled by their parents.

Thirdly, based on the previous findings the three moderators (gender, age and educational level) have a direct impact on the six independent constructs
(performance expectancy, effort expectancy, facilitating conditions, culture, customers’ attitude towards computers and trust). Thus, it is important to identify the relationship between these moderators, constructs and the respondents’ behavioural intentions towards the acceptance and use of Internet banking.

In the next part of this chapter, the initial model will be examined using AMOS software to examine the initial model constructs and moderators. These procedures are designed to develop a model of Internet banking acceptance in the Sultanate of Oman (which may be generalizable to other countries that have a similar culture to the Sultanate of Oman). In the process, a number of different models were compared and the final one, which has the best fit to the data, is presented.

7.4 Part Two – Inferential Statistical Analysis Using CFA

In this part of the chapter the goodness of fit of the initial model will be analysed against the collected data. This is done by employing the CFA (see Figure 7.3). Generally, CFA is used when researchers have prior knowledge of the existence of a number of latent variables. Thus, CFA tests whether a particular factors influences responses in a predicted way (DeCoste, 1998). Therefore, the main point of interest in this case is the correlation and regression structure paths in the initial model constructs. Correlation coefficients and regression
between the initial model constructs and moderators was determined (see Figure 7.2).

![Figure 7.2 Correlations and regressions between the initial model constructs and moderators](image)

With reference to figure 7.2 it can be seen that the numbers against the double-headed arrows are the correlation coefficients between the proposed model constructs and the moderators. The numbers against the nine single-headed arrows are the regression weights which indicate that the correlation coefficient between the constructs and moderators were inconsistent. This is because in some cases the correlation coefficients were positive while in other cases they were negative. Moreover, the correlation coefficient values were very different and ranged between 0.8 and -0.03. This indicates that relationships between the initial model constructs and moderators were contrasted, as there were strong relationships between some constructs and moderators (e.g. 0.8), there were weak relationships between other constructs and moderators (e.g. -0.03).
Furthermore, the regression between the initial model constructs and the behavioural intentions were relatively low. To develop an Internet banking acceptance and use model for the Omani context, the regression values between the behavioural intentions construct and the other model constructs and moderators should be close to one. With regard to the initial model, the regression values between the constructs and behavioural intentions were considered as being very low. The results showed that the most important constructs predicting the respondents' behavioural intentions towards the acceptance and use of Internet banking were performance expectancy (0.25), effort expectancy (0.22) and trust (0.21), while customers attitude towards computers (0.18) and facilitating conditions (0.10) although the regression coefficients for each construct were very low. Moreover, the regression values of the model moderators and behavioural intention were extremely low, as they ranged between 0.03 and -0.01.

These results illustrate that the influence of each construct and moderator towards the behavioural intentions was relatively small. Therefore, the previous findings do not help in developing an Internet banking acceptance model that can be applied in the Sultanate of Oman. This led to implementation of inferential statistical analysis by employing the CFA measurement to identify the ability of pre-selected model factors to fit with the collected data set. The model was tested using a range of statistical indices as there was no single index can be considered as a definitive interpretation of model fit. The researcher followed
the advice of several scholars in providing a range of measures on which to judge models (e.g. Marsh, Hau and Grayson, 2005). In addition, to an absolute fit measure ( ), which has several shortcomings including sensitivity to sample size and model complexity, the researcher used several additional statistics on which to judge model fit. The Confirmatory Fit Index (CFI) and the Tucker-Lewis Index (TLI) were included as relative fit measure and the root mean square error of approximation (RMSEA) as a non-central measure of the distribution. CFI / TLI values of ≥ 0.90 are considered as indicative of adequate model fit and ≥ 0.95 of a good model fit, and RMSEA values of ≤.08 as indicative of an adequate model and ≤. 05 as indicative of a good model fit.

The CFA results showed that the six model constructs are not independent (see Figure 7.3). Therefore, these constructs are dependent and they collectively constitute one independent main construct which has been named Attitude Towards Internet Banking (ATIB). The Tucker-Lewis Index (TLI = 0.963) and Comparative Fit Index (CFI = 0.960) showed that the results were statistically good as they were ≥ 95. Meanwhile the Chi-square (130.41) had a high value although this is to be expected with the large sample size and Root Mean Square Error of Approximation (RMSEA = 0.015) statistically was good, as it was ≤ 0.05. Moreover, the standardized regression weights between the ATIB (independent construct) and the initial model constructs (dependent constructs) were statistically significant, as values ranged between 0.90 to -0.80. Based on the CFA results further inferential statistical analysis is required in order to develop a validated Internet banking acceptance model. Therefore, structural
equation modelling (SEM) was applied. Figure 7.3 presents the CFA results and demonstrates the standardized regression weights for each construct.

Figure 7.3 Confirmatory factor analysis results
Chapter Seven: Modelling Internet Banking Acceptance and Use in the Omani Context

7.5 Part Three - Structural Equation Modelling

Based on the CFA results SEM was applied to the evaluation of the initial model. 54 questionnaire statements were tested to evaluate the initial model and identify the main factors that impact on bank customers' behavioural intentions towards the acceptance and use of Internet banking with the presence of the three model moderators (gender, age and educational level).

The results confirmed that the six proposed model constructs (Performance Expectancy, Effort Expectancy, Facilitating Conditions, Culture, Customers Attitude towards Computer and Trust) were not independent constructs and were integrated in one independent construct ATIB. In this case, the regression weight between the ATIB and the respondents' behavioural intentions was 0.89 which is considered a high positive influence as it is close to one. Figure 7.4 presents the relationship between the new independent construct including its component constructs and the respondents' behavioural intentions.
In this context, the SEM examined the three demographic moderators and the results indicated that gender, age and educational level directly affect the new main factor ATIB, as according to the initial model the moderators affect the relationship between the constructs and behavioural intentions towards the acceptance and use of Internet banking. In this regards, the moderators (gender, age and educational level) directly affect the new independent construct ATIB towards the bank customers’ behavioural intentions to accept and use Internet banking. Furthermore, the study variables were entered as ordinal, since Arbuckle (2010) explained that in AMOS software the variables can be entered as ordinal or nominal. Figure 7.5 presents the SEM.
The modified model fit indices (Chi-squared = 2.455; df 2.00; P = 0.293; TLI = 0.998; CFI = 1.000 and RMSEA = 0.019) show that these findings are statistically acceptable and imply that the initial model was unacceptable. This may due to the culture of the Omani society, as the proposed model was designed based on the UTAUT model which was developed by Venkatesh et al. (2003) in the USA one of the developed countries. Thus, the main different between the two model considered as statistical differences which related to the differences between the developed and developing countries with regard to technology acceptance. Similarly, several studies (Slowikowski and Jarratt,
1997; Png et al., 2001; Levy, 2007) clarified that the culture is one of several elements that impact the perception, adoption, understanding, acceptance and usage of new technology. Additionally, bank customers’ behavioural intentions towards the acceptance and use of Internet banking is significantly predicted by attitude towards Internet banking. The regression weight in this case is 0.89 which is an acceptable ratio, as it is close to one. In addition, 78% of the variance in behavioural intentions is explained by significant attitude towards Internet banking main factor variance of 43%.

With regards to the demographic moderators, the modified model suggested that the variables affect the ATIB directly. Therefore, from figure 7.5 it can be seen that the standardised regression weights for gender, age and educational level are -0.13, -0.4 and 0.43 respectively. These regression weights indicate that females and older bank customers have a negative attitude towards Internet banking, while well-educated customers have a positive attitude towards Internet banking. Moreover, the correlation between the moderators seems to be low as the three moderators are independent and do not interact.

Finally, AMOS software assumes that all data is parametric but ordinal data may be used if it has a minimum of five categories, thus, the gender moderator which had been entered as independent variable strictly is not a permissible variable in AMOS as nominal with two categories. However, as shown in the Table 7.21, gender is not affecting the model fit.
The model still shows an excellent fit to the data with the omission of gender for no being a parametric variable as a required assumption for structural equation modelling which is not surprising as it has already been shown in Table 8.3 that gender does not have an appreciable impact on acceptance of internet banking. The model shown is with gender for completeness of the argument that has run through the analysis.

### 7.6 Analysis of the open-ended question

The questionnaire was designed to give the respondents' the opportunity to express their opinion, perception and suggestion on Internet banking by presenting one optional open-ended question at the end of the questionnaire (see appendix 4 and 5). A number of 193 respondents answered this section. However, for the sake of content analysis the answers to this section were classified into two areas. The first area related to the respondents' problems and constraints associated with Internet banking, meanwhile the second area related to the respondents' suggestions for the improvement of Internet banking in the Sultanate of Oman.
• Problems and Constraints of Using Internet Banking

The Omani bank customers identified the problems and constraints they had encountered by using Internet banking. Of the respondents, 87.4% explained that security and trust was an important constraint either before or after the acceptance of the Internet banking. This is because the respondents' did not feel secure as they worried that, through the Internet, their personal information could be seen by unauthorized persons. More than two thirds of the respondents (67%) thought that the lack of high-speed Internet services led the respondents' to be fear of using Internet banking in anticipation of the interruption of service at any moment, which could cost them a lot of money especially if they completed a transaction more than once.

In addition, from the respondents 61.2% thought that a limited level of income does not encourage them to use Internet banking. Approximately 60% of the respondents believed that the difficulty of use was one of the main problems and constraints. For example, some respondents had used the system in the past but with updates of Internet banking website, they had stopped using the Internet banking as they found it too complicated. Of the respondents 50% made it clear that Omani banks offered very limited Internet banking services. For example, checking account balance and viewing and printing the account transaction history were the main services that Omani banks offered through the Internet, and other on-line services are there but it not active. Furthermore,
some of foreigners who used the Internet banking in their countries confirmed that the Internet banking services in Oman was very limited compared with Internet banking services in their countries.

Availability of facilitating conditions was important even after the acceptance of Internet banking. Approximately half of the respondents' (49.8%) explained that they stopped using the on-line services because of lack support of customers' services, as they faced with some difficulties when they used the system but unfortunately they could not find anyone to help them from the bank, so they stopped using Internet banking. Of the respondents, 48.2% explained that limited computer skills were a major obstacle to the acceptance and use of Internet banking. Furthermore, 45.7% of the respondents explained that it took a long time for banks to respond to their enquiries, especially those related to usernames and password. Respondents believed that banks did not pay enough attention to customer needs in relation to Internet banking as banks focused more on traditional banking services.

A third of the respondents (33.3%) made it clear that a lack of promotion and marketing of Internet banking, led a number of customers not knowing that their banks provided Internet banking services. Meanwhile, 32.7% of the respondents noted that lack of adequate guidance and instructions on how to use Internet banking affected negatively their acceptance and use of Internet banking. Finally, few respondents (9.3%) explained that lack of knowledge
regarding the mean of electronic commerce in the Omani society, affected negatively the acceptance of Internet banking.

- **Suggestions for Improvement of Internet Banking**

The respondents proposed a number of suggestions for improving Internet banking services in the Sultanate of Oman. Concerning to trust in Internet banking, 87.8% of the respondents explained that the Omani banks should build an effective protection system in order to increase customers' trust in Internet banking. In addition, 84.7% of the respondents made it clear that the Omani banks should make sure that the system is easy to use. Therefore, Omani banks have to take into account that their Internet website has to be easy to use and understand.

Some respondents (55.2%) suggested that the existence of an independent online customers service department is necessary, to take care of on-line customer enquiries with regard to Internet banking and provide customers with the requirements training to start using Internet banking. Meanwhile, of the respondents 37% suggested that the Omani government and banks should collaborate in order to implement a special law for Internet banking which would identify the rights and responsibilities of Internet banking providers and users. Moreover, it would clarify the penalties for people who are tempted to manipulate the accounts of other customers without obtaining prior permission. Finally, few respondents (13.1%) suggested that the Omani banks should have
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promotion on Internet banking services which could positively influence bank customers to accept and use Internet banking.

7.7 Summary

This chapter focused on inferential statistical analysis. The chapter was designed to evaluate the initial model, which was suggested by the literature review and tested in the first part of this research study (Chapters 3 and 6). Accordingly, the analysis started with preliminary statistical analysis for the average constructs which was implemented through the parametric statistical tests. The results demonstrated that gender, age and educational level moderators affect the six independent constructs. The following points summarize the most important results.

- Older respondents' who obtained a lower educational level either males or females disagreed that Internet banking is useful and effective (performance expectancy).
- Older females with a lower educational level disagreed that Internet banking is easy to use (effort expectancy).
- Older respondents' who obtained a lower educational certificate either males or females disagreed that the Omanis banks offered the necessary assistance for those who use or are willing to use Internet banking (facilitating conditions).
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- Older respondents' who obtained a lower educational level, either males or females, agreed that their intention to accept and use Internet banking was affected by others opinions (culture).

- Older females with lower educational level agreed that their computer experience affected their intentions towards the acceptance and use of Internet banking (customers attitude towards computers).

- Older respondents' who obtained a lower educational degree either males or females had made it clear that it is difficult for them to trust in Internet banking, and they preferred to deal with traditional banking services (trust).

The second and third parts of this chapter focused on the initial model evaluation, which was implemented through the measurement model evaluation and structural equation modelling. With regards to the measurement model evaluation, CFA was applied and the results showed an inconsistent correlation between the model constructs and moderators. Thus, the CFA results explained that the six model constructs are not independent constructs and collectively constitute one independent main construct named attitude towards Internet banking.

SEM was implemented and the findings confirmed that the six dependent constructs integrated into one independent construct named ATIB and the three demographic moderators (gender, age and educational level) directly affect the
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ATIB independent construct towards the bank customers’ behavioural intentions to accept and use Internet banking.

Analysis of the open-ended question at the end of the questionnaire was classified into two areas. The first area presented the respondents’ problems and constraints related to Internet banking; the second area presented the respondents’ suggested for improvement of Internet banking services in the Sultanate of Oman. The following chapter will collate and discuss all the research study findings and review the research objectives and research questions. In addition, research contributions, limitations, and suggestions for future research will be outlined.
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8.1 Introduction

This chapter discusses the results and draws the research study to a conclusion on the adoption and acceptance of Internet banking in the Sultanate of Oman. Section 8.2 discusses the research key findings by discussing the Omani banks' situation in relation to Internet banking and compares the research model (Internet banking acceptance and usage in the Omani context) developed in this study with the UTAUT model. Section 8.3 reviews the research study objectives and presents the answers to the research questions. Section 8.4 outlines the contributions of this study to theory and practice. Section 8.5 presents the research limitations. Section 8.6 identifies opportunities for future research. The chapter concludes with the researcher's final thoughts and reflections on the research process (section 8.7).
8.2 Discussion of Thesis key Findings

The aim and primary objectives of this research study was to investigate the adoption and acceptance of Internet banking in the Sultanate of Oman and develop a model of customers' acceptance of Internet banking. To achieve the research aim and objectives the study went through a number of steps. Firstly, a critical review of literature was undertaken on banking industry development and Internet banking adoption (see chapter 2). Secondly, a critical review of literature on different technology acceptance models was undertaken in order to develop a research conceptual framework (see chapter 3). Thirdly, analysis of bank documents and Omani bank websites were implemented to obtain information to enhance the fourth step (see chapter 5). Fourthly, fourteen in-depth semi-structured interviews were conducted with Omani bank managers to determine their understanding of Internet banking and identified the main barriers that faced them in the early stages of the adoption of Internet banking (see chapter 5). In addition, the interviews determined bank managers' perspectives about the main factors that affect their customers' acceptance of Internet banking, through their evaluation of the conceptual framework (see chapter 6). Fifthly, based on the interview findings a comprehensive questionnaire was designed to test the initial model (611 respondents), in order to identify the key constructs that affect Omani bank customers' behavioural intentions towards the acceptance and use of Internet banking (see chapters 7). Finally, statistical analysis was applied in order to develop a model of Internet
banking acceptance in the Omani context (see chapter 7). Figure 8.1 outlines the process of developing a model of Internet banking acceptance and use in the Omani context.

8.2.1 Omani Commercial Banks Situation in Relation to Internet Banking

Based on the analysis of data collected through bank document analysis, bank websites overviews and in-depth discussions with local bank managers through fourteen semi-structured interviews (see chapter 5); the results indicate that the Omani banking industry improved and developed during the last decade to cope with global developments and competition. In this regard, global developments in banking services depended mainly on technology development. Thus, Omani banks paid great attention to customer satisfaction. They strived to provide their
customers with advanced and appropriate banking service through different banking channels, electronic and non-electronic, so customers could choose the channel that best suited them.

The Omani bank managers had a clear understanding of the meaning and importance of electronic banking. They have a positive attitude towards adopting, implementing and providing their customers' with new banking services, such as Internet banking. They defined electronic banking as a hub, which included all types of self-service technologies that allowed customers to complete their bank enquiries and transactions at any time during the day without visiting their bank branch. Whilst, Omani banks were eager to adopt electronic banking, they were still continuing to develop their traditional banking system by opening branches in all parts of Oman, the number of bank branches in Oman had increased by 32% between 2006 and 2010 (Central Bank of Oman, 2011).

Additionally, the Omani bank managers were aware of the difference in meaning of the concept of electronic banking and Internet banking. The Omani bank managers' defined Internet banking as an electronic banking function that allowed customers to complete their account enquiries and transactions alone through the bank's website at any time of the day or night (24/7). Thus, there were clear understandings of the importance of electronic banking in general and Internet banking in particular in the Omani banking Industry.
The Omani commercial banks faced a number of barriers in the early stages of Internet banking adoption. These barriers were classified into *internal barriers* which related to the bank management and *external barriers* which included customers' behaviour, culture, government, technology and trust (see Table 5.3). This study indicates that these internal and external barriers pose challenges for Omani banks improving their systems or adding new on-line services. Therefore, the Omani banks need to develop a strategy to cautiously monitor these barriers to maintain a strong relationship with their customers which reflected positively on customer satisfaction.

### 8.2.2 Comparison of the Research Model (Internet Banking Acceptance and use in the Omani Context) with the UTAUT Adopted Model

The UTAUT model was adopted in this research as the theoretical basis to understand the Omani bank customers' behaviour towards the acceptance and use of Internet banking. According to Venkatesh *et al.* (2003), the UTAUT theory determines users' behavioural intentions towards the acceptance and use of new technologies which are jointly determined by four constructs (performance expectancy, effort expectancy, social influence and facilitating conditions) and four moderators (gender, age, experience and voluntariness of use). To apply this model in the Sultanate of Oman, some modifications took place in order to explore the main factors that affect Omani bank customers' behavioural intentions to accept and use Internet banking (see chapter 3).
The research conceptual framework was tested through two stages: firstly with the Omani bank managers; secondly with bank customers. The Omani bank managers agreed that the model covered almost all the main constructs that affected their customers’ intentions towards the acceptance and use of Internet banking. They commented on the voluntariness of use moderator as they believed that accepting and using Internet banking was voluntary. Although Omani culture was considered as being high power distance and collectivist culture, the decision to use the Internet banking belonged to the customer. Moreover, the bank managers explained that banks cannot force their customers to accept and use Internet banking because the service is new and customers could easily shift their account to another bank, especially since in the Omani banking industry there were (at the time of this study) still some banks which had not adopted Internet banking. Thus, Internet banking in the Omani context could not be considered mandatory.

Based on the interview findings the voluntariness of use moderator was removed from the proposed model (see Figure 6.1 the initial model) and the study questionnaire was designed to verify the initial model. 1000 questionnaires were distributed to Omani bank customers. 731 questionnaires were received back and 611 questionnaires were accepted for analysis. The statistical analyses consisted of three stages: preliminary statistical analysis, inferential statistical analysis using CFA and structural equation modelling. The findings illustrated that the six independent constructs (performance
expectancy, effort expectancy, facilitating conditions, culture, customers' attitude towards computers and trust) were dependent constructs which were integrated in the ATIB independent construct. The ATIB construct influenced bank customers' behavioural intentions towards the acceptance and use of Internet banking. The three demographic moderators (gender, age and educational level) moderated the ATIB construct directly. Figure 8.2 outlines the model of Internet banking acceptance in the Omani context.

Figure 8.2 Model of Internet banking acceptance and use in the Omani context

Generally, there were similarities between the research findings in this study and the findings of Venkatesh et al. (2003) who presented the UTAUT model, except in terms of the interpretation of the statistics. In the UTAUT model the main constructs (performance expectancy, effort expectancy, social influence and facilitating conditions) influenced users' behaviours independently, whereas
in this study one independent construct ATIB comprising six dependent constructs (performance expectancy, effort expectancy, facilitating conditions, culture, customers’ attitude towards computer and trust) influenced bank customers’ behavioural intentions towards the acceptance and use of Internet banking. The differences between the UTAUT model and the study model are:

- The UTAUT model was developed as a technology acceptance model, while this study’s model considered only Internet banking acceptance.
- The UTAUT model was developed in a developed country (USA), whereas this study’s model was developed in a developing country (Sultanate of Oman) where the nature of the technology acceptance is totally different.
- Generally culture plays a significant role in the acceptance of technology and so the differences between the two models are likely to be due mainly to differences in culture. Oman is a country which has been classified as rich in traditional cultural values.
- Difference in the time period between the two studies. During the eight years following development of the UTAUT model many changes have occurred in relation to technology and technology acceptance.
- The statistical methods used in this study were more sophisticated than the statistical methods used by Venkatesh et al. (2003). In this study the CFA and SEM were applied.
- Statistical differences between the two models may relate to the nature of Internet banking in Oman. This is because, Internet banking is a new
banking service in Oman. Thus, Bank customers had not determined Internet banking benefits. Moreover, The Omani banks were still continuing to enhance their traditional banking systems by opening branches across Oman.

8.2.3 Implications of the Study Model for Practice

Besides the development of a model of Internet banking acceptance in the Omani context, the implications of this model in practice is required. Statistically there was no difference between male and females towards the acceptance and use of Internet banking except significant differences were found with regards to the effort expectancy and customers’ attitude towards computers constructs. The findings showed that females’ found Internet banking complicated and their attitude towards computers was negative compared with males. In addition, older customers’ (aged more than 40 years) were more interested in traditional banking than Internet banking, as they preferred to deal with the bank staff to complete their account enquiries and transactions. This may be due to their low level of education, as customers’ with low educational level is less willing to accept and use Internet banking. These are acceptable findings as since 1970, under the guidance of His Majesty Sultan Qaboos bin Said, Oman has evolved into a modernised country where health care and education are considered to be basic requirements for human life (Ministry of Information, 2008). Indeed, it should be noted that customers’ aged less than 20 years are willing to accept and use Internet banking, but they are still under their parent’s supervision and
therefore their decisions are influenced by their parents, which reflects on their actual use of the system. Table 8.1 summarizes the model implications of Internet banking acceptance in the Omani context.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Category</th>
<th>Study Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Males</td>
<td>Generally there is no difference between male and female usage of Internet banking except that females found Internet banking complicated. Their attitude towards computers was negative compared with males.</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Less than 20 years</td>
<td>Generally customers aged less than 40 years are more likely to accept and use Internet banking. Compared to older customers who prefer traditional banking systems.</td>
</tr>
<tr>
<td></td>
<td>20 - 30 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31 - 40 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>41 - 50 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>51 - 60 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More than 60 years</td>
<td></td>
</tr>
<tr>
<td>Educational Level</td>
<td>School Certificate</td>
<td>More-educated customers who obtained bachelor and postgraduate degrees are more able to accept and use Internet banking. Compared to less-educated customers who believe that Internet banking system is complicated and difficult to interact with.</td>
</tr>
<tr>
<td></td>
<td>Diploma Degree</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bachelor's Degree</td>
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<td></td>
<td>Master's Degree</td>
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<tr>
<td></td>
<td>PhD Degree</td>
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</table>

8.3 Review of Research Objectives

According to this study, five research objectives were set in order to investigate the adoption and acceptance of Internet banking in the Sultanate of Oman (see section 1.5). In particular, the research objectives were classified into two categories theoretical and practical. Objective one was a theoretical objective, whereas the other four objectives were practical. In order to achieve the practical objectives three methods were used: analysis of bank documents and
Omani bank websites, in-depth semi-structured interviews with Omani bank managers and self-administered comprehensive questionnaire survey with bank customers. Figure 8.3 summarizes the theoretical and practical objectives.

**Figure 8.3 Summary of the theoretical and practical objectives**

### 8.3.1 Objective One

**Conduct a critical review of relevant literature related to the Internet banking in general and its acceptance.**

The theoretical research objective was met through undertaking a critical analysis of relevant literature and similar studies on Internet banking adoption and acceptance. Reviewing the literature gave a clear understanding of the
Chapter Eight: Thesis Discussion and Conclusion

Internet banking concept and the benefits and barriers that faced banks adopting Internet banking. Moreover, reviewing the different theories of technology acceptance enhanced understanding of technology acceptance and how it can be implemented in the banking industry to measure the acceptance of Internet banking. This theoretical objective was achieved in two chapters. Internet banking concept and the benefits and barriers of Internet banking adoption were presented in chapter two, while chapter three explored technology acceptance models and developed a conceptual framework for the research study.

The literature showed that developed countries have successfully adopted Internet banking, while developing countries faced many difficulties (organization management, customers' satisfaction, society culture, government support, technology challenges and trust). Furthermore, the literature addressed the impact of technology on the acceptance of Internet banking, by exploring the UTAUT model, which comprised eight different technology acceptance theories (Venkatesh et al., 2003). The literature also focused on the main constructs that affected bank customers' behavioural intentions towards the acceptance and use of Internet banking. A critical review of the concepts, issues and theories of acceptance technology revealed in the literature provided the basis for the development of a conceptual framework to adopt and accept Internet banking in the Sultanate of Oman (see Figure 3.11).
8.3.2 Objective Two

Explore Omani bank managers’ perspectives of electronic and Internet banking and identify the main barriers that have faced Omani banks adoption and implementation of Internet banking services.

This practical objective is linked with answering the first two research questions “What do local bank managers understand by electronic banking in general and Internet banking in particular? What are the main barriers that affected Omani banks in the early stages of Internet banking adoption?.”

The objective was addressed through two research methods. Firstly, bank document and bank websites were analysed in order to identify the Omani bank situation in relation to electronic banking in general and Internet banking in particular. Secondly, fourteen in-depth semi-structured interviews were conducted with Omani bank managers. The seven Omani banks were taken as a single embedded case study to explore their understanding of electronic and Internet banking concepts and explored the main barriers that faced Omani banks at the early stages of Internet banking adoption. This objective was achieved in chapter five. Section 8.2.1 in this chapter outlines a discussion of the main findings of this objective.
8.3.3 Objective Three

Identify the main constructs that influenced bank customers' acceptance and usage of Internet banking from the perspective of both local bank managers and their customers.

This practical objective is linked with answering the third and fourth research questions "What are the main constructs that affect the acceptance of Internet banking from the bank and customer perspectives? Is the model derived from this study suitable for different sub-groups of the demographic characteristics, such as age, gender and education level, and is the use of Internet banking voluntary or mandatory?" In order to achieve this objective, acceptance of Internet banking was investigated through two stages. The first stage involved fourteen in-depth semi-structured interviews with Omani bank managers to identify main constructs that affect their customers' acceptance of Internet banking (see chapter 6). The second stage involved a research survey through comprehensive questionnaire with Omani bank customers to identify the key constructs that affected their behavioural intentions towards the acceptance and use of Internet banking (see chapter 7). A discussion of the major findings of this objective is given in section 8.2.2 in this chapter.
8.3.4 Objective Four

Develop a model of good practice for Internet banking acceptance for bank customers in developing countries such as the Sultanate of Oman.

This practical objective is linked with answering the fifth research question "What constitutes a model of good practice for the acceptance of Internet banking in the Sultanate of Oman?" In order to achieve this objective, statistical analysis was applied to develop a model of Internet banking acceptance and use in the Omani context (see chapter 7). CFA and SEM were used to evaluate the goodness of the initial model. A discussion and the major findings of this objective are given in section 8.2.2 and 8.2.3 in this chapter.

8.3.5 Objective Five

Develop a set of recommendations on how best to encourage the adoption and acceptance of Internet banking services in the Omani banking industry.

This practical objective is linked with the sixth research question "What are the recommendations to improve and enhance Omani bank customers' acceptance of Internet banking in order to shift them from traditional banking to electronic banking systems?.” In order to achieve this objective,
a set of recommendations have been developed based on the interview findings with the Omani bank managers (chapter 5 and 6) and from the statistical analysis regarding the model of Internet banking acceptance and use in the Omani context (chapter 7). The recommendations are addressed to different stakeholders, including: Omani banks, customers and government. These recommendations might help the successful adoption, acceptance and use of Internet banking in the Sultanate of Oman.

(1) Recommendations to the Omani banks

- Ask current Internet banking users about their opinions, needs and preferences for the Internet banking system.
- Pay attention to staff and customer feedback, in order to develop the system and motivate customers to accept and use Internet banking.
- Attract bank customers’ attention to Internet banking by focusing on advanced marketing plans.
- Develop innovative on-line customer support services that work around the clock, to assist Internet banking users and to use suitable salutations in case of technical problems or difficulties using the system.
- Improve the design and navigation of the bank website in general and Internet banking site in particular, in order to keep it easy to use.
- Provide Internet banking services in different languages in order to attract customers to accept and use Internet banking. Thus, banks
should take action regarding this issue and introduce their on-line services in several languages.

- Establish an independent department to take care of on-line customer enquiries and explain to other customers the importance and effectiveness of Internet banking. Moreover, this department could provide training services to customers who were willing to use the system but felt anxious about it. This training could be given to customers either in the bank branch or over the phone.

- Regularly evaluate and review the effectiveness of staff Internet banking training, in order to make sure that bank staff are able to train and support those customers who are using or wish to use Internet banking.

- Encourage customers to shift from traditional to Internet banking by providing on-line banking services free or for a nominal fee.

- Internet banking has to be an active banking channel by providing all traditional banking services on-line.

- Banks should find proper on-line mechanisms to activate Internet banking accounts and issue usernames and passwords without the need for customers to visit their bank branch.

- In case of losing the Internet banking username and passwords, an on-line mechanism has to be available to issue a new username and passwords on the bank website without the need to physically visit the bank branch.

- Give attention to security issues by develop a clear and understandable security plan and publishing it.
Banks should have a proper infrastructure and schedules for Internet backing-up data. Thus, banks should test their back-up systems on a regular basis to ensure that on-line data recovery and that there is no chance to lose any of the data.

Banks should not neglect the acceptance factors that affect customers' behavioural intentions to accept and use Internet banking, as the impact of these factors may extend beyond the acceptance stage in the case of system development.

Closer relationships needs to be built between local Omani banks, Omani bank customers and Omani government to enable local banks to respond to the changing demands in technology development to deliver a high quality of electronic banking in general and Internet banking in particular.

Use formal and appropriate media for marketing Internet banking to clarify the system usefulness and ease of use in order to increase bank customers' awareness of Internet banking.

Reviewing Internet banking marketing plans for banks in developed countries with a view to developing appropriate marketing plans in the Omani banking industry to adopt and accept Internet banking successfully.

Participate in International conferences regard electronic and Internet banking to be acquainted with the appropriate means of adoption and acceptance of Internet banking.
(2) Recommendations to the Omani bank customers

- To have a positive attitude towards Internet banking customers should start using the easiest on-line services, such as account statements and account history. This will help customers to recognize the usefulness of the system.

- Internet banking is considered an easy system to interact with, therefore customers should try learning how to deal with it and in case of some difficulties call on the bank for assistance.

- Internet banking is useful, so customers should try interacting with it and discovering its usefulness and effectiveness.

- Check all the facilitating conditions that are provided to customers on the bank website and make sure that all of these facilities are available and active around the clock 24/7.

- Customers should make sure that the electronic service being used is applicable with his/her needs rather than relying on what friends and family thinks about it, as Internet banking is designed to fulfill an individual's needs.

- For security purposes, customers should not save personal access and authorization details related to Internet banking on their computers.

- Account user name and passwords belong to an individual and should never be passed to another unauthorized person.
Customers should not follow bank hyperlinks in other websites or e-mails but should enter the bank website address manually to ensure security is not breached.

When customer sign-in to their on-line accounts they should make sure that the computer they use is their own or administered only by people they trust and virus protection software is updated.

Feedback about the system is very important for the bank, customers comments are taken into consideration in developing the system and adding new on-line banking services to meet customer requirements.

(3) Government

- Establish a competent authority to take charge of collecting statistical data about the number of Omanis and residents who own computers and have subscriptions to the Internet, identify numbers of active users of Internet and determine the actual users of Internet banking. The availability of these statistical information would help the Omani banks to develop their on-line services and adopt advanced technologies that related to electronic and Internet banking.

- The government represented by CBO should encourage Omani banks to adopt and launch Internet banking to maintain the competitive position of the Omani banking industry.
Chapter Eight: Thesis Discussion and Conclusion

- CBO should study the possibility of banking industry development by issuing new licenses for on-line banks which provide their services through electronic channels only.

- Electronic government in general and Internet banking in particular rely on the availability of Internet connections, therefore the Omani government has to ensure that the Internet covers all regions of the Sultanate.

- Give new licenses to more Internet providers which will impact on the availability, quality and price of the Internet and impact on the acceptance of Internet banking.

- In order to get rid of technology and computer anxiety, the Omani education sector should look into the possibility of automating the education. This will reflect positively on the adoption and acceptance of e-government and Internet banking.

- Omani government and banks to collaborate in order to implement a special low for Internet banking which would identify the rights and responsibilities of Internet banking providers and users.

8.4 Contributions of the Thesis

This section aims to present the research study contributions. Two types of contributions are identified, namely contributions to theory and contribution to practice as discussed in sections 8.4.1 and 8.4.2.
8.4.1 Contribution to Theory

This study is significant as it is the first large scale quantitative study of customers attitudes to Internet banking in the Sultanate of Oman. Previous studies have been qualitative smaller scale studies. This study involved a qualitative stage followed by a quantitative survey of 611 Omani bank customers.

This study contributed to an enhanced understanding of the adoption and acceptance of Internet banking in the Sultanate of Oman, by identifying the main barriers and constructs that impact on the adoption and acceptance of Internet banking. The study has increased understanding of electronic and Internet banking concepts. It also clarified the main barriers that faced banks who are willing to adopt and launch Internet banking. Furthermore, the study has added to the growing technology acceptance literature through its review of previous technology acceptance models and theories. The study confirms that moderators identified in previous technology acceptance models (i.e. gender, age, and educational level) as influencing technology acceptance are relevant to the acceptance and use of Internet banking in the Sultanate of Oman.

A major contribution to knowledge of this study is the conceptual framework for the acceptance and use of Internet banking (see Figure 3.11) which was developed through a critical review of literature on technology acceptance
models and theories with a particular focus on the UTAUT model which was
developed by Venkatesh et al. (2003). Based upon the key findings from the
interviews with the Omani bank managers the conceptual framework was
revised and an initial model appropriate to the Omani context was developed
(see Figure 6.1). The initial model identified three moderators rather than the
four identified in the conceptual framework. The voluntariness of use moderator
was removed from the model as the bank managers explained that Internet
banking in Oman could not be considered mandatory. The initial model was
tested by bank customers and the resultant model makes a contribution by
showing that the six independent constructs were considered as dependent
constructs which were integrated into one independent construct – the ATIB
construct. The ATIB construct influenced bank customers behavioural intentions
towards the acceptance and use of Internet banking and was influenced by
three independent moderators (gender, age and educational level) (see Figure
8.2).

8.4.2 Contribution to Practice

This study contributes to practice in three key areas. Firstly, it identifies the
barriers and difficulties that impacted Omani banks adoption of Internet banking.
These may help other banking industries of developing countries who eager to
adopt Internet banking to overcome with these barriers easily, in order to adopt
Internet banking productively. Secondly, the study offers a model of Internet
banking acceptance and use in the Omani context which identifies the main
influential constructs and moderators that influenced the bank customers' behavioural intentions towards the acceptance and use of Internet banking which was developed through two phases of fieldwork. The first phase involved fourteen interviews with Omani bank managers; the second phase involved a questionnaire survey of 611 bank customers. The model of this study identifies some critical differences between the previous (Western) literature and the Omani context. Therefore, this model will serve as an effective tool to assist banks in other developing countries to identify the main constructs that affect their customers' behavioural intentions towards the acceptance and use of Internet banking. Thirdly, another significant contribution to practice relates to the development of a set of recommendations for three stakeholder groups: Omani banks; Omani bank customers; Omani government. These recommendations if implemented through a set of appropriate strategies would enhance the adoption and acceptance of Internet banking in the Sultanate of Oman, which would in turn help in the successful adoption and acceptance of different electronic banking functions and have wider impacts on new technology adoption in the Sultanate of Oman. Furthermore, these recommendations give assistance to other developing countries to adopt, launch and accept Internet banking successfully.
8.5 Limitations of Thesis

The research study findings that have been discussed earlier provided an enhanced understanding of the Omani bank situation with regard to Internet banking and identified the main constructs that affect Omani bank customers' behavioural intentions towards the acceptance and use of Internet banking. However, the study has some limitations and it is important to discuss them. The study explored the main constructs that affect the acceptance of Internet banking in Omani banks only. Therefore, it would be worth looking at foreign banks operating in Oman (e.g. HSBC Bank Middle East Limited, Standard Chartered Bank, State Bank of India). This is because these banks have been considered good adopters of Internet banking, therefore they may implement certain techniques or strategies to motivate Omani customers to accept and use Internet banking.

In addition, this research study investigated the adoption and acceptance of Internet banking in the Sultanate of Oman by focusing on the seven Omani banks. Therefore, it was worthwhile to compare the situation of Internet banking adoption and acceptance with other banks in other countries or contexts. For example, focusing on the banking industry in a developed country, may give a clear understanding of adoption and acceptance of Internet banking in the Sultanate of Oman.
This study also investigated the adoption and acceptance of Internet banking from the perspectives of two stakeholders, namely Omani bank managers and customers. However, it not explores the government opinions of Internet banking adoption and acceptance. This may give clearer view of the barriers and constructs that affect the adoption and acceptance of Internet banking in Oman, especially since bank managers and customers pointed difficulties that accrue to the government, for example the availability and quality of Internet connections.

The study investigated the adoption and acceptance of Internet banking and considered on bank customers attitude towards the Internet banking. This was implemented through testing the conceptual framework built on UTAUT model (Venkatesh et al., 2003). The actual behavioural use of Internet banking considered to being outside the scope of this study. In addition, as this study used the CFA and SEM statistical methods it would be good if the Venkatesh et al. (2003) data were revisited using the same statistics methods as adopted in this study and the results compared with the results of this study to see if differences between them can be ascribed analytical techniques adopted.

Although independent models constructs have not been verified by the CFA undertaken, a single ATIB construct can provide insights into model relationships. These however would be less powerful than analysis using separate variables as identified through relevant theoretical perspectives.
identified in the previous literature. In addition the moderation effects for demographic factors in the structural model should be treated with some caution as they involve the use of non-metric categorical and ordinal data, which may have led to the unusually high model fit results that have been achieved.

8.6 Opportunities for Further Research

There are further research opportunities that could be developed from this research study as follows:

- More research on the adoption and acceptance of Internet banking in Oman, through looking at the foreign banks operating in Oman, which may give a clearer understanding of the adoption and acceptance of Internet banking in Oman, especially that some of these banks belong to developed countries that have adopted Internet banking successfully.
- The study model should be tested in other developing countries with a similar background to Oman, especially those countries that have similar culture, such as the Gulf Cooperation Council (GCC) countries.
- Further research should be conducted to compare Oman’s case with one of the developed countries. This is to provide a clear understanding of the right and suitable ground in how best to use the technology in Oman banking industry.
Further research can be conducted to investigate in-depth Omani government views and attitudes towards the adoption of Internet banking. This is because the findings of this study clarified that the government did not encourage the Omani banks to adopt and launch the Internet banking. In addition, the lack of Internet coverage across Oman accrues to the government, on the grounds that it owns and controls the country telecommunications sector.

The research findings showed that level of income influences the acceptance of Internet banking. However, in-depth research could be conducted to measure the influence of level of income as a new moderator in addition to the previous three moderators (gender, age and educational level) that affect the ATIB construct.

Re-test Venkatesh et al. (2003) data by using CFA and SEM statistical methods that adopted in this study and the results compared with this study to see if differences between them can be ascribed to the analytical techniques adopted.

8.7 Personal Reflections

A PhD is something that I have always wanted to achieve not only because of its importance to me as an academic but also because it will be an achievement for me and my family. This will provide me with confidence and make my family proud. My research journey has provided me with many experiences. I have learned how to be more patient and cooperative with others. During my study
period I have met many people who created a space in my heart. An experience that will not be repeated again; therefore I will make sure to keep in touch with those people for the rest of my life. I know that no matter how good is your research it will never be perfect and there will be always a gap for further research. The research experience has developed my knowledge of critical thinking, as every moment in my life and every word I read improves my knowledge. Thus, I will be pleased to share the knowledge which I obtained with my colleagues and students when I return to my role as a lecturer in Higher College of Technology in Muscat.

This thesis is the culmination of a four year study attempting to investigate the adoption and acceptance of Internet banking in the Sultanate of Oman. The study has allowed me to explore a number of issues linked to technology acceptance in general and Internet banking acceptance in particular. My intention is to provide stakeholders (Omani banks, customers and government) with a clear understanding of the importance and effectiveness of Internet banking. In this regard, I hope that Omani banks and government will do their best to provide bank customers with what is required in system terms and the necessary encouragement to accept and use the Internet banking. Customers also have to take into consideration the importance of using advanced technology in various sectors and particularly in their bank enquiries and transactions. In addition, I hope that the results of this research provide academic researchers with an appropriate basis for further research in relation
to the adoption and acceptance of Internet banking, especially in developing countries similar to the Sultanate of Oman.
REFERENCES
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<th>References</th>
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References


References


References


APPENDICES

Appendix One  Descriptive Statistical Analysis  A – 2
Appendix Two  Interview Form With Bank Managers  A – 25
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APPENDIX ONE

DESCRIPTIVE STATISTICAL ANALYSIS

The appendix focuses on the descriptive statistical analysis of data in the 611 usable questionnaires using SPSS statistical software version 17.

1. Demographic Profiles of Respondents

This section presents the respondents' demographic profiles identifying gender, age, education level, occupation and nationality (see Table 1).

<table>
<thead>
<tr>
<th>Table 1: Respondents Demographic Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic Variables</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Less than 20 years</td>
</tr>
<tr>
<td>20 – 30 years</td>
</tr>
<tr>
<td>31 – 40 years</td>
</tr>
<tr>
<td>41 – 50 years</td>
</tr>
<tr>
<td>51 – 60 years</td>
</tr>
<tr>
<td>More than 60 years</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>School Certificate</td>
</tr>
<tr>
<td>Diploma</td>
</tr>
<tr>
<td>Bachelor Degree</td>
</tr>
<tr>
<td>Master Degree</td>
</tr>
<tr>
<td>PhD Degree</td>
</tr>
<tr>
<td>Occupation</td>
</tr>
<tr>
<td>Student</td>
</tr>
<tr>
<td>Self-employed</td>
</tr>
<tr>
<td>Employee in the Private Sector</td>
</tr>
<tr>
<td>Employee in the Government Sector</td>
</tr>
<tr>
<td>Retired</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Nationality</td>
</tr>
<tr>
<td>Omani</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

The table shows that 60.1% of the respondents were males; while 39.9% were females. According to the respondents' age, the largest age sub-group in this
study sample consisted of those aged 20 – 30 years who accounted for 30%, followed by the age group 31 – 40 years (27.2%). Of the respondents, 18% were aged between 41 – 50 years and 13.6% were between 51 – 60 years. The smallest groups of the study sample belonged to those aged less than 20 years (5.7%) and those were more than 60 years old (5.6%). Regarding education levels, the majority of the respondents were bachelor degree holders (30.8%). Moreover, 27% of the respondents’ had acquired a professional diploma and 23.1% had school certificates. The remaining 19.2% of the respondents had postgraduate university education, 15.4% of them had Master degrees and 3.8% had a PhD degree.

In terms of respondent occupations, the largest group were employed in the government sector (37.5%) and the second largest group were employed in the private sector (33.7%). Moreover, 9.5% were self-employed; 9.2% were students. Of the respondents, 8.2% were retired and only 2% were classed as others (e.g. housewife). The nationality of respondents indicated that 89.7% were Omanis and 10.3% were others (e.g. American, Europeans and Indians).

2. Banking Experience of Respondents

This part identifies the banking experience of the respondents, by identifying the respondent’s bank, his/her most frequent bank visits, the bank location, use of electronic banking functions, availability of bank website and Internet banking and finally whether the respondent used Internet banking services. The data
presented in Table-2 shows that most respondents' (93.3%) had their main bank account in one of the Omani banks and only 6.7% dealt with foreign banks.

With regard to how often bank customers visited their bank branches, the results show that 38% preferred to visit their bank once a month; while 31.4% visited their bank branches annually. Some respondents (15.9%) visited their bank once a week to complete their bank transactions. 5.4% of the respondents visited their banks few times a week, 5.2% do not visited their bank for different reasons and 4.1% visited their bank branches daily. Furthermore, more than half of the sample (54.5%) visited their banks in order to complete their account transactions in Muscat; while 45.5% visited their banks in various regions.

Regarding using the electronic banking functions almost all the respondents' (97.1%) used the ATM, 38% managed their account transactions through telephone banking. Moreover, 36.3% of the respondents had used the CDM rather than visiting their banks to deposit money. Some respondents (33.9%) had dealt with the mobile (SMS) banking, 19.3% had used Internet banking and 16% dealt with the web banking. Two different electronic banking functions (home banking and television banking) were not in use in Oman at the time of this study. It could be noted that the Omani bank customers accepted a range of electronic banking functions.
Each of the banks in Oman had their own websites and about three quarters of the sample (75.6%) knew that their banks had a website whereas 24.4% did not know. Moreover, approximately half of the respondents (55.5%) knew that the bank they dealt with offered Internet banking services and only 36.3% of the respondents did not know that their bank provided Internet banking services. On the other hand, 8.2% of the respondents mentioned that their banks did not offer Internet banking services. Finally, from the study sample’s 611 respondents (19.3%) only used the Internet banking services; whereas 80.7% did not accept and use Internet banking.
Table 2: Respondents banking experience

<table>
<thead>
<tr>
<th>Banking Experience</th>
<th>Research Sample (n = 611)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td><strong>Bank Account</strong></td>
<td></td>
</tr>
<tr>
<td>Ahli Bank</td>
<td>59</td>
</tr>
<tr>
<td>Muscat Bank</td>
<td>171</td>
</tr>
<tr>
<td>Dhofar Bank</td>
<td>59</td>
</tr>
<tr>
<td>Oman Arab Bank</td>
<td>66</td>
</tr>
<tr>
<td>Oman International Bank</td>
<td>92</td>
</tr>
<tr>
<td>National Bank of Oman</td>
<td>70</td>
</tr>
<tr>
<td>Sohar Bank</td>
<td>53</td>
</tr>
<tr>
<td>Other</td>
<td>41</td>
</tr>
<tr>
<td><strong>Frequently Bank Visit</strong></td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>25</td>
</tr>
<tr>
<td>Once a Week</td>
<td>97</td>
</tr>
<tr>
<td>Few Times a Week</td>
<td>33</td>
</tr>
<tr>
<td>Once a Month</td>
<td>232</td>
</tr>
<tr>
<td>Yearly</td>
<td>192</td>
</tr>
<tr>
<td>Never</td>
<td>32</td>
</tr>
<tr>
<td><strong>Banking Area</strong></td>
<td></td>
</tr>
<tr>
<td>Al-Batinah</td>
<td>56</td>
</tr>
<tr>
<td>Al-Buraimi</td>
<td>19</td>
</tr>
<tr>
<td>Al-Dakhiliyah</td>
<td>40</td>
</tr>
<tr>
<td>Al-Dhahirah</td>
<td>39</td>
</tr>
<tr>
<td>Al-Sharqiyah</td>
<td>44</td>
</tr>
<tr>
<td>Al-Wusta</td>
<td>30</td>
</tr>
<tr>
<td>Dhofar</td>
<td>31</td>
</tr>
<tr>
<td>Musandam</td>
<td>19</td>
</tr>
<tr>
<td>Muscat</td>
<td>333</td>
</tr>
<tr>
<td><strong>Electronic Banking Functions (Multiple Answers)</strong></td>
<td></td>
</tr>
<tr>
<td>ATM</td>
<td>583</td>
</tr>
<tr>
<td>Cash Deposit Machine</td>
<td>222</td>
</tr>
<tr>
<td>Internet Banking</td>
<td>118</td>
</tr>
<tr>
<td>Mobile (SMS) Banking</td>
<td>207</td>
</tr>
<tr>
<td>Home Banking</td>
<td>-</td>
</tr>
<tr>
<td>Phone Banking</td>
<td>232</td>
</tr>
<tr>
<td>Web Banking</td>
<td>98</td>
</tr>
<tr>
<td>Television Bank</td>
<td>-</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
</tr>
<tr>
<td><strong>Website</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>462</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>149</td>
</tr>
<tr>
<td><strong>Internet Banking Service</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>339</td>
</tr>
<tr>
<td>No</td>
<td>50</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>222</td>
</tr>
<tr>
<td><strong>Use Internet Banking</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>118</td>
</tr>
<tr>
<td>No</td>
<td>493</td>
</tr>
</tbody>
</table>

3. Respondents Use of Internet Banking

This section describes Internet banking-related behaviour of the current users of Internet banking services (118 users out of 611 respondents, 19.3%). It considers the main reasons that motivated respondents to use Internet banking,
followed by the frequency of use Internet banking and the most frequently used Internet banking services, bank branch services or both (see Table 3 and 4).

The majority of the respondents (92.4%) used Internet banking because of its availability 24/7; and 86.4% identified time saving as the second reason. Moreover, free or lower banking services charges was the third reason that motivated respondents' to use Internet banking (52.5%). Some respondents (39%) used Internet banking because it was a reliable medium for banking transactions and a few respondents (6.8%) used it for other reasons (e.g. willing to try any new banking services).

Participants were asked how often they used Internet banking which showed that 43.2% of them used it once a week; 25.4% used it few times a week; 12.7% used it few times a month; 10.2% used it once a month; only 7.6% used
it daily. From all the respondents 68.7% confirmed that using Internet banking meant that they visited their bank branches less often; while 31.3% of them made it clear that using Internet banking did not decrease the number of bank visits.

Table 4: Means of achieving banking operations by Internet banking users

<table>
<thead>
<tr>
<th>Banking Operations</th>
<th>Research Sample (n = 118)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internet Banking</td>
</tr>
<tr>
<td></td>
<td>Freq</td>
</tr>
<tr>
<td>Checking Balance</td>
<td>110</td>
</tr>
<tr>
<td>Account Transaction History</td>
<td>104</td>
</tr>
<tr>
<td>Paying Utility Bills</td>
<td>70</td>
</tr>
<tr>
<td>Paying Credit Cards Expenses</td>
<td>70</td>
</tr>
<tr>
<td>Ordering Cheque Book</td>
<td>66</td>
</tr>
<tr>
<td>Ordering Credit / Debit Cards</td>
<td>29</td>
</tr>
<tr>
<td>Ordering Bank Loans</td>
<td>-</td>
</tr>
<tr>
<td>Transfers Funds</td>
<td>43</td>
</tr>
<tr>
<td>Investment Information</td>
<td>-</td>
</tr>
<tr>
<td>Investment Advice</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 4 shows that the main Internet banking services that respondents used were to check their balances (93.2%), account transaction history (88.1%), pay their utility bills (59.3%), pay their credit cards expenses (59.3%), order new cheque books (55.9%), transfers funds (36.4%) and order credit / debit cards (24.6%). From the sample, none of the participants used Internet banking to order a bank loan, seek investment information or advice. In summary, it could be noted that the most used Internet banking services were those which were not related to money transactions.

Among the 118 respondents’ who used Internet banking, 71.2% were males and under a third were females 28.8%. This indicates that males were more
likely to accept and use of Internet banking compared to females in Oman. The largest number of Internet banking users were aged between 31 – 40 years, who accounted for 48.3% followed by the respondents aged 20 – 30 (29.7%). Of the respondents' (16.1%) were aged between 41 – 50 years and 3.4% were between 51 – 60 years. The smallest groups of the study sample belonged to those aged less 20 years (1.7%) and those were more than 60 years old (0.8%). This indicates that customers aged between 20 – 40 years were more willing to accept and use Internet banking. Figure-1 presents the users of Internet banking according to their age.

![Figure 1: Users of Internet banking regarding age sub-groups](image)

Regarding Internet banking users educational levels, the majority of the respondents who used Internet banking were Master's degree holders (40.7%). Moreover, 30.5% of the respondent's had Bachelor's degree, 16.9% had PhD degree. The remaining 7.6% of the respondents had professional diploma, 4.2% of them had school certificate. This indicates that more-educated customers are
more willing to accept and use Internet banking. Figure-2 outlines the users of Internet banking according to their educational level.

![Pie chart showing users of Internet banking by educational level]

**Figure 2: Users of Internet banking regarding educational level sub-groups**

Among the 118 users of Internet banking 78% were Omanis and 22% only foreigners. This indicates that Omanis did not have problems in relation to the acceptance and use of Internet banking. With regard to occupations of Internet banking users, the largest group of the respondents were employed in the private sector (56.8%) and the second largest group were employed in the government sector (38.1%). Moreover, 3.4% of the respondents' were self-employed; 1.7% were students. Retired respondents and others (e.g. housewife) did not use Internet banking. This indicates that private sector employees are more aware of Internet banking. Figure-3 presents the users of Internet banking occupation.
4. Respondents Refusing to Use Internet Banking

This part was designed in order to identify the main reasons that prevented respondents using Internet banking (e.g. system complexity, new system and security issues). Table-5 summarized these main reasons according to the responses of the 493 respondents who did not use Internet banking.

<table>
<thead>
<tr>
<th>Main Reasons that Prevents Banks Customers to Use the Internet Banking Service (Multiple Answers)</th>
<th>Research Sample (n = 493)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td>Never heard about Internet banking before.</td>
<td>16</td>
</tr>
<tr>
<td>Not familiar with computers and Internet.</td>
<td>144</td>
</tr>
<tr>
<td>Internet banking is too complicated.</td>
<td>166</td>
</tr>
<tr>
<td>Human touch is very important for customers.</td>
<td>322</td>
</tr>
<tr>
<td>Concerned about security and privacy.</td>
<td>406</td>
</tr>
<tr>
<td>Difficulties of Internet connection and coverage.</td>
<td>175</td>
</tr>
<tr>
<td>New service, customers prefers to wait and see how it works with others.</td>
<td>214</td>
</tr>
<tr>
<td>No guidance available about the use of Internet banking.</td>
<td>241</td>
</tr>
<tr>
<td>Others.</td>
<td>87</td>
</tr>
</tbody>
</table>
The majority of the respondents (82.4%) did not use Internet banking as they were concerned about security and privacy (trust) and 65.3% preferred to manage their bank enquiries by visiting their bank branches as human interaction was very important for them (culture). Almost half the respondents (48.9%) refused to use Internet banking because of the lack of instructions and guidance (facilitating conditions). Of the respondents, 43.4% confirmed that Internet banking was a new bank service and they preferred to wait and see how it worked (performance expectancy); meanwhile 35.5% of them made it clear that the difficulties of Internet connection hindered their use of Internet banking.

Furthermore, some of the respondents (33.7%) confirmed that they were not willing to use Internet banking as it was too complicated (effort expectancy), followed by 29.2% of them who made it clear that they were not familiar with using computers and the Internet (customers attitudes towards computers). In addition, some respondents (17.7%) made it clear that there were other reasons that prevented them from using Internet banking (e.g. limited income). However, a small percentage of the respondents (3.3%) reported that they did not use Internet banking as they had not heard about it. It can be noted that security and privacy (trust) considered as a main issue which hindered the Omani bank customers to accept and use Internet banking.
5. Descriptive Analysis of Likert Measurement Scales

This section focuses mainly on the views of the respondents of each construct comprising the initial model (see Figure 6.1). All constructs were measured by asking the participants a number of questions in the form of four-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). Tables 7.6 to 7.12 summarize the responses to each of the questions for each construct.

- Performance Expectancy

Table-6 shows the results of the survey with regard to the respondents' perceptions of Internet banking performance expectancy which was measured using six items to cover the root constructs (perceived usefulness, extrinsic motivation, relative advantage and outcome expectations).

It can be noticed from the table that 44.8% of the total sample believed that Internet banking could not help users to conduct their account transactions accurately, followed by 42.4% who disagreed that Internet banking provided users with all the necessary bank information (perceived usefulness). 35.7% of the respondents' agreed that Internet banking facilitated them in making the best use of their time so users could focus more on their working responsibilities in order to improve their productivity (extrinsic motivation). However, from the
respondents 34.2% believed that Internet banking was not useful (relative advantage). Moreover, 52.2% of the respondents’ agreed that Internet banking enabled them to manage their bank transactions more quickly, whereas 41.4% of them responded that Internet banking did not enabled them to managed their financial resources more effectively (outcome expectations).

<table>
<thead>
<tr>
<th>Performance Expectancy</th>
<th>Research Sample (n = 611)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SDA (1)</td>
</tr>
<tr>
<td>Internet banking helps to conduct account transactions accurately.</td>
<td>125</td>
</tr>
<tr>
<td>Internet banking provides users with all necessary bank information.</td>
<td>163</td>
</tr>
<tr>
<td>Internet banking makes it easier to focus on other working responsibilities.</td>
<td>52</td>
</tr>
<tr>
<td>Internet banking is not useful.</td>
<td>76</td>
</tr>
<tr>
<td>Internet banking enables users to accomplish their bank transactions more quickly.</td>
<td>36</td>
</tr>
<tr>
<td>Internet banking enables users to manage their financial resources more effectively.</td>
<td>163</td>
</tr>
</tbody>
</table>

It can be noted that respondents could not perceived the usefulness of Internet banking and extrinsic motivation impacted their acceptance of Internet banking. The respondents agreed that Internet banking had some benefits, but they expected more as they found that it was not effective and useful. Thus, it can be concluded that performance expectancy and its root constructs influenced customers Behavioural Intentions towards the acceptance and use of Internet banking, as customers' had negative attitudes about Internet banking performance expectancy.
• Effort Expectancy

The aim of this part is to demonstrate the respondents' beliefs about effort expectancy associated with Internet banking. Effort expectancy was one of the main constructs that influenced the behavioural intention towards the acceptance and use of Internet banking. This construct was measured using six items to cover the root constructs (perceived ease of use, complexity and ease of use) (see Table 7).

<table>
<thead>
<tr>
<th>Effort Expectancy</th>
<th>Research Sample (n = 611)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SDA (1)</td>
</tr>
<tr>
<td>Learning to operate Internet banking is easy</td>
<td>Freq</td>
</tr>
<tr>
<td></td>
<td>142</td>
</tr>
<tr>
<td>It would be easy to become skilful at using Internet banking</td>
<td>184</td>
</tr>
<tr>
<td>It would take long time to learn how to use Internet banking</td>
<td>59</td>
</tr>
<tr>
<td>Internet banking is complicated</td>
<td>113</td>
</tr>
<tr>
<td>Internet banking is flexible to interact with</td>
<td>209</td>
</tr>
<tr>
<td>Internet banking is easy to use</td>
<td>165</td>
</tr>
</tbody>
</table>

As shown in the table above, 30.9% of the respondents' disagreed that learning to operate Internet banking was easy and 24.9% believed that it would be difficult to become skilful at using Internet banking (perceived ease of use). Furthermore, 37.8% of the respondents' agreed that it would take a long time to learn how to use Internet banking; while 27.5% of them decided that Internet banking was complicated (complexity). In addition, 21.9% of respondents made
it clear that Internet banking was not flexible to interact with followed by 26.7% who disagreed that Internet banking was easy to use.

It can be concluded that customers did not perceived the system ease of use as they agreed that Internet banking was complicated and it was not easy to use. Therefore, effort expectancy and its root constructs influenced customers behavioural intentions towards the acceptance and use of Internet banking, as customers' had a negative attitude towards Internet banking effort expectancy.

- **Facilitating Conditions**

This part of the questionnaire was designed to explore if Internet banking facilitating conditions impacted bank customers behavioural intentions to accept and use Internet banking. Facilitating conditions was measured using six different items to cover the root constructs (perceived behavioural control, facilitating conditions and compatibility) (see Table 8).

Table-8 shows that of the respondents 40.6% disagreed that the basic necessary resources to use Internet banking are available; while 49.8% of the respondents agreed that Internet banking was not compatible with other on-line systems (perceived behavioural control). Moreover, 50.6% of the respondents' strongly disagreed that full guidance was available for those who wish to use Internet banking and 39.6% disagreed that there was a specific department (on-line customer service) for assistance with any difficulties may encounter users.
of the Internet banking (facilitating conditions). Therefore, the respondents made it clear that facilitating conditions negatively affected the use of Internet banking. In addition, 24.9% of the respondents disagreed that Internet banking fitted with their lifestyle well, followed by 35% who responded that Internet banking was not compatible with bank customers’ requirements (compatibility).

The findings demonstrated that the shortage of providing facilitating conditions negatively affected the respondents’ acceptance of Internet banking. Thus, facilitating conditions and its root constructs had a direct influenced on bank customers behavioural intentions towards the acceptance and use of Internet banking.

<table>
<thead>
<tr>
<th>Facilitating Conditions</th>
<th>Research Sample (n = 611)</th>
<th>SDA (1)</th>
<th>DA (2)</th>
<th>A (3)</th>
<th>SA (4)</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq</td>
<td>%</td>
<td>Freq</td>
<td>%</td>
<td>Freq</td>
<td>%</td>
</tr>
<tr>
<td>All the resources needed to use Internet banking are available.</td>
<td>126</td>
<td>20.6</td>
<td>248</td>
<td>40.6</td>
<td>195</td>
<td>31.9</td>
</tr>
<tr>
<td>Internet banking is not compatible with other on-line systems.</td>
<td>34</td>
<td>5.6</td>
<td>134</td>
<td>21.9</td>
<td>304</td>
<td>49.8</td>
</tr>
<tr>
<td>Full guidance is available for customers who wish to use Internet banking.</td>
<td>309</td>
<td>50.6</td>
<td>166</td>
<td>27.2</td>
<td>120</td>
<td>19.6</td>
</tr>
<tr>
<td>A specific department (customers’ service) is available 24/7 for assistance.</td>
<td>163</td>
<td>26.7</td>
<td>242</td>
<td>39.6</td>
<td>179</td>
<td>29.3</td>
</tr>
<tr>
<td>Internet banking fits well with customers’ lifestyle.</td>
<td>208</td>
<td>34</td>
<td>152</td>
<td>24.9</td>
<td>211</td>
<td>34.5</td>
</tr>
<tr>
<td>Internet banking is compatible with all banking requirements.</td>
<td>246</td>
<td>40.3</td>
<td>214</td>
<td>35</td>
<td>128</td>
<td>20.9</td>
</tr>
</tbody>
</table>

Table 8: Respondents beliefs regarding Internet banking facilitating conditions
Culture

This section demonstrates the respondents' beliefs about the culture construct in order to justify if the culture is one of the main constructs that influenced the respondents' behavioural intentions towards the acceptance and use of Internet banking. The culture construct was measured by eight items, to cover each of Hofstede (1980, 1991) four culture dimensions (power distance, individualism, uncertainty avoidance and masculinity) (see Table 9).

<table>
<thead>
<tr>
<th>Culture</th>
<th>Research Sample (n = 611)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SDA (1)</td>
</tr>
<tr>
<td></td>
<td>Freq</td>
</tr>
<tr>
<td>Family, friends and co-workers influence customer behaviour to use/not use the Internet banking.</td>
<td>21</td>
</tr>
<tr>
<td>Supervisor / manager motivated their employees to use Internet banking.</td>
<td>28</td>
</tr>
<tr>
<td>Bank Customers chosen bank functions that friends use, even if it isn't the best one.</td>
<td>62</td>
</tr>
<tr>
<td>Willing to try and use new banking services.</td>
<td>156</td>
</tr>
<tr>
<td>Availability of clear guidelines and rules regarding how to use the Internet banking are important.</td>
<td>2</td>
</tr>
<tr>
<td>Answering customers' queries about Internet banking is not important.</td>
<td>349</td>
</tr>
<tr>
<td>Omani culture allows females to use the Internet in order to bank on-line.</td>
<td>27</td>
</tr>
<tr>
<td>Males in Oman are more inclined to use Internet banking than females.</td>
<td>15</td>
</tr>
</tbody>
</table>

As shown in the table above, it can be seen that 45.3% of the respondents agreed that people who influenced their behaviour (family members, friends and co-workers) influenced their decision to use / not to use Internet banking; while
54.2% of them agreed that their supervisors / managers motivated them to use Internet banking (power distance). Moreover, 30.3% of participants agreed that they preferred to use any bank function that their friends were used even if it is not the best one and 43.7% of the respondents were not willing to try and use new banking services alone (collectivist).

In addition, 55.8% of the respondents strongly agreed about the importance of the availability of guidelines and rules about how to use the Internet banking and 57.1% of the respondents strongly disagreed that answering customers' queries about Internet banking was not important (uncertainty avoidance). Almost half of the sample (50.1%) agreed that the Omani culture allowed females to use the Internet in order to bank on-line; meanwhile 44.4% of them agreed that Omani males were more inclined to use Internet banking services than females.

From the research findings it could be concluded that Omani culture can be classified as a high power distance, collectivist, high uncertainty avoidance and feminine, as both men and women have the same rights in the Omani culture. Thus, the Omani culture and its root constructs influenced the bank customers' behavioural intentions towards the acceptance and use of Internet banking.
Customers Attitudes towards Computers

Table-10 indicates the results of the survey regarding the respondents' perception of customers' attitudes towards computers to accept and use Internet banking. This particular construct was measured by ten items to cover the root constructs (attitude towards using technology, computer self-efficacy and anxiety).

<table>
<thead>
<tr>
<th>Table 10: Respondents attitudes towards computers regarding Internet banking acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers Attitudes Towards Computers</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Liking the idea of using new technology systems.</td>
</tr>
<tr>
<td>Using new technology is pleasant.</td>
</tr>
<tr>
<td>Feel comfortable using new technology.</td>
</tr>
<tr>
<td>New technology make life more complicated.</td>
</tr>
<tr>
<td>Once start using a new system it's hard to stop.</td>
</tr>
<tr>
<td>Get bored quickly when using new systems.</td>
</tr>
<tr>
<td>Feel more confident using computer tasks.</td>
</tr>
<tr>
<td>Prefer to computerize all work.</td>
</tr>
<tr>
<td>Frightened of using computer systems.</td>
</tr>
<tr>
<td>Losing a lot of information by hitting the wrong key.</td>
</tr>
</tbody>
</table>

As shown in the table above, 38.1% of the respondents' agreed that they liked the idea of using new technology, 36.5% agreed that using new technology is pleasant, 31.3% considered that they felt comfortable using new technology, 37.3% believed that once they started using a new technology system it would be hard to stop using it and 46.8% disagreed that they got bored quickly when
they used any new technology system. However, only 30.3% of the respondents agreed that new technology made life more complicated. With regard to computer self-efficacy 33.1% of the respondents' disagreed that they felt more confident using the computer and 29.6% disagreed that they preferred to computerize their work. In addition, 33.4% of the respondents' agreed that they were frightened of using any computer system and 21.9% of them worried that they may lose a lot of information by hitting the wrong key.

In summary, the findings explained that the Omani bank customers had a positive attitude towards technology, as they liked the idea of using new technology. However, bank customers suffered from low computer self-efficiency and high computer anxiety since they were frightened of using computers. Thus, customers' attitudes towards computers and its root constructs influenced bank customers' behavioural intentions towards acceptance and use of Internet banking.

- Trust

This part was designed to illustrate if the trust construct could be one of the constructs that impacted on the respondents' behavioural intentions to accept and use Internet banking. Trust construct in this study was measured by nine items to cover the root construct (trust in the bank, trust in the Internet and trust in Internet banking information) (See Table 11).
Table-11 shows that 59.4% trusted the bank as a reliable service provider, 57.3% agreed that bank was safe and kept all customers data securely and 50.1% confirmed that they felt loyal towards their bank. On the other hand, some respondents made it clear that they did not trust the Internet, with 44.7% disagreeing that they felt secure by sending their personal information through the Internet, 33.2% believed that all information sent over the Internet would be seen by unauthorised people and 24.4% did not trust the Internet.

Furthermore, 47.6% of the respondents disagreed that Internet banking provided users with accurate information, 39.4% of them disagreed that Internet banking provides users with complete and relevant financial information and 51.2% of the respondents believed that Internet banking did not process bank transactions accurately. However, 54% strongly agreed that the bank would not
repay money withdrawn by an unauthorized person and 33.7% made it clear that Internet banking was not secure.

In summary, it can be noted that the respondents trusted the bank they dealt with. However, because of the lack trust in the Internet the bank customers could not trust Internet banking. Therefore, trust and its root constructs had influenced bank customers' behavioural intentions towards the acceptance and use of Internet banking.

- Behavioural Intentions towards the Acceptance and Use of Internet Banking

Table-12 shows the results of the survey with regards to the behavioural intentions of the respondents. Behavioural intention was measured by six items reflecting the respondent's intention towards use / continued use of Internet banking.

<table>
<thead>
<tr>
<th>Intention Towards Use Internet banking</th>
<th>Research Sample (n = 611)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SDA (1)</td>
</tr>
<tr>
<td></td>
<td>Freq</td>
</tr>
<tr>
<td>Internet banking is useful.</td>
<td>131</td>
</tr>
<tr>
<td>Internet banking is not complicated.</td>
<td>192</td>
</tr>
<tr>
<td>Using Internet banking is a personal decision.</td>
<td>-</td>
</tr>
<tr>
<td>The availability of guidance affects the intention towards using Internet banking.</td>
<td>4</td>
</tr>
<tr>
<td>Computer experience helps to deal with Internet banking.</td>
<td>-</td>
</tr>
<tr>
<td>The trust in Internet banking influences customers' intention towards using the service.</td>
<td>-</td>
</tr>
</tbody>
</table>
It can be noticed from the previous table that 39% of the respondents' clarified that they would not use the Internet banking as it is not useful and 20.3% made it clear that if Internet banking was easy to use they would use it. However, 58.4% of the respondents' agreed that using Internet banking was a personal decision, 54% believed that the availability of guidance affects their behavioural intentions towards the acceptance and use of Internet banking and 55.8% confirmed that their computer knowledge helped to deal with Internet banking. Finally, 67.8% made it clear that trust is an important factor that influences their behavioural intentions to accept and use Internet banking.
Appendices

APPENDIX TWO

Interview Form with Bank Managers

Section 1: The bank situation regarding the Internet banking services.
1. What is the first thing that comes into your mind when you hear the term Internet banking?

2. Does your bank offer an Internet banking service?

If yes,

- What was the driver for the development of Internet banking service in your bank?

- What are the main difficulties that the bank encountered in the early stages of system adoption?

- In your opinion what are the main barriers that stimulate the bank's customers to use the Internet banking service?

- Does the bank follow any specific methods to motivate customers to use the Internet banking service?

- Does the bank has any statistical information regards Internet banking services users:
  
    - How many customers asked for user name and password for the Internet banking? How many of them became an active user?

    - Is the number of active Internet banking users increasing or decreasing? What are the reasons for that?

    - Users of Internet banking service may face some problems when they use the service, what are the methods that can used to communicate with the bank about these problems?

    - What are the natures of these problems?

    - How does the bank deal with these complaints?

- Internet banking services is one of several electronic banking functions, what other electronic functions does the bank offer to their customers?
Section 2: Performance Expectancy, Effort Expectancy, Facilitating Conditions, Culture, Customers’ Attitudes Towards Computers and Trust

A. Performance Expectancy

- What are the measures that have been taken by the bank to make the system more useful for users in regards to the following points:
  - Content (Is bank website provide the users with sufficient information?).
  - Accuracy (Are the on-line bank information accurate?).
  - Timeliness (Can users’ access the required information in a short time?).
  - Format (Is the bank website information been presented in a useful format).

- Do you think that on-line users perceive that Internet banking service is useful and consistent with their lifestyle?

- Do you think that the usefulness of Internet banking service influence the customers’ intention towards using it?

B. Effort Expectancy

- As a bank manager, to what extent do you believe that the ease of use affects customers’ intentions towards using the Internet banking service?

- What are the measures than have been taken by the bank to make the Internet banking service system ease of use? (Website design, language, number of web pages).

C. Facilitating Conditions

- Can you list the different functions which are available to users through the Internet banking service website?

- Are there any future plans to add new functions to your Internet banking service system?

- What types of facilitating conditions does the bank provide Internet banking service users with?

- To what extent do you believe that the facilitating conditions affect customers’ intentions towards accept the Internet banking service?
D. **Customers' Attitude Towards Computer**

- Do you think that customers who have good knowledge regarding the technology in general and computers in particular are more willing to bank on line comparing with other customers who do not have computer knowledge? In another word does computer knowledge affect the acceptance of Internet banking?

- Based on your experience, do any of the following points affect the customers Intentions towards using the Internet banking service?
  - Users’ attitude towards technology.
  - Confidence of using computers (Self-efficacy).
  - Computers anxiety.

E. **Culture**

- Does Omani culture affect customers’ intentions to accept and use Internet banking service? Explain?

- To what extent do you think that the culture of Omani society influences the adoption of Internet banking service?
  - Families, Colleagues, Head managements (Power Distance).
  - Personal decision making (Individualism).
  - Society confidence regards development technology (Uncertainty Avoidance).
  - Depending on the Omani culture, are females allowed freely to use the internet in order to bank on-line (Masculinity).

- Have you noticed any difference between Omanis and foreigners customers regards the using of the Internet banking system? Explain?

F. **Trust**

- Generally, what do you think about trust as one of the influential elements that affect the acceptance of the on-line service?

- Are there any procedures that have been taken by the bank to convince customers that the Internet banking service is secure and risk-free?

- Are there any measures taken by the banks’ managers to activate and increase the Internet banking service security and privacy?
What is the approved period to update and review the website information in order to provide users with accuracy, completeness and relevance information?

G. Moderators and General Questions

- From your point of view, who are more willing to bank on-line according to the following categories
  - Age (Younger / Older users).
  - Gender (Male / Female users).
  - Education level (Low / High education level).
- Do you think that using the Internet banking service should voluntary or mandatory?
- Are there any short-term or long-term plans in order to develop the Internet banking services and motivate customers to use the Internet banking?
- Generally how do you evaluate the service during the previous period (three years)?

H. Research Model

At this particular time I am really interested to know what you think regarding the research model.

- Strengths and Weaknesses.
- Additions and Deletions.
- Suggestions.

Finally, would you like to add any thing else to this interview?

Thank you for your time and co-operation

If No,
- From your point of view what are the major barriers that prevent the bank from developing an Internet banking service?
- Are there any pressures from the government or the Central Bank of Oman to adopt and provide your clients with the Internet banking service?
- Are there any plans to adopt the Internet banking service in the future?
- What electronic banking functions does the bank offer to their customers?
APPENDIX THREE
Bank Managers Coding

<table>
<thead>
<tr>
<th>Banks Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank</td>
</tr>
<tr>
<td>First Bank</td>
</tr>
<tr>
<td>Second Bank</td>
</tr>
<tr>
<td>Third Bank</td>
</tr>
<tr>
<td>Fourth Bank</td>
</tr>
<tr>
<td>Fifth Bank</td>
</tr>
<tr>
<td>Sixth Bank</td>
</tr>
<tr>
<td>Seventh Bank</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bank Managers Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank</td>
</tr>
<tr>
<td>B1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>B2</td>
</tr>
<tr>
<td>B3</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>B4</td>
</tr>
<tr>
<td>B5</td>
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<tr>
<td></td>
</tr>
<tr>
<td>B6</td>
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<tr>
<td></td>
</tr>
<tr>
<td>B7</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Dear Respondent,

I am a lecturer in the Higher College of Technology – Muscat and I am currently a full-time PhD student at the Cardiff School of Management, Cardiff Metropolitan University (UWIC) in the United Kingdom. This questionnaire is part of a PhD study which aims to investigate the adoption of Internet banking in the Sultanate of Oman. Your responses will enable me to identify the main factors that influence bank customers’ intentions towards the adoption and use of Internet banking.

Your voluntary contribution is very important to the success of this research since the survey findings will be used as primary data for my thesis. If you choose to participate, do not write your name on the questionnaire. I do not need to know who you are and no one will know whether you participated in this study. Furthermore, all the information you provide will be treated in the strictest confidence and will only be accessible by academic researchers who are involved in this study. Please make sure that you answer all questions by ticking the most appropriate responses before you return the questionnaire. In case you would like to add any additional information please feel free to contact me at any time.

Thank you for your help

Bassam Khalil
Cardiff School of Management
Cardiff Metropolitan University
BATabsh@cardiffmet.ac.uk
Mobile number: +96896030686
**Note:**
Please tick (✓) the most appropriate responses, if none are appropriate please select the response “other” and, if possible provide a brief explanation.
- The following information is important to better understand and utilize the information gathered in this questionnaire.

### Section 1: General Information

1.1 What is your gender?
- [ ] Male
- [ ] Female

1.2 In which age band are you?
- [ ] Less than 20 years
- [ ] 20 – 30 years
- [ ] 31 – 40 years
- [ ] 41 – 50 years
- [ ] 51 – 60 years
- [ ] More than 60 years

1.3 What is the highest education level you have achieved?
- [ ] School Certificate
- [ ] Diploma/Higher Diploma
- [ ] Bachelor Degree
- [ ] Master Degree
- [ ] PhD Degree
- [ ] Other (please specify)

1.4 What is your occupation?
- [ ] Student
- [ ] Employee in the Private Sector
- [ ] Employee in the Government
- [ ] Retired
- [ ] Self-employed
- [ ] Other (Please specify)

1.5 What is your nationality?
- [ ] Omani
- [ ] Other (Please specify)

### Section 2: Information regarding your banking experience

2.1 In which one of the following banks do you have your main bank account?
- [ ] Ahli Bank
- [ ] Bank Muscat
- [ ] Dhofar Bank
- [ ] Oman Arab Bank
- [ ] Oman International Bank
- [ ] National Bank of Oman
- [ ] Sohar Bank
- [ ] Other (Please specify)

2.2 How frequently do you visit your bank branch?
- [ ] Daily
- [ ] Once a week
- [ ] Few times a week
- [ ] Once a month
- [ ] Yearly
- [ ] Never

2.3 In which area do you usually visit your bank branch?
- [ ] Al-Batinah
- [ ] Al-Buraimi
- [ ] Al-Dakhliyah
- [ ] Al-Dhahirah
- [ ] Al-Sharqiyah
- [ ] Al-Wusta
- [ ] Dhofar
- [ ] Musandam
- [ ] Muscat

2.4 Which of these electronic banking functions do you use? (Please tick all that apply)
- [ ] Automatic Teller Machine (ATM)
- [ ] Mobile Bank
  - [ ] (SMS Bank)
- [ ] Web Bank
  - [ ] P.C Bank
  - [ ] T.V Bank
- [ ] Internet Bank
- [ ] Phone Bank
- [ ] Other (Please specify)

2.5 Does your bank have a website?
- [ ] Yes
- [ ] No
- [ ] I don’t know

2.6 Does your bank provide its customers with Internet banking service?
- [ ] Yes
- [ ] No
- [ ] I don’t know
**Note:**
Please tick (✓) the most appropriate responses, if none are appropriate please select the response “other” and, if possible provide a brief explanation.

### 2.7 Do you use the Internet banking system offered by your bank?
- [ ] Yes
- [x] No *(Please go to question number 2.12)*

### 2.8 If yes, what are the main reasons that motivated you to use Internet banking system? (Please tick all that apply)
- [ ] Availability of the Internet banking
- [ ] A reliable medium for banking transaction round-the-clock
- [ ] Time saving
- [ ] Lower or free charge
- [ ] Other *(Please specify)*

### 2.9 How often do you use Internet banking system?
- [ ] Daily
- [ ] Once a week
- [ ] Few times a week
- [ ] Few times a month
- [ ] Once a month
- [ ] Yearly

### 2.10 Does use of Internet banking mean that you visit your bank branch less often?
- [ ] Yes
- [x] No
- [ ] No difference

### 2.11 How do you achieve the following bank operations (Please after answering this question go to section 3)

<table>
<thead>
<tr>
<th>Operation</th>
<th>Via the Internet banking</th>
<th>Visiting the bank branch</th>
<th>Both Internet banking and bank branch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checking your account balance</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Viewing and printing your account transaction history</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Paying utility bills</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Paying credit cards expenses</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Ordering cheque books</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Ordering credit / debit cards</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Ordering a bank loans</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Transfers funds</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Getting financial and investment information</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Getting investment advice</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

### 2.12 If **No**, what are the main reasons that prevented you to not use the Internet banking system? (Please tick all that apply)
- [ ] Never heard about Internet banking before
- [ ] Too complicated
- [ ] I concerned about security and privacy
- [ ] Too new, I would like to see how it works with others and then I may use it
- [ ] Other *(Please specify)*
- [ ] I am not familiar with computers and the Internet
- [ ] The human touch is very important for me
- [ ] Difficulties of Internet connection
- [ ] No guidance available about how to start use the Internet banking system
### Section 3: Customers' beliefs about the adoption and use of Internet banking

#### 3.1 Customers' beliefs regarding the Internet banking performance

<table>
<thead>
<tr>
<th>Expectancy</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet banking helps me to conduct my account transactions accurately.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking provides me with all the information I need on banking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking makes it easier to focus on my other working responsibilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would not find the Internet banking useful in my life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using Internet banking would enable me to accomplish my bank transactions more quickly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking enables me to manage my financial resources more effectively.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3.2 Internet banking and ease of use

<table>
<thead>
<tr>
<th>Activity</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning to operate Internet banking would be easy for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It would be easy for me to become skilful at using Internet banking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that it would take too long to learn how to use Internet banking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking is complicated as it is difficult to understand what is going on.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often find Internet banking is flexible to interact with.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall, I believe that Internet banking is easy to use.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3.3 Internet banking facilitating conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>All the resources needed to use Internet banking are available to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking is not compatible with the other on-line systems I use.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Full guidance is available for customers who wish to use Internet banking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A specific department (customer service) is available round-the-clock for assistance with any difficulties I encounter with Internet banking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking fits well with my lifestyle.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using Internet banking is compatible with all aspects of my banking requirements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3.4 Culture influences on use of Internet banking

<table>
<thead>
<tr>
<th>People who influence my behaviour (family members, friends and co-workers) think that I should use/not use the Internet banking.</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My supervisor / manager motivated me to start using Internet banking, so I can consider my work responsibilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I choose one of the new banking functions, I prefer to choose one that my friends use as well, even if it isn’t the best one.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I hear about a new banking service I am willing to giving it a try.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>In choosing a new banking service, it is important to me that there are clear guidelines and rules about how to use it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would use Internet banking even if the bank is not able to answer all my queries about the system.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omani culture allows females to use the Internet in order to bank on-line.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think males are more inclined to use Internet banking than females.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall, the use of Internet banking is voluntary.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.5 Customer attitudes towards computers

<table>
<thead>
<tr>
<th>I like the idea of using new computer systems.</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using new technology is pleasant.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I enjoy using new technology.</td>
<td></td>
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<tr>
<td>I feel comfortable using new technology.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New technologies make life more complicated.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Once I start using a new system I find it hard to stop.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I get bored quickly when using new systems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel more confident using computer tasks.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I prefer to computerize all my work.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I am frightened of using computer systems.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>It worries me to think that I could lose a lot of information by hitting the wrong key.</td>
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<td></td>
</tr>
</tbody>
</table>
### 3.6 Trust in Internet banking

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I trust my bank as a reliable service provider.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that my bank is safe and keeps all my data securely.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel loyal towards my bank.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I feel secure by using the Internet to send personal information.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that all information sent over the Internet will be seen by other people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generally, I trust the Internet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that Internet banking provides accurate records.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking guarantees that all financial information are complete and relevant.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I don’t believe that Internet banking systems processes transactions accurately.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I am sure that the bank will not repay money withdrawn from my account by unauthorized transactions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall, I feel that using Internet banking system is secure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.7 Using the Internet banking system in the future

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe that the Internet banking is useful.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using Internet banking is not complicated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using Internet banking is my personal decision.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The availability of some guidance and advice affects my intention towards using Internet banking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My computer experience helps me to deal with Internet banking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The trust in Internet banking influences my intention towards using the system.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendices

Would you like to add any other things that may help me to understand your acceptance, perceptions and opinions regarding the adoption and use of Internet banking. If so, please feel free to add any comments in the space below.

THANK YOU VERY MUCH FOR YOUR PARTICIPATION IN THIS STUDY.
APPENDIX FIVE
Arabic Version of Questionnaire Form

INTERNET BANKING
IN THE SULTANATE OF OMAN

الخدمات المصرفية عبر الإنترنت في سلطنة عمان

[Website link: http://www.banking.com]
أرجو أن يسمح وافتك بالإجراء على هذا الاستبيان والذي يعد كجزء من رسالة الدكتوراه التي أقوم بها حاليا بجامعة كارديف متروبوليتان في المملكة المتحدة. تهدف هذه الدراسة لمعرفة مدى قبول واستخدام عملاء البنوك نظام الخدمات المصرفية عبر الإنترنت (Internet Bank) في سلطنة عمان. كما أود أن أتناهيك إلى أن سوف تكون من تحديد العوامل الأساسية التي تؤثر على قبول واستخدام نظام الخدمات المصرفية عبر الإنترنت (Internet Bank).

مساهمتك سوف تكون خير دليل لنا حتى تكون الدراسة وافية ودقيقة وتحقيق الهدف المرجو منها، حيث أن نتائج هذا الاستبيان سيثم الإعتماد عليها كبيانات أساسية لرسالة الدكتوراه. إذا اختبرت المشاركة، ففأرجوا لا تقوم بكتابة اسمك على الاستبيان حيث انتي لست بحاجة لمعرفة من تلقى، فإن لم يكن أحد عن مشاركتك في هذه الدراسة. كما أجب أن أنت أو مشاركتك في هذه الدراسة أمر طوعي وكامل اختيارك. إضافة إلى ذلك فإن جميع المعلومات التي سوف تقدمها ستستخدم بسرية تامة لأغراض البحث العلمي فقط. على يرجى التأكد من إجابة جميع الأسئلة وذلك باختيار الإجابة المناسبة من بين البدائل المطروحة لكل سؤال، وفي حال كنت ترغب في مناقشة الموضوع وإضافة أي معلومات أخرى يرجى الاتصال في أي وقت ترونه مناسبا.

شكرا مقدما على حسن تعاويكم معنا،
وفضلنا بتقديم فائق الاحترام والتقدير،،،

بسام بن خليل طبي
جامعة كارديف متروبوليتان
BATabash@cardiffmet.ac.uk
0096896036686

A-39
### ملاحظة:

الرجاء التكرم بقراءة الإسئلة التالية ووضع علامة (√) على البدائل الأكثر ملاءمة بالنسبة لك مع ملاحظة أنه في حالة عدم توفر الإجابة المناسبة برجاء اختيار البدائل الأخرى مع التفاصيل بعد اختيارك بدرج موجز.

<table>
<thead>
<tr>
<th>البنود الأولية</th>
<th>المعلومات العامة</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 الجنس</td>
<td>□ ذكر □ أنثى</td>
</tr>
<tr>
<td>2.1 العمر</td>
<td>□ أقل من 20 سنة □ 20 – 30 سنة □ 31 – 40 سنة □ أكثر من 60 سنة</td>
</tr>
<tr>
<td>3.1 أعلى شهادة حصلت عليها</td>
<td>□ شهادة الجامعة (بكالوريوس) □ الدبلوم / الدبلوم عالي □ شهادة الدكتوراه □ شهادة الماجستير □ أخرى (إِنْذِكْرُوهَا)</td>
</tr>
<tr>
<td>4.1 الوظيفة</td>
<td>□ طالب في إحدى المرافق التعليمية □ موظف في القطاع الخاص □ جريدة (إِنْذِكْرُوهَا)</td>
</tr>
<tr>
<td>5.1 الجنسية</td>
<td>□ عراقي (إِنْذِكْرُوهَا)</td>
</tr>
</tbody>
</table>

**البنود الثانية: معلومات متعلقة بنجاحك البنكية**

<table>
<thead>
<tr>
<th>البنود الثانيّة</th>
<th>المعلومات المالية</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 الحساب البنكى الرئيسي بالنسبة لك تأليف لأى من البنوك التالية</td>
<td>□ بنك مسقط □ البنك الأهلي □ البنك الوطني العمانى □ أخرى (إِنْذِكْرُوهَا)</td>
</tr>
<tr>
<td>2.2 في معظم الأحيان هل تقوم بزيارة فرع بنكك</td>
<td>□ مرة واحدة في الأسبوع □ لا أراجع البنك أطلالاً □ يومياً □ شهرياً</td>
</tr>
<tr>
<td>3.2 في أي منطقة من المناطق والولايات التالية تقوم عادة براجع فرع بنكك</td>
<td>□ الداخلية □ الاتحادي □ بريفي □ الشرقية □ الظهرة □ مستلم □ تونس</td>
</tr>
<tr>
<td>4.2 أي من الأنظمة البنكية الإلكترونية التالية تستخدم حالياً (يرجى وضع علامة (√) على كل ما تراه مناسبًا)</td>
<td>□ نظام الخدمات المصرفية عبر(Systems) الهواتف المتنقلة (Internet Bank) (ATM) □ نظام الخدمات المصرفية عبر(Systems) الهاتف الثابت (Phone Bank) □ نظام الخدمات المصرفية عبر(Systems) الهاتف العالمي / الشخصي (Internet Bank) PC (Web Bank) □ نظام الخدمات المصرفية عبر(Systems) التلفزيون (TV Bank) □ نظام الخدمات المصرفية عبر(Systems) التلفزيون (Internet Bank) □ أخرى (إِنْذِكْرُوهَا)</td>
</tr>
<tr>
<td>5.2 هل تتعامل مع شركة مصرفية رقمية على شبكة الإنترنت</td>
<td>□ لا □ نعم</td>
</tr>
<tr>
<td>6.2 هل تتعامل مع شركة مصرفية رقمية على شبكة الإنترنت</td>
<td>□ لا □ نعم</td>
</tr>
<tr>
<td>7.2 هل تستخدم نظام الخدمات المصرفية عبر(Systems) الإنترنت</td>
<td>□ لا (الرجاء الذهاب إلى السؤال رقم 12.2) □ نعم</td>
</tr>
</tbody>
</table>
لا يمكنني قراءة النص العربي من الصورة.
### أ.1 (Internet Bank) نظام الخدمات المصرفي عبر الإنترنت

<table>
<thead>
<tr>
<th>لا يوجد</th>
<th>أوافق</th>
<th>لا يوجد</th>
<th>أوافق</th>
</tr>
</thead>
</table>

- النظام المصرفى المصرفي عبر الإنترنت يساعد كسر مواجهة العمليات البنكية بدقه.
- النظام المصرفى المصرفي عبر الإنترنت يوفر للمستخدمين كل المعلومات المالية والبنكية التي يحتاجها المستخدم لنظام
- استخدام نظام الخدمات المصرفي عبر الإنترنت يجعل من السهل التركيز على مسؤولياتي الأخرى المرتبطة بالعمل حيث لا داعي لزيارة البنك عند استخدام النظام
- لا يوجد أن نظام الخدمات المصرفي عبر الإنترنت يفيد في حياتي

### أ.2 (Internet Bank) تعرف على النظام المصرفي عبر الإنترنت

<table>
<thead>
<tr>
<th>لا يوجد</th>
<th>أوافق</th>
<th>لا يوجد</th>
<th>أوافق</th>
</tr>
</thead>
</table>

- نظام الخدمات المصرفي عبر الإنترنت يتوفر من الأمور السابقة لكي
- من السهل بالنسبة لي أن أكون مستخدماً ماهر لنظام الخدمات المصرفي عبر الإنترنت
- أعتقد بأن معرفة كيفية استخدام نظام الخدمات المصرفي عبر الإنترنت تصرف وكيفية من الزمن
- بإعتقاد فإن نظام الخدمات المصرفي عبر الإنترنت يعمر ومن الصعب
- كأنما أعتقد أن نظام الخدمات المصرفي عبر الإنترنت يعتبر من الأنظمة المرنة التي تسهل التفاعل معها
- تفكير تعتمد أن نظام الخدمات المصرفي عبر الإنترنت سهل

### أ.3 (Internet Bank) المعالجات المناسبة لاستخدام نظام الخدمات المصرفي عبر الإنترنت

<table>
<thead>
<tr>
<th>لا يوجد</th>
<th>أوافق</th>
<th>لا يوجد</th>
<th>أوافق</th>
</tr>
</thead>
</table>

- تجميع المتطلبات (نظام خدمات الصرف، موصل الإنترنت، جهاز حاسب أي) اللازمة لاستخدام نظام الخدمات المصرفي عبر الإنترنت متورطة لدى
- استخدام نظام الخدمات المصرفي عبر الإنترنت لا يتعارض مع الأنظمة المعلوماتية الأخرى التي أقوم باستخدامها عبر شبكة الإنترنت
- جميع التعليقات وإرشادات استخدام نظام الخدمات المصرفي عبر الإنترنت متورطة ومن يرغب باستخدام النظام
- يوفر البنك الذي أتعامل معه نسخ خاص (خدمة الزبائن) على مدار الساعة تقدم المساعدة في حالة وجود أي صعوبات تعرض مستخدمي النظام
- نظام الخدمات المصرفي عبر الإنترنت ينتمي مع أسلوب معيشي
- استخدام نظام الخدمات المصرفي عبر الإنترنت متورطة مع جميع متطلبات البنك
4.3 تأثير ثقافة وسلوكيات المجتمع على استخدام نظام الخدمات المصرفية عبر الإنترنت

<table>
<thead>
<tr>
<th>تأثير ثقافة وسلوكيات المجتمع على استخدام نظام الخدمات المصرفية عبر الإنترنت</th>
<th>أوافق بشدة</th>
<th>أوافق</th>
<th>لا أوافق</th>
<th>لا أوافق بشدة</th>
</tr>
</thead>
<tbody>
<tr>
<td>الأشخاص الذين يتوارون على مهتمة (الأهل، الأصدقاء، زملاء العمل) يعتمدون بأنه يجب على استخدام نظام الخدمات المصرفية عبر الإنترنت</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>مسؤولي المباشر بالعمل يشعرون على استخدام نظام الخدمات المصرفية عبر الإنترنت بحيث استطيع التركيز بشكل أفضل على مسؤولياتهم بالعمل</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>عند اختيار إحدى الخدمات البنكية الإلكترونية الجديدة أفضل اختيار الخدمة التي يستخدمها أصدقائي حتى لو لم تكون هي الخدمة الأفضل لتجربتها</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>عند اختيار خدمة بنكية جديدة يكون من المهم جدا بالنسبة لي توفر أرشادات وطرق قواعد استخدام هذه الخدمة وشكل واضح</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>أود أن استخدم نظام الخدمات المصرفية عبر الإنترنت حتى لو البنك الذي أعمل معه غير متمكن من الإجابة على كل ما لدي من استفسارات متعلقة بالنظام وكيفية استخدامه</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ثقافة وسلوكيات المجتمع العامي تسمح للقطاع باستخدام الإنترنت كخطوة أولى لتمكين من إنجاز عملياتها البنكية من خلال نظام الخدمات المصرفية عبر الإنترنت</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>أعتقد أن الدور الأكثر ميلًا لاستخدام نظام الخدمات المصرفية عبر الإنترنت من الإنجاب</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>بشكل عام فإن قرار استخدامي لاستخدام الخدمات المصرفية عبر الإنترنت تطوعي أو غير إجباري</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

5.3 مواقف واعتقادات أفراد البيت فيما يتعلق باستخدام آجزة الكمبيوتر

<table>
<thead>
<tr>
<th>موقف واعتقاد</th>
<th>أوافق بشدة</th>
<th>أوافق</th>
<th>لا أوافق</th>
<th>لا أوافق بشدة</th>
</tr>
</thead>
<tbody>
<tr>
<td>أفضل فكرة استخدام الأنظمة التكنولوجيا الحديثة</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>استخدام التكنولوجيا الحديثة يعتبر أمر محلي إلى النفس وواقع على حد سواء</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>استخدام التكنولوجيا الحديثة يعتبر مملًا بالنسبة لي</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>استخدام التكنولوجيا الحديثة يشعرني بالراحة وعدم الإزعاج</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>التكنولوجيا الحديثة تجعل الحياة أكثر تعقيدًا بعد الإعداد على استخدام إحدى الأنظمة التكنولوجية الحديثة يصبح من الصعب التوقف عن استخدامها</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>أشعر بالملل بشكل سريع عند استخدام الأنظمة التكنولوجيا الحديثة</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>أشعر بكفاية أكبر عند إتمام المهام المتصلة لي باستخدام الكمبيوتر</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>أفضل إنجاز جميع المهام الممولة لي عن طريق استخدام الكمبيوتر</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>تتطلبني مشاعر الفخامة والرفاه من استخدام الكمبيوتر</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>يقتني اعتقاد بأنني متأكد أن أقدم الكثير من المعلومات المخزنة على جهاز الكمبيوتر الخاص بي بالضغط على إحدى المفاتيح بطريقة خاطئة</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.3

<table>
<thead>
<tr>
<th>Internet (Bank)</th>
<th>لا أوافق</th>
<th>أوافق</th>
</tr>
</thead>
<tbody>
<tr>
<td>أن البنك الذي أُتمِّم به لا يُجري بالثقة ويعرِّض على فوائد علاقة</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>أن البنك الذي أُتمِّم به ينفي أن يستخدم وسائل موثقة بحذف</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>تخزين جميع البيانات المتعلقة بحسابات عملائه</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>لدي شعور بالراحة (ولا الارتجاج) إنجاز البنك الذي أُتمِّم به</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>أشع بالأمان عند إرسال بياناتي الشخصية عبر شبكة الإنترنت</td>
<td>لا</td>
<td>لا</td>
</tr>
</tbody>
</table>

7.3

<table>
<thead>
<tr>
<th>Internet Bank (في المستقبل)</th>
<th>لا أوافق</th>
<th>أوافق</th>
</tr>
</thead>
<tbody>
<tr>
<td>لا أُتقن بنظام الخدمات المصرفي عبر الإنترنت حيث خلالها لم تصل صلة مباشرة</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>لا أُتقن بنظام الخدمات المصرفي عبر الإنترنت يتم معالجته بشكل موثوق</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>أنني أُتقن بنظام الخدمات المصرفي عبر الإنترنت في المستقبل</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>أنني أُتقن بنظام الخدمات المصرفي عبر الإنترنت في المستقبل</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>استخدام نظام الخدمات المصرفي عبر الإنترنت هو قرار شخصي</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>توفير وسائل إرشادية وتوجيهية واضحة في استخدام نظام الخدمات المصرفي عبر الإنترنت قد يؤثر في استخدامه في المستقبل</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>معيقات المسابقة باستخدام جهاز الكمبيوتر يساعدني على التعامل مع استخدام النظام في المستقبل</td>
<td>لا</td>
<td>لا</td>
</tr>
<tr>
<td>المستقبلي</td>
<td>لا</td>
<td>لا</td>
</tr>
</tbody>
</table>
هلا ترغب بإضافة أي معلومات أخرى قد تساعدنا على تحديد العوامل التي يؤثر على إعتماد واستخدام نظام الخدمات المصرفية عبر الإنترنت (Internet Bank)، إذا كان هناك أي معلومات إضافية فالرجاء التكرم بذكرها في المكان المخصص أدناه.