AN INVESTIGATION OF THE INTERNET BANKING (IB) ADOPTION,
USE, AND SUCCESS IN SAUDI ARABIA (SA)

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BY

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Dedication

"O my Lord! Let my entry be by the Gate of Truth and Honour, and likewise my exit by the Gate of Truth and Honour; and grant me from Thee an authority to aid (me)." (Holy Quraan 017.080)

(May God Almighty rest his soul in peace).

To

My Parents (who passed away without seeing this achievement), Wife, Son, Daughters and all my Brothers and Sisters

Acknowledgment

Abstract

This thesis attempts to empirically investigate the different factors that have relation with the adoption, use and success (Dependent variables) of Internet Banking (IB). It extended the previous marketing literature and TAM model by investigating different factors that might have relationship with the adoption and use of the IB. In addition to that, and since the success of IB has not been found in the reviewed literature, this study introduces the success variable following the DeLone and McLean (2003) IS success model. This thesis responds to several researchers' calls by conducting an investigation in Saudi Arabia (SA), where it has special socio-economic motives and social values such as Islamic Banking (IsB).

The data of this study were collected through a survey (postal questionnaires), sample (n=1000), which has been conducted randomly using SA's Residential Telephone Directory. A total of 228 usable questionnaires were returned (22.8% response rate). The data were analysed using descriptive statistics method, and a factor analysis was also used to classify the variables into a set of dimensions. Moreover, multiple regression analysis was performed to test the research hypotheses. As a result, the researches' models of adoption, use and success have shown high, good and fair prediction powers (R^2=62%, 39.4% and 30%, respectively), which are comaparable to other studies in the area.

The research findings suggest that awareness, resistance to change, satisfaction, perceived ease of use, self-efficiency, high cost, availability of IsB services online, and income (independent variables) were affecting the IB customers' adoption, use and success in different degrees. The awareness and self-efficiency of the IB were found to significantly affect the adoption of IB, whereas self-efficiency and satisfaction "convenience" significantly affect the use of IB. However, frequency and wide range of the used IB services, satisfaction "time saving and customers' needs fulfilment", income and the availability of IsB services were found to also affect the success of the IB services. Surprisingly, the research findings indicate that security does not contribute significantly to the adoption, use, and success of IB services and that is due to some reasons which is recommended for future studies. It is also essential to highlight that IB customers' satisfaction was found to be a very significant factor in motivating the new adopters to use the services frequently, which will lead to a successful competitive performance. This thesis concludes with implications for researchers, practitioners, and policy makers in addition to research limitations and recommendations for future studies.

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List of Acronyms

ANB: Arab National Bank.

ARBIC: Al Rajhi Banking & Investment Corporation.

ATMs: Automated Teller Machines.

AVE: Average Variances Extracted.

AVR: Automated Voice Response.

BI: Behavioral Intention.

BJ: Bank Al-Jazira.

BSF: Banque Saudi Fransi.

CAGR: Compound Annual Growth Rate.

CDSI: Central Department of Statistics and Information.

CIA: Central Intelligence Agency (US).

CITC: Communication and Information Technology Commission (SA).

CMA: Capital Market Authority (SA).

CMV: Common Method Variance.

CRM: Customer Relationship Marketing.

DSL: Digital Subscriber Line.

DW: Durbin-Watson.

EBPP   Electronic Bill Presentment and Payment.

EFA: Exploratory Factor Analysis.

ESIS: Electronic Securities and Information System.

FDI: Foreign Direct Investment.

GCC: Gulf Cooperation Council (Bahrain, Kuwait, Oman, Qatar, SA & UAE).

GDP: Gross Domestic Product.

GIH: Global Investment House.

GSM: Global System for Mobile Communications licence.

HSBC: Hong Kong and Shanghai Banking Corporation.

HUBS: Hull University Business School.

IB: Internet Banking.

IBAM: IB Acceptance Model.

ICT: Information and Communication Technology.

IPOs: Initial Purchase Offers.

IS:	Information System.
IsB:	Islamic Banking.
ISPs:	Internet Service Providers.
IT:	Information Technology.
KACST:	King Abdulaziz City for Science and Technology.
KFUPM:	King Fahd University of Petroleum and Minerals.
MCIT:	Ministry of Communications and Information Technology (SA).
MPTT:	Ministry of Post, Telegraph and Telephone (SA).
MR:	Multiple Regression
MTMM:	MultiTrait-Multimethod Matrix
NCB:	National Commercial Bank (SA).
OB:	Online Banking.
PB	Per Barrel.
PC:	Personal Computer.
PIF:	Public Investment Fund (SA).
PPP:	Purchasing Power Parity.
RB:	Riyad Bank.
SA:	Saudi Arabia.
SABB:	Saudi British Bank.
SAGIA:	Saudi Arabian General Investment Authority.
SAIF:	SA Investment Fund.
SAMA:	Saudi Arabian Monetary Agency (SA central bank).
SAMBA:	Saudi American Bank.
SANCST:	Saudi Arabian National Centre for Science and Technology.
SaudiNIC:	Saudi Network Information Centre.
SCC:	Saudi Communications Commission.
SCF:	Survey of Consumers Finances.
SCS:	Saudi Computer Society.
SEM:	Structured Equation Modelling.
SHB:	Saudi Hollandi Bank.
SIB:	Saudi Investment Bank.
SN:	Subjective Norm.
SR:	Saudi Riyal.

SSRC:	Saudi Share Registration Company.
STC:	Saudi Telecom Company.
SWOT:	Strength Weakness Opportunity Threat.
TAM:	Technology Acceptance Model.
TPB:	Theory of Planned Behaviour.
TRA:	Theory of Reasoned Action.
UAE:	United Arab Emirates.
UK:	United Kingdom.
UN:	United Nations.
US:	United States.
USA:	United States of America.
USD:	United States Dollar.
UTAUT:	Unified Theory of Acceptance and Use of Technology.
VIF:	Variance Inflation Factor.
WTO:	World Trade Organization.
WWW:	World Wide Web.

Chapter One

Introduction

1.1 Research Background

In Saudi Arabia (SA), the internet was officially made available in 1998, at which point the Saudi Arabian government spent two years designing a centralized control system before offering it for public connection in February 1999. Internet Banking (IB) has been available in SA since 2001 (Lee & Turban, 2001; Alfuraih, 2002). This is late compared to other countries in the region, such as Egypt, Kuwait, Bahrain, the United Arab Emirates (UAE), and Lebanon. Internet technologies necessitated new laws and regulations, some of which have added new burdens to financial institutions and the government.

The SA financial services sector has undergone significant changes over the past 30 years. Until the early 1970s, the sector was bound by restrictions imposed by government regulations (Ramady, 2010). As a consequence, banks in the sector were severely limited in their capacity to compete both domestically and internationally. Each organization relied on traditional branch-based networks to deliver financial services. By the end of the 1990s, most regulations had been changed because the banking sector had experienced the emergence of faster and cheaper technology. The convergence of deregulation and information technology (IT) created a highly competitive environment (Al-Khaldi and Wallace, 1999), and with this, banks in the sector faced mounting pressure to implement rapid change.

SA is late in IB implementation, as a result a practical need in developing a model for the best implementation of the IB services in SA. Although various models are reviewed in Chapter 2; it is necessary to investigate the extent to which gender and

other demographics or personality traits affect IB adoption behaviours along with various social, psychological and contextual influences, especially in SA, where such issues have not previously been addressed (Alsajjan and Dennis, 2010). In addition to that, the motivation for this research largely came from the need to know how a unique country (in term of their traditions and social values such as Islamic values) of SA has adapted to internet technology and particularly to IB.

There are a number of management challenges; government and banks in SA have to address when implementing IB services in order to encourage the adoption, increase the use and enhance the success or overcome the problems or failure of IB implementations. It is important that banks address these issues because the success or failure of IB ultimately depends on whether customers will utilize this type of banking channel. The main intention of IB is to be able to provide personalised banking services to all online customers. In the initial e-banking climate, banks were having less and less of a relationship with their customers, for example, due to the use of Automated Teller Machines (ATMs). Hence, IB can be seen as a way of rebuilding this relationship. As a result, it is very important for banks to develop strategies to encourage their customers to adopt and use the IB and then to enjoy the success of their usage of IB. Customers, once they start adopting IB services, need to be encouraged by banks to re-use the IB service and then they need to be convinced of the benefits of banking through the internet to enjoy the success of their usage of this service. Banks also need to identify ways to overcome the barriers, such as the security concerns of their customers. As IB represents quite a radical change in the banking industry, banks would need to put in extra effort to encourage customers to accept it.

The Saudi Arabian government institutions and banks have realized the importance of enhancing and developing their IT systems by investigating further in the field of electronic banking (e-banking) generally and IB in particular. Investigating the adoption, use and successful implementation of IB and the acceptance of this technology at the customer's level offers some significant challenges. For successful adoption and usage, IB must offer net benefits for users (e.g. how easy or useful it is to use or how compatible it is with the customer's lifestyle and their previous experiences or does it safe their time and money).

In addition, investigating the benefits of IB services alone is insufficient for studying IB behaviour (Lassar et al., 2005); customer service, efficiency and cost effectiveness became the sources of competitive advantage in the recent banking and internet researches. The search for new, lower cost channels of service delivery led banks to consider different ways of reaching customers. Therefore, understanding and establishing the factors (Independent Variables) influencing the adoption, use, and success (Dependent Variables) of IB, from both academic and practical perspectives, is of paramount importance for all stakeholders involved (i.e. government, banks, customers), and for the development of appropriate infrastructures, policies, and IB services. Due to the above reasons, this research has been proposed and sponsored in order to investigate this new and important area of IB in SA.

1.2 Background of SA

SA is the birthplace of Islam and home to Islam's two holiest shrines, in Mecca and Medina. Moreover, SA is considered as a leading producer of oil and gas and holds more than 20% of the world's proven oil reserves. The government continues to pursue economic reforms and diversification, particularly since the accession of SA to

the World Trade Organization (WTO) in December 2005, and promotes foreign investment in SA. A burgeoning population, aquifer depletion, and an economy largely dependent on petroleum output and prices are all ongoing governmental concerns. In the following subsections; the geographic, demographic and economic background of SA will be discussed.

1.2.1 SA Geographic Background

As this study covers the entire geographical area of SA, so it worth to talk about the geographical background of SA. In addition to that, this section intends to explain what are the geographical backgrounds of the main cities and the capital city of SA? As those cities, get impacted culturally with the nearby countries of SA. The Kingdom of SA, having an area of approximately 2,240,000 sq km, occupies 80% of the Arabian Peninsula.

Figure 1.1: SA 13 Provinces
Source: (Saudi.gov.sa, 2012).

SA's borders consist of the Red Sea, the Arabian Gulf; and seven countries: Jordan and Iraq across the Gulf to the north; Kuwait, Qatar, and the UAE to the east bordering the Gulf; whilst Yemen and Oman occupy the southern reaches of the peninsula. SA is divided into 13 provinces, as shown in Figure 1.1; each province is

divided into governorates there being 118 in total. This number includes the provincial capitals, which have a different status as municipalities headed by mayors.

The Riyadh area, also called Al-Wosta (Central Area), is a province of SA located in the centre of the country. It is the second largest province in terms of both area (after the Eastern Province) and population (after Makkah Province). Its capital is the city of Riyadh, which is also the national capital. More than 75% of the population of Riyadh province reside within Riyadh city.

The Eastern Province (Ash-Sharqīyah) is the largest province of SA, located in the east of the country on the Arabian Gulf coast, and has land borders with Kuwait, Qatar, the UAE, Oman and Yemen. The Makkah Province or Mecca Province (Makkah al Mukarrama) is the most populous province of SA, because it contains the Muslims' holy city. It is located in the west of SA and has an extended coastline. Its largest city is Jeddah, which is also SA's main port.

1.2.2 SA Demographics Background

Saudi population figures are approximate, taking into account a high, but now declining birth-rate, and an expatriate population whose numbers reflect the economic climate of the day. SA is amongst the fastest growing nations in the world in terms of population (SAMA, 2008). The population of SA grew threefold from 7.3 million in 1975 to 24.8 million in 2008. A census conducted in 2010 by Central Department of Statistics and Information (CDSI) indicated that the total SA population is 27,136,977; with a 3.2% population growth rate among the population in the 2004 and 2010 census. The high growth rate of the SA population is due to a number of demographic transformations in the structure of Saudi society. These changes are the result of great improvements in living, health, and social conditions over the past

three decades. On the other hand, the overall ratio of males to females is about 55.5% males to 44.5% females (CDSI, 2007). Although the difference between the two genders is not excessively high; females face several barriers and obstacles for participation in public life (listed in Table 1.1).

Barriers	Status
• Difficult for businesswomen to accomplish official business in person without using male intermediary	• Government has now allowed women to submit applications directly without an intermediary
• Lack of training organizations and specialist women-related business programmes	• Chamber of Commerce establishing training programmes
• Difficulty in obtaining required market information	• Special sections of Chamber of Commerce set up to provide information
• Difficulty in qualifying for loans	• Government lending institutions instructed to handle female loan applications on equal basis
• Limited allowable investment sectors	• Industrial zones planned and special investment advisory service from SAGIA[1] set up
• Unavailability of female sections in ministries	• Some progress in this field and some ministries have established women-only sections
• Unclear legal rights of businesswomen with government agencies	• Steps are being taken to ensure that women can correspond directly in their own legal capacity without intermediaries
• Limited networking groups for businesswomen	• Businesswomen associations established to facilitate networking
• No travelling in SA unescorted by male relatives or spouses	• More flexibility and acceptance now to allow mobility in SA based on written approval from next of kin without male chaperones
• Hiring of trained female staff from abroad	• Case-by-case submission to ensure that qualified Saudi females can be employed for position but within SA, mobility for Saudi females is still an issue

Table 1.1: Saudi businesswomen barriers in SA.
Source: Adapted from Ramady (2010).

With regards to age groups in SA, CDSI (2007) revealed that the 37.19% out of the total population belonged to the age group 21-40 years old, 41.65% were younger than 20 years, whereas 21.16% were older than 40 years. In SA, there is a growing debate over the role of women in society. Given how deeply the family values and traditions of the nation are held, SA has been hesitant to embrace fully any development that appears to threaten the traditional family unit. Because women's

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[1] *Saudi Arabian General Investment Authority.*

role in Saudi society has traditionally been the domestic one of wife and mother, the move toward greater female participation in the labour force has been met with uncertainty, debate, and even hostility (AlMunajjed, 2010). In addition to that, although the official Saudi employment laws and regulations do not explicitly meant to minimize the discrimination against women; major regulations regarding discrimination against women in the labour market are limited.

Saudi businesswomen are still widely required to have an authorized male representative to manage their businesses and represent them in government agencies. This practice has led to many cases of fraud and financial loss. On the other hand, girls' public-sector education has not met the demands of the labour market, and there are major gaps between what employers require and what graduates can offer. Moreover, there are not enough university places for women outside education colleges. The Saudi Minister for Education has declared that about 90% of the SA's educational output is not linked to the needs of the labour market (AlMazroui, 2009). In addition to that, SA spent $6 billion last year on foreign-study scholarships for almost 250,000 students and family members, as it seeks to prepare a professional class to play a larger role in running the economy (Platt, 2012).

Finally, in terms of income levels, the number of Saudi nationals who earn less than United States Dollar (USD) 2 a day was 1.63% of the population, or approximately 300,000. However 400,000 families (around 19% of the population) were found to be spending less than SR 3,800 or USD 1,000 a month (Ramady, 2010)[1]. The average wages of Saudi Arabian employees are presented in Table 1.2; this shows the average

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[1] *Although these may sound low; SA pay no tax and cost of living is low (e. g. fuel).*

wages in SA from 1994 to 2008. In 2008, the average wage for males was SR 7,650 whereas for females it was SR 3,100.

	Saudis		Non-Saudis	
	Males	Females	Males	Females
1994	7,298	3,660	2,153	3,133
1995	7,896	3,864	2,142	3,016
1997	7,570	4,144	2,046	2,716
1998	7,473	3,812	1,934	2,740
2000	6,877	3,217	1,763	2,391
2001	6,684	3,151	1,710	2,403
2002	5,984	2,703	1,543	2,221
2008	7,650	3,100	1,650	2,480

Table 1.2: Average wages, in Saudi Riyal (SR), in SA during the period (1994-2008).
Source: SAMA (2009).

The table also illustrates the gradual decline in wage levels for non-Saudis due to the tendency from all government and private sectors to employ Saudis, known as "Saudization"[1], which has affected the wage levels of non-Saudis. With regards to that, it is worth highlighting that non-Saudi employees have been treated as the Saudi employee, as they receive free education, health insurance and that their wages are tax-free. Table (1.2) also shows that the average wage levels of non-Saudi females are higher than those of non-Saudis males; this is because the majority of the females are skilled and specialized employees due to the shortage of skilled females among Saudis, whereas there are both skilled and non skilled employees among non-Saudi male employees. In the following sections, a brief introduction of the e-banking, IB and their associated benefits is presented. Then, the IB in the SA context is introduced and discussed

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[1] *Saudi Arabia recognized very early the need to 'Saudize' the workface. In 1970, the government decreed that 75% of workers in all businesses operating in the country should be Saudi, and that they should receive at least 51% of the company's total salary payment (Ramady, 2010).*

1.3 E-Banking

The subjectivity in the interpretation of the term "e-commerce" has been noted in the literature (Banaghan and Bryant, 1998) and is reflected in the widely varying statistics on current and predicted e-commerce activity. Schneider and Perry (2000) argued that "e-commerce includes so many activities that it can be difficult for managers to decide where and how to use it in their businesses". E-commerce can be defined as merging the process of buying and selling or the exchange of products, services, and information via computer networks including the internet (Turban et al., 2000).

Banks define e-commerce, according to Awad (2000), as consisting of procedures that support commercial activities electronically or via networking between bank-to-bank, bank-to-customer, or bank-to-vendor. The main concern in this study is bank-to-customer networking. Moreover, Ahmed et al. (2003) went further and defined e-banking as the use of the internet as a remote delivery channel for providing services such as opening a deposit account, transferring funds among different accounts and electronic bill presentation and payment.

According to the Basel Committee[1] report on banking supervision (1998), e-banking refers to the provision of retail and small value banking products and services through electronic channels. Thus, in the most encompassing definition, e-banking would range from direct deposits, ATMs, credit and debit cards, telephone banking, and IB, to electronic bill payment and web-based banking. Gkoutzinis (2006) defined e-

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[1] *The Basel Committee on Banking Supervision is an institution created by the governors of the central bank of the group of ten nations. It was created in 1974 and meets regularly four times a year. The Basel Committee formulates broad supervisory standards and guidelines and recommends statements of best practice in banking supervision in the expectation that member authorities and other nation's authorities will take steps to implement them through their own national systems, whether in statutory form or otherwise (eFinancePortal.com, 2008).*

banking as the provision of banking services and the initiation and performance of payments through the banking system by electronic means and other advanced technologies (see Figure 1.2).
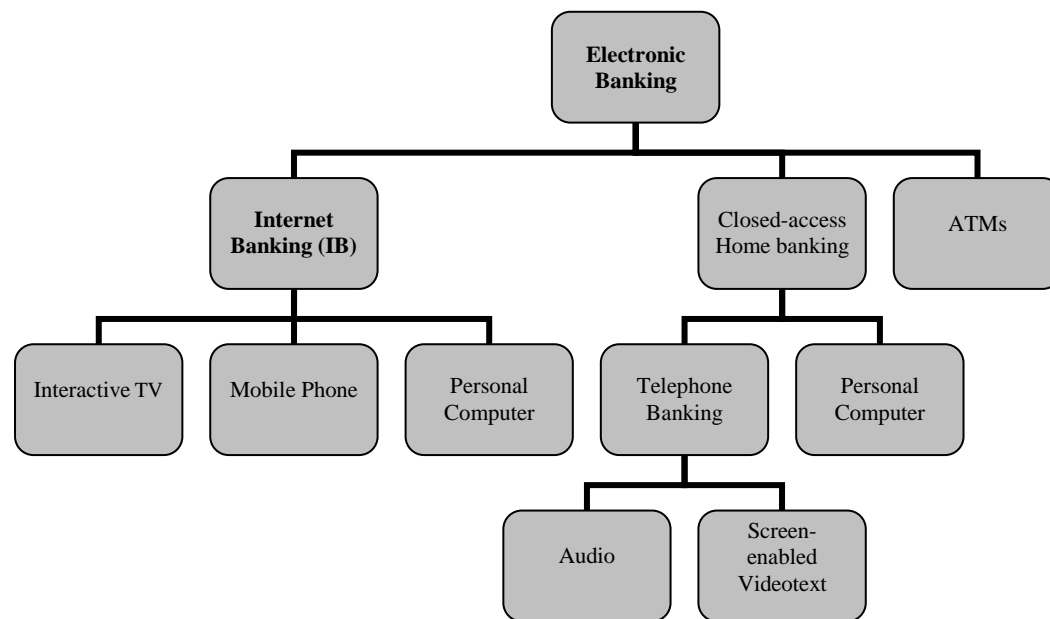
Figure 1.2: Communication methods and access devices in e-banking
Source: Gkoutzinis (2006).

There is no doubt that e-banking is an application of e-commerce in the banking sector. The consumer's willingness to buy financial services through e-commerce was investigated by several studies, such as McKinsey Consulting who conducted a survey via focus groups consisting of 75 urban consumers in Europe. The survey showed (see Figure 1.3) that the consumer's willingness to buy is different for each product (Kshirsagar et al., 2001). It can be concluded from Kshrsagar's study that customers will be less confident with e-banking and IB services; their study indicates that the financial services products require a high level of human contact, and consumers' acceptance level for human contact with financial services products is very high. However, with the IB services products (no human contact), consumers' acceptance level for such products is very low. Therefore, studying the customers' acceptance of

the IB is very important, sensitive, and requires further investigation as suggested earlier.
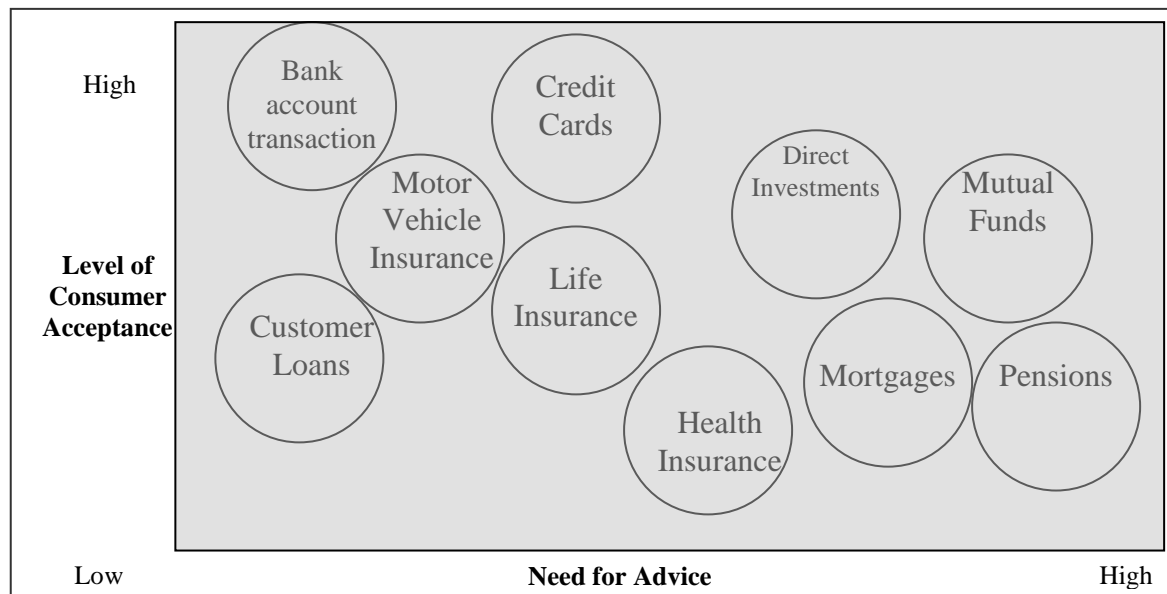
Figure 1.3: Virtual reality: The need for human contact for financial services
Source: Kshirsagar et al. (2001).

1.4 Internet Banking (IB)

Gkoutzinis (2006) defined IB as the provision of e-banking services via the internet, commonly through a Personal Computer (PC) or other access device with internet capabilities. The concept of telephone banking refers to services provided via the ordinary telephone or more advanced screen-enabled terminals. In this research, the terms 'online banking' (OB) and 'IB' are often used interchangeably. Home banking would include any remote delivery channel, including telephone banking. IB gives customers the ability to access virtually any type of banking service (except cash) in any place and at any time. From an economic perspective, IT and computer networks have enhanced the automation, speed and standardization in communications and internal administration, increasing customer convenience and functionality and reducing costs in back-office and front-desk banking functions (Allen, 2003). Openly accessible and globally connected computer networks allow the two-way

transportation of information between the bank and the customer to occur. In the context of the bank-customer relationship, the transmission of data from the bank to the customer and vice versa may result in the establishment, alteration, exercise or termination of legal rights and obligations in accordance with the contract between banks and customers. In that respect, the internet allows the initial establishment of the bank-customer relationship and the electronic delivery and performance of services thereafter within the boundaries set by available technical and legal mechanisms of authorization and access.

It has been argued that the main driver for banks to implement the IB solution is to maintain good relationship with their IB customers, and cut operational costs (Sultan and Rohm, 2004; Lichtenstein and Williamson, 2006). The attraction of self-service is formidable in that banks can save on various factors ranging from reduced staff levels to fewer paper-based bills. It is argued that internet delivery is cheaper than physical channels. A simple transaction for a non-cash payment at a branch is likely to cost the bank as much as 11 times more than over the internet (Sultan and Rohm, 2004). The lower transaction cost expected from IB will translate into cost savings only if transactions can be migrated from higher cost channels to the online services in a way that allows the former to reduce their cost (Sultan and Rohm, 2004; Lichtenstein and Williamson, 2006). Banks also need to be aware that the development, set-up and especially the marketing cost of the online service must be kept under control to ensure that it does not negate the lower transaction costs (Mattila et al., 2003). IB can provide benefits for both banks and their customers. Moreover, some of these benefits may be interconnected. For example, if IB services open new markets, then customers in the existing and the new markets are likely to benefit. In Table 1.3, the benefits, pitfalls, and barriers of IB for both banks and customers are summarised.

	Banks	**Customers**
Benefits	It opens up new markets and new opportunities for banks, i.e., banking becomes easier, faster and cheaper (Sultan and Rohm, 2004; Lichtenstein and Williamson, 2006). Costs will be reduced and information can be delivered directly to target markets (Nelson and Queenie, 2006). Banking services can be provided 24 hours a day, 7 days a week with minimum costs (Moll, 1999). The need for branch buildings will be reduced significantly (Walker, 1999), which will result in an increase in banks' profit margins. (Shah and Siddiqui, 2006) It may also reduce other costs, such as personnel (Jayawardhena and Foley, 2000). Home Bank users, when compared with non-users, are more content with the bank and have higher intentions of repurchase. Mols (1998), Yiu et al. (2007)	IB can provide convenience: 24 hours a day, 7 days a week via internet access (Jones, 2000) Time savings by eliminating the need for going to the bank and queuing (Johnson et al., 1995; Nicholas, 1997) IB can provide customers with a higher degree of control over their finances (Daniel, 1999; Kolodinsky et al., 2004). IB can increase privacy (Nicholas, 1997), (Alsajjan and Dennis, 2010) IB improves transparency. It makes it easier for customers to shop around and find the best deal on offer (Johnson and Christensen, 2000) IB is convenient, easy to use, time saving and appropriate for customers' transaction needs. Adesina and Ayo (2010) IB accessibility, convenience, design and content (Poon, 2008) The dimensions of status, personal finances and investment proved to be U-shaped (Maenpaa et al., 2007)
Barriers	Banks are unsure of the number of people on the internet and how many people use it; this uncertainty makes investment decisions risky (Bellafante, 1995). Banks face electronic attacks, either criminal trespass over the internet (cyber intrusion) or unauthorised access that results in damaged files, programs, or hardware (cyber vandalism) or stolen files (Turban et al., 2003), (Singh, 2004). Banks consider the availability of IT infrastructure as an important barrier (Sathye, 1999).	Convenience of access is at the core of the adoption of any IB application and determines its ultimate success (Keldon and Scott, 2006). The IB barriers are ease of use, price, and risk, including such factors as privacy and security (Keldon and Scott, 2006). Some IB websites may not be available due to workplace `firewalls' (Francis and Buckland, 2001). This will reduce accessibility for the customer. The main barrier to using e-banking is the security concerns (Udo, 2001). Difficult to use IB (Hosein, 2009).
Pitfalls	Providing information about banks and their services, both barriers to market entry and customer switching, will fall (Jayawardhena and Foley, 2000). This scenario will inflame competition. When faced with security problems, online banks have not yet found the best most secure system (Martin, 1998). When launching IB, not every person will want to use the internet for banking nor will everybody have access to the internet or the bank's site (Francis and Buckland, 2001).	IB does not provide face-to-face communication/contact, which some people may prefer (Mendonca and Nakache, 1996). IB can provide many benefits for the customer. However, it also provides some risks (Yousafzai et al., 2005).

Table 1.3: Summary of the benefits and problems associated with IB from the literature.

In addition to the previous IB benefits, it has been argued that the internet offers banks the chance to improve their customer offerings (Pikkarainen et al., 2004; Sultan and Rohm, 2004; Lichtenstein and Williamson, 2006). Consumers want to be able to access their accounts anytime, anywhere and anyhow (known as the triple A). Young (1999) proposed that the internet gives banks the opportunities to offer this availability to their customers, since banking services offered online are not limited by time or distance. Doing business online represents a unique opportunity for financial organisations to interact with customers on a one-to-one basis, thus allowing the personalisation of services. Furthermore, banks can also gather and manage rich information about their customers – all at a fraction of the cost of traditional channels. Building customer loyalty is based on a simple premise: customers and banks both seek a closer relationship. Banks need to continually improve the provided services to ensure that IB does not diminish the relationship with their customers (Gonzalez et al., 2004). If banks wish to survive in the online home-banking age, they have to earn customer loyalty through product features and service excellence rather than allowing loyalty to stem from customer inertia (Daniel, 1999). Customers utilize IB because it offers convenience, saves time, and maintains privacy. Eight out of ten e-bankers in the U.S. ranked convenience and saving time as important; four out of ten e-bankers said it was very important to bank without the need to talk to anyone (George, 2002).

1.5 IB in SA

Initially, some of the Saudi banks adopted the internet as merely another distribution channel because they just wanted to keep up with the changes in the market. However, the hype of e-commerce soon began, and the banks realised the potential growth in this market. Hence, many banks started aggressively marketing the internet as the way to do business. In 1999 and 2000, the first two years in which the internet

was offered in SA, Saudi banks were seeking to improve their relationship with customers by delivering information, news, knowledge, and promotions to them (Lieb, 1999; Jasimuddin, 2001). Internet penetration leading to Online banking (OB) penetration cannot always be guaranteed. Grealish (2002) investigated the adoption of OB penetration and found that the rate of adoption of the internet has varied among different banks in SA. Generally, two classes of internet use in financial institutions can be identified in two categories: information presentation and transaction banking (e.g. electronic payments) (Grealish, 2002).

Information may be provided in connection with one- or two-way communication. Two-way communication allows the customers to send electronic mails (e-mails) to the server in order to ask for further information or make suggestions with respect to the internet site (Kolodinsky et al., 2004). The second class is when banks use the internet for transactional purposes; i.e. as a proper delivery channel. This refers to when a customer can conduct online every service that they would be able to conduct offline, whether that is through the branch, ATM, or telephone. At this level, customers are provided with a range of banking services, such as retrieving account information, bill payment and money management services 24 hours a day, 7 days a week. Some banks go for the completely virtual strategy.

In SA, OB has seen only limited adoption compared to most western countries and other Arab countries, such as Kuwait, the UAE, and Bahrain. These Arab countries claim adoption rates of 29% in Kuwait, 21% in the UAE, and 17% in Bahrain which are equal to or even higher than those of western countries (e.g. 17% in the USA) with approximately 14% of Gulf countries' internet users are having online bank accounts (Al-Far, 2005). The IB has been available in SA only since 2001 (Al-Furaih, 2002).

As a result, laws relating to e-commerce and IB in SA are all relatively new. In addition, banks that offer IB in SA face cultural challenges. The infrastructure support for internet and IB is also relatively new or in a development process which increases the challenges. In the Saudi Arabian financial infrastructure, there are often numerous integrated applications, available across local, wide area, and public networks. The introduction of the internet has added to the uncertaintiesy of maintaining a secure environment.

According to a recent study (CITC, 2010) conducted in SA, IB penetration was 31% among 1,500 internet users and 23% were using internet but not using IB, though they were intending to use IB services in the future (Figure 2.13). This potential is beneficial because it implies an increase in the money movement velocity. This, in turn, results in more money being available in an economy, which can translate to real economic growth and to increases in the standard of living (Haley, 2003). OB customers depend on internet technologies for instant access to their financial and information resources. The security of these resources is currently the subject of significant focus. To have competitive, efficient, and secure OB, institutions must adopt policies, standards, and procedures that allow the business to function well and protect information assets. Saudi banks need to operate at or above the service level of successful domestic and international competitors (Reuters, 2000). However, without specific technical and policy restraints, the internet allows unregulated data to flow across any national border. This runs the risk of abuse from known or anonymous sources. As a result, Saudi Arabian financial institutions must provide a sufficient level of protection and enforce a range of regulations and policies (Al-Furaih, 2002).

1.6 The Importance of the Study

A review of the marketing and IB literature revealed the importance of IB services as a fundamental element in banking development. IB services also reflect the ability of banks to control and guide their entire financial operations. Banks are concerned with using IB to ensure the provision of proper services and guarantee the customer's satisfaction. Despite the importance of IB services to banks and customers, this topic has not been converged in any conclusions; and very little undertaken in the SA context. This lack of research was criticised by Siu and Mou (2005), Kassim and Ahmed (2006), and Alsajjan and Dennis (2010). Until recently, the literature of the IB services could be divided into two main areas: academic studies and technical studies. Academic studies emphasised two dimensions: the marketing of services per se and the benefits resulting from services, and the alternative or intermediate technology to reduce the cost of banking services. The technical studies were related to the structural, operational and technical issues produced by experts to deal with banking services with full privacy and high quality.

This led marketing and IB researchers (e.g. Young, 1999; Jayawardhena and Foley, 2000; Kolodinsky et al., 2004; Sarel and Marmorstein, 2004; Sultan and Rohm, 2004; Gurau, 2006; Yousafzai et al., 2009; Alsajjan and Dennis, 2010) to criticise the excessive concentration on the marketing of IB services, without taking into account the importance of the IB service process itself; the factors affecting customer attitudes towards the adoption of IB services (including socio-economic motives, management practices and the security of IB services); the factors affecting customer attitudes towards the use of IB services; and the factors affecting the success of IB services. The link between these vital issues is a critical one in many developing countries, and

most commentators support the need to improve the effectiveness of IB services (Yousafzai et al., 2009).

Kotler and Keller (2009) defined "adoption" as an individual's decision to become a regular user of a product/service. This emphasis is in keeping with the works of Wungwanitchakornm (2002) and Wang et al. (2003), both of whom argued that understanding IB services requires addressing the adoption process and any transformations over time that might affect that process. Sathye (1999), Wungwanitchakornm (2002), Al-Sabbagh and Molla (2004), Chan and Lu (2004), Cheng et al. (2006) and Alsajjan and Dennis (2010) concluded that in order to understand IB services, the factors affecting the use of IB services need to be considered; these include socio-economic motives, management practices, social values (such as Islamic Banking (IsB)[1] in the case of SA), and the security of IB services.

The consumer decision-making process has been recognized as comprising a series of different steps, such as the consumer being aware that a need exists, and the subsequent search for alternatives to satisfy the recognized need. Once alternatives have been identified, the consumer will be able to compare the possible options in terms of attributes or other values of importance. From among these evaluated

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[1] *While a basic tenant of Islamic banking - the outlawing of Riba, a term that encompasses not only the concept of usury but also that of interest - has seldom been recognised as applicable beyond the Islamic world, many of its guiding principles have. The literal meaning of Riba as it is used in the Arabic language means to increase or add. Technically, it denotes any increase or addition to capital obtained by the lender as a condition of the loan. In simple terms, Riba covers any return on money, whether the interest rate is fixed, floating, simple or compounded and at whatever rate is guaranteed irrespective of the performance of the investment; all are considered Riba and is are prohibited. Riba, in all forms, is strictly prohibited in Islamic tradition as it is considered an unjust return that leads to unjust enrichment. It is commonly understood as "interest" charged or received on lending though the legal definition goes beyond just interest (Institute of IsB & Insurance, 2009).*

options, the consumer will purchase a suitable product or service. The decision-making process is generally concluded by a post-purchase evaluation phase that will result in either satisfaction or dissatisfaction with the chosen alternative (Assael, 1995; Solomon, 2010). Services marketing literature presents an influential discussion indicating that customers must make changes in their behaviours based on the changes that may develop in the service distribution system, as successful implementation of the new systems relies upon customers' willingness and ability to change (Bateson and Hoffman, 1999). Apart from understanding the acceptance behaviour of banking customers towards current technology, additional research is required to understand how this adoption and re-usage process affects the introduction of the new technology regarding its implementation success or failure.

Previouse literature has reviewed the customers' attitudes towards technology acceptance. Such as, Ajzen and Fishbein (1989) who have developed the Theory of Reasoned Action (TRA), which has been widely validated the intention models that have been confirmed effective in predicting and explaining the adoption behaviour across a wide variety of fields. Ajzen (1991) has extended TRA by including another construct to predict both behavioural intention and behaviour. The extended model has been called Theory of Planned Behaviour (TPB). TPB has been used by several studies to various situations in predicting the performance of behaviour and intentions to adopt the technology (Man, 1998; Cheung et al., 1999). Moreover, Davis (1989) developed the Technology Acceptance Model (TAM) theory, which is an adaptation of TRA for predicting the adoption and usage of IS. TAM has been used widely by several studies to predict user acceptance of information technologies (Venkatesh & Davis, 1996, 2000; Lee & Turban, 2001; Wang et al., 2003). TAM suggests that technology adoption decisions are determined by an individual's affective response

(attitude) towards the use of the innovation. Other empirical evidence, Davis et al. (1989) have refined TAM to include attitudes towards using technology rather than just thinking about technology. This study has extended TAM model by investigating different factors that might have relationship with the adoption and use of IB which have not been considered in TAM model. In addition to that, and since the success of IB has not been found, in the reviewed literature, studied or investigated previously; this study has introduced the success variable following DeLone and McLean (2003) IS success model, as the net benefit of using the IS has been used as a measure for IS success.

Additionally, Brooksbank and Taylor (2002), Al-Sabbagh and Molla (2004) and Cheng et al. (2006) argued that it is necessary to understand the factors which relation with the success of IB services, such as people characteristics, use conditions and the mechanism of adoption, in order to be able to formulate the marketing practices and strategies of IB services. Therefore, this research has extended the scope of previous IB studies by adding the success variable to the research model and investigating the different factors that might affect the success of IB services. Thus, this research is important in the following two distinct ways:

- It addresses how understanding three vital issues when dealing with IB, specifically, adoption, use, and success, can improve the knowledge of IB services in order to produce effective marketing strategies.
- This research will enhance the ability of the banks and government institutions in developing countries, especially in SA, to benefit from empirical findings; therefore, it has the potential to introduce new policies addressing IB development.

The success of IB is determined not only by banks or government support but also by customers' acceptance of such type of sensitive services. The customer has a great

influence on the adoption of IB (Pikkarainen et al., 2004), as they eventually elect on whether they will use IB based on their individual needs. If the service can clearly show the benefits and how they address customers' wants, then customers are more likely to use IB. Previous IB research has mainly focused on innovation adoption and use in the context of North America and Europe (Pikkarainen et al., 2004) and to some degree, other areas in the Middle East such as Turkey (Polatoglu and Ekin, 2001). In addition to that, in most of the developing countries, IB services are normally accompanied by a lack of infrastructure and slow growth (Sathye, 1999). There are, therefore, substantial challenges related to economic conditions, and the resource constraints of these countries will inevitably undermine the ability of their banking systems and any instruments for developing IB services. The search for specific, cause-effect and correlational relationships that can aid comprehension of the current situation of IB services is important, and any findings have the potential to enhance the ability of such communities to respond better to IB services. The topic of this research is, therefore, very important and worthy of investigation.

Even though there have been a number of studies relating to IB services, several factors provoked further research in this area. First, there is a need for more investigation to address the role of adoption, use, and success, separately, in IB services (Yousafzai et al., 2009). Second, many of the marketing studies have tended to be concerned with theoretical arguments (Polatoglu and Ekin, 2001; Pikkarainen et al., 2004; Yousafzai et al., 2009). Third, very little attention has been given to research into IB services in SA (Alsajjan and Dennis, 2010). It is; therefore, appropriate to investigate the application of this approach within the SA environment. Fourth, only a few empirical studies (e.g. DeLone and McLean, 1992; Lockett and Littler, 1997; Beckett, 2000; Al-Gahtani, 2001; DeLone and McLean, 2003) have

investigated IS and e-banking services studies using success standards; whereas no studies in the reviewed literature investigated the IB success factors. Therefore and based on the above discussion, they grew to become the research questions and aims for this PhD thesis as presented next.

1.7 Research Questions

As introduced above this thesis aims to make a novel contribution to knowledge, following Corley and Gioia's (2011) theoretical contribution model[1], concerning the extent to which different factors impact the customer's attitudes towards the acceptance of IB. This aim can be translated into the following main research questions:

1. To what extent do different factors have relationship with the adoption, use and success (Facets) of IB services? And what is the relative importance of each factor on each facet?

Moreover, given the aforementioned research background it was considered necessary to complement this main research question with a supplementary one:

2. What is the relationship between the adoption, use and success of IB services? Obviously in the subsequent chapters of this thesis the main and supplementary questions will be further clarified, elaborated, restated, and operationalised giving rise ultimately to several empirically investigated key research questions of this thesis. It should thus suffice in this introductory chapter to briefly indicate that the pursuit of answers to these questions was structured in terms of the following research objectives:

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[1] *We distill existing literature on theoretical contribution into two dimensions, originality (incremental or revelatory) and utility (scientific or practical). We argue for a revision in the way scholars approach the utility dimension by calling for a view of theorizing that would enable theories with more "scope" (both scientific and practical utility). We also argue for an orientation toward "prescience" as a way of achieving scope and fulfilling our scholarly role of facilitating organizational and societal adaptiveness (Corley and Gioia, 2011).*

1.8 Research Aims and Objectives

The objectives of this research are as follows:

1. To establish how the SA IB market differs from IB markets in other countries.

2. To investigate the relations between different factors (e. g. demographics) and IB services, from the customers' point view, in developed and developing economies.

3. To capture the most relevant factors that relate, from customers point view, with the IB market in SA.

4. To understand the main differences between the different facets (adoption, use and success) of IB services

5. To understand the relations between the customers' attitudes and the a) adoption, b) use, and c) success of IB services in SA.

6. To establish well developed theoretically and tested empirically models of the aforementioned facets.

7. To recommend some innovative ideas, solutions and improvements, which can contribute to the enhancement and development of the adoption, use, and success of IB services in SA, based on the successful tested models.

1.9 Research Methodology

Methodology can be defined as a system of explicit rules and procedures upon which research is based and against which claims for knowledge are assessed (Creswell, 2003). The research philosophy of this study is derived from a positivistic paradigm in which the research problem stems from the literature itself. The researcher seeks to cover a set of gaps in the literature, which are demonstrated clearly in Chapters 2 and 3. The positivistic paradigm, employing a cross sectional survey methodology, was considered as the most appropriate approach for conducting this research.

The population of this research is defined as all SA residents that have the right to hold an IB account in SA and adopted the IB services. A sample size of 1,000

respondents was selected randomly from a total of 2.9 million names listed in the Saudi Residential Telephone Directory. The reason for selecting a large sample was to obtain a sufficient number of representative responses.

A questionnaire was used as the main method of data collection. In addition, secondary data in the form of statistics and reports were selected to triangulate the research findings. Pilot work was undertaken prior to the distribution of the final version of the questionnaire as several drafts were developed and revised in response to feedback received from referees and panel experts. Despite some obstacles during the fieldwork, such as harsh weather, the procedures of administering the questionnaire were implemented well and 1,000 questionnaires were distributed by post, 228 of which were returned and considered useable. External and internal validity were established in this research. Reliability was tested through the "alpha" test and all the scales in the questionnaire were considered reliable. Descriptive statistics in terms of means and frequencies were used to meet the descriptive objectives. In addition, Multiple Regression[1] (MR) analyses were used to test the research hypotheses and questions.

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[1] *Multiple regression (MR) is based on correlation, and is a family of multivariate techniques used to explore the relationship between one continuous dependent variable and a number of independent variables that must be continuous (interval/ratio) and/or, dichotomous. MR includes three main types: 1) standard or basic MR; 2) hierarchical-MR; and 3) stepwise-MR. Standard MR and hierarchical MR are commonly used in management and organizational research; whereas, stepwise regressions are mainly used when there is no initial plan (or no theory exists) and in applied research where the researchers are interested to find the best prediction variables. MR has a number of assumptions about the data that need to be carefully considered by any researcher (discussed in chapter four) in order to avoid violating these assumptions and endanger the value of the study in terms of reliability and validity (Field, 2005).*

1.10 Thesis Structure

In addition to this chapter, the thesis comprises a further six chapters. A summary of each chapter is presented in this section. Chapter 2 provides an overview of and insights into the evolution of the banking industry, and provides critical review of the international empirical literature and investigate different factors that impact the customer's attitudes towards the adoption, use and success of IB. The different technologys' models which impct the customers' attitudes have been discussed. This chapter concludes by presenting the theoretical model and hypotheses of this research. In part of this chapter, several models are presented, such as Hoxmeier's model, Morgan and Hunt's theory, the TRA, and the TAM. In general, the model of this research extends the TAM model in addition to the combined effects of new variables that have been added to the model from the literature (e.g. Sathye, 1999; Pikkarainen et al., 2004; Lichtenstein and Williamson, 2006).

Chapter 3 delineates the banking challenges as it provides an overview of the banking sector and its history, with an evaluation of the factors that relates to the IB services. It also reports the major infrastructure features relevant to banking and telecommunications in SA.

Chapter (4) started with an introduction of the research method adopted in this study as it presented the different types of research methods by providing the advantages and disadvantages of the features of each method. The research methodology, design and data collection methods utilised to achieve the research objectives are discussed and justified, and the discussion shows that the survey method (postal questionnaire technique) was the most suitable methodology. This is followed by a detailed discussion of the research population and sample. The chapter continues with a

description of the stages of the questionnaire construction and pre-testing, features of the covering letter, and the final content of the questionnaire. The survey administration and response rate[1] are then presented. The chapter also presents the operational definitions for each variable incorporated in the theoretical model, which includes the three interrelated dependent variables, namely, the adoption, use, and success of IB services, and several independent variables. The chapter concludes with a discussion of the validity and reliability and how the research dealt with the missing data and ends with the proposed inferential statistics, such as reliability, factor, correlation, and MR analysis.

Chapter Five provides the detailed results of the descriptive statistical analyses. The analyses of the sample and demographic characteristics data are discussed. This chapter also presents the descriptive statistics results.

Chapter 6 focuses on the data analysis inferential analysis, findings, and their discussion via the statistical methods used in testing the research hypotheses. This chapter provides answers to the research key questions and considers the effort undertaken in the previous chapters. The research key questions have answered after extracting the result from the MR tests. This chapter also provides a general discussion and concludes with a summary for the chapter.

This thesis concludes in Chapter 7 with a summary of the major findings of this study followed by discussion. In addition to that, the research contributions to knowledge have been also presented; listing and summarizing a total of five contributions to knowledge. This chapter also highlight the research's implications for policy makers, practitioners and the academic researchers. Finally, the chapter concludes with the

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[1] *Response rate = total number of response / total number in sample – (unreachable + ineligible).*

limitations of the research and recommend some areas for further research. Additional material follows Chapter 7, such as list of references, and eleven (11) appendices, located at the end of this thesis which is considered part of this research as supplementary and complementary material. As applicable a reference has been made to any one of these appendices within the texts, paragraphs, sections, and chapters of this research.

Chapter Two

Literature Review and Hypotheses Development

2.1 Introduction

As introduced in chapter one, this chapter aims to undertake a critical review of the international empirical literature and investigate different factors that have relationships with the adoption, use, and success of IB. This study mainly lies at the intersection of three main facets. The first is the IB adoption decision-making process. The second is the determinants of IB acceptance and actual use among the IB users. The third facet is the success of the IB implementation by the IB customers. Therefore, this chapter presents a review of existing literature on these three main facets. Literature of several widely validated models/theories is reviewed and linked to the aforementioned three main IB facets (adoption, use and success), which forms the theoretical background of this research. Following this introduction, detailed review of the different models and theories regarding IT and IB adoption, usage and success will be discussed in order provide a brief description of the research conceptual model development process. Furthermore, a review of the different aspects of IB adoption, use and success, will be undertaken in order to provide a better explanation for each facet, in addition to the different IB customer attitudes that might affect each aspect.

This chapter also highlights customer attitudes towards IB and the factors that affect them. From literature, the general and different definitions of "attitudes" are presented. Moreover, customer attitudes towards IT and IB are highlighted, showing the different attitudes between SA, developing, and developed countries. Furthermore, some other additional IT and IB adoption, usage and success theories and models and customer attitudes are introduced; in order enhance the knowledge and models

choices which have been used in the field of e-commerce. Finally, the different factors that affect customer attitudes towards IB will be explored in depth. This chapter also presents the theoretical background of the proposed models of IB towards the adoption, use and success. This chapter will be concluded with the proposed conceptual models and hypotheses of this research.

2.2 Models, theories and customer attitudes towards IT

Several studies have examined consumer perceptions of the variables that delay the development of online shopping (Rhee and Riggins, 1999). It is essential to understand and analyse customer attitudes in order to devise appropriate marketing strategies that will satisfy their needs and demands. According to Klobas (1995), attitude affects a person's behaviour when using a particular form of IT. There are a number of definitions of attitude in the marketing literature[1]. Some of these definitions are presented next.

Fishbein and Ajzen (1975) offered a definition of attitude, saying that the "major characteristics that distinguish attitude from other concepts are its evaluative or affective nature", while Allen et al. (1992) defined attitude as "the categorization of an object on an evaluative continuum". However, Jeong and Lambert (2001) show that customer attitudes towards using a website, together with the perceived usefulness of the website information, and the information quality, are the best indicators for predicting consumers' purchasing behaviour. The degree of personal

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[1] *The word 'attitude' comes from the Latin aplus, which means "fitness" or "adaptedness". In the eighteenth century, attitude generally referred to physical posture, and to this day, the word can denote a general physical orientation with respect to something else. In the nineteenth century, Charles Darwin used the word in a biological sense to mean a physical expression of an emotion. Indeed, well into the twentieth century, researchers linked attitudes with physiological tendencies to approach or avoid something (Petty and Cacioppo, 1981).*

involvement is the most important factor that shapes consumers' purchasing behaviours (Anguelov et al., 2004). Reynolds (2000) noticed that education, income, and attitude towards purchasing online products were statistically important in forecasting consumers' travel purchasing behaviours (Mattila et al., 2003). In the following sub-sections, the different models and theories regarding IT and IB adoption, usage and success are presented and reviewed, to provide a solid background for the research's conceptual model.

2.2.1 Consumer Behaviour Matrix

Beckett (2000) developed the consumer behaviour matrix as shown in Figure 2.1. He stated that the customers for financial services would be either rational-active or relational dependant. Rational-active behaviour represents consumers who are interested in the product and confident that they are going to purchase the product with definite outcomes. However, relational-dependent behaviour is when the consumer is involved with the product, but feels that the choice environment is highly uncertain and that they lack the skills or knowledge to reduce that uncertainty.
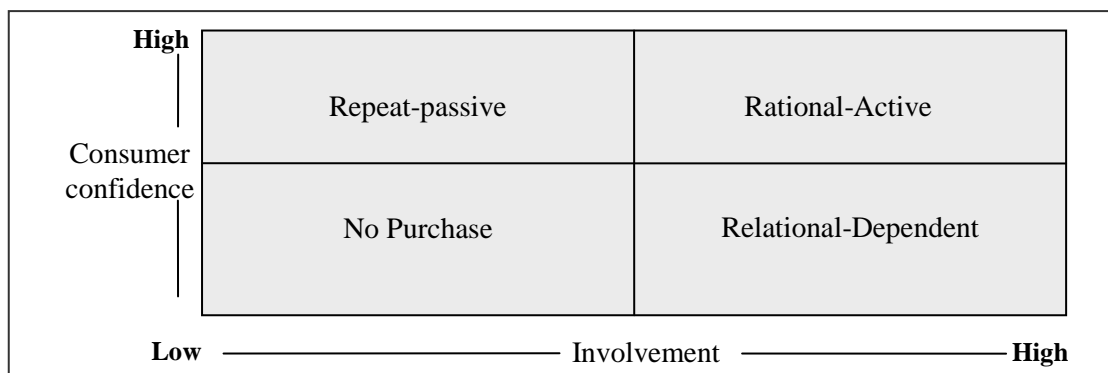
Figure 2.1: Consumer behaviour matrix.
Source: Beckett (2000).

With regards to e-banking and IB, customers' involvement with the financial services products is high and the customers' confidence level is low. Therefore, customers' behaviour with the IB services products will be relational–dependent, according to

Beckett's matrix. Thus, the customers' skills with and knowledge about the IB services will be very important factors, and will have an effect on customer behaviour because of their involvement with the product. Beckett (2000) suggested that financial services firms can no longer be all things to all people, providing a broad range of financial instruments to all types of customers through all distribution channels. In other industries, clear strategic choice and implementation underpin competitive advantage (Porter, 2009). In the following sections and subsection the customers' attitudes towards the IT and IB adoption, usage and success will be reviewed and highlighted, in addition to a comparative study between the developed and development countries to find out the main difference among the different regions.

2.2.2 Hoxmeier Model

In the US, several factors that influence attitudes towards computer utilisation as well as user confidence in electronic mail were examined by Hoxmeier et al. (2000). The data of this study were collected using a questionnaire targeting 194 university students. The main aim of their study was to understand the relationship between gender and technology. They developed a model which suggested that "experience, gender, and technology background influence attitudes about e-mail". Their study identified two distinct types of computer experience, namely, general experience (awareness) and electronic communication skills (self efficiency). The study revealed that stand-alone experience and electronic communication skills resulting from education and/or training, such as use of the internet, will characterise the general experience of the users. Figure 2.2 illustrates Hoxmeier's model.
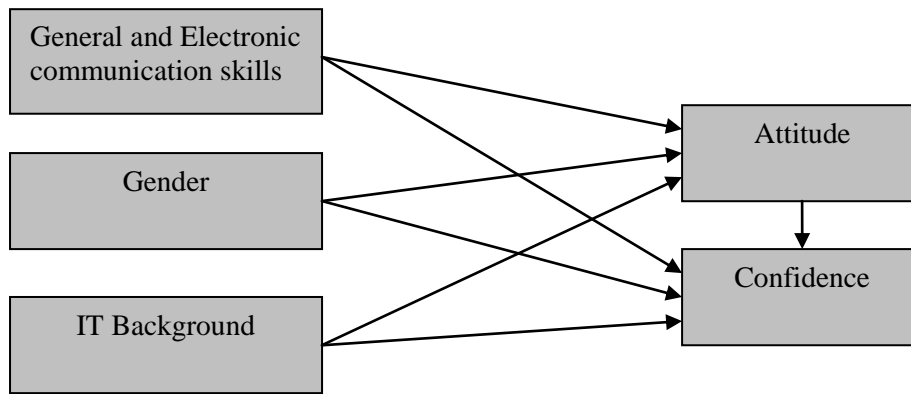
Figure 2.2: Email attitudes and confidence.
Source: (Hoxmeier et al., 2000).

2.2.3 Theory of Reasoned Action (TRA)

The TRA developed by Ajzen and Fishbein (1989), is a model that relates attitude to behaviour (Figure 2.3). They postulated that attitude, social influence, and intention form the basis of behaviour. Attitude is defined by Ajzen and Fishbein (1989) as an individual's positive or negative feeling associated with performing a specific behaviour.
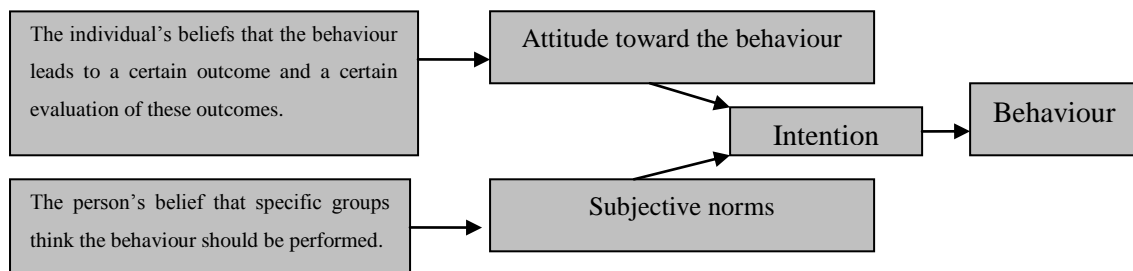
Figure 2.3: The Theory of Reasoned Action (TRA).
Source: (Ajzen and Fishbein, 1989).

An individual's normative beliefs of what others think should or should not be performed determine the Subjective Norm (SN). The likelihood of performing an action is known as intention, as illustrated in Figure 2.3. Ajzen and Fishbein (1989) pointed out that the intention of an individual can accurately reflect the predicted behaviour under three conditions: "the intention and behaviour measures must correspond, intentions and behaviour must be in the same time intervals for assessment, and the behaviour must be voluntary" (p. 44). So, to predict purchase

behaviour, it is necessary to measure a person's attitude toward performing that behaviour, not just the general attitude toward the object around which the adoption behaviour is.

Different IS studies have recommended intention models from social psychology as a potential theoretical foundation for research on the determinants of adoption behavior (Swanson, 1982). In addition to that, Fishbein and Ajzen's (1975) TRA widely validated the intention models that have been confirmed effective in predicting and explaining behavior across a wide variety of fields. The determination of consciously intended behaviors has been concerned TRA (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980) composed of attitudinal, social influence, and intention variables to predict behavior. TRA assumes that an individual's behavioral Intention (BI) to perform a behavior is jointly determined by the individual's attitude toward performing the behavior and SN, which is the whole perception of what relevant others may think an individual should or should not do. Several studies have successfully examined different situations to predict the performance of behavior and intentions, by using TRA (Prestholdt et al., 1987; Timko, 1987).

Regardless the efficiency of the TRA predictability across several researches, it becomes difficult if the behavior under study is not under full volitional control. As a result, Ajzen (1985, 1991) extended TRA by including another construct called perceived behavioral control, which predicts both Behavioral Intention (BI) and behavior. The extended model is TPB. The border limits of TRA have been extended by TPB in an effective way to more specific directed actions. TPB has been applied by several studies to various situations in predicting the performance of behavior and

intentions and it has been found provides a better predictive power of behavior than TRA (Man, 1998; Cheung et al., 1999).

2.2.4 Technology Acceptance Model (TAM)

However, Davis (1989) developed a theory, TAM, which claims that "perceived usefulness is crucial to the attitudes and intentions to use a technology tool" (p.325). TAM is an adaptation of TRA specifically for modelling user acceptance of IS. It provides an explanation of the determinants of computer acceptance that is general, and is capable of explaining user behaviour across a broad range of end-user computing technologies and user populations. Similar to the finding of the TRA, the TAM stipulates that the behaviour is voluntary. The TAM is illustrated in Figure 2.4.
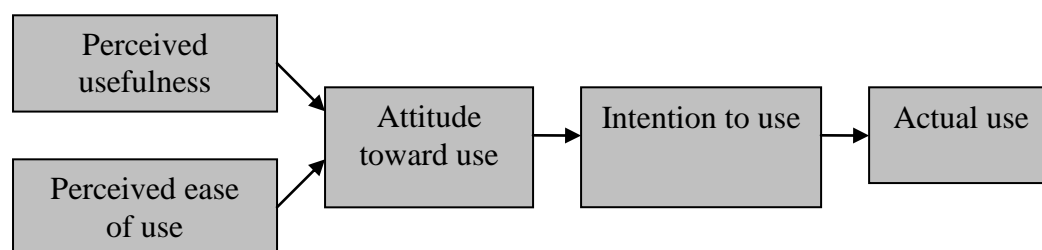
Figure 2.4: The Technology Acceptance Model (TAM).
Source: (Davis, 1989).

The TAM shows that two particular beliefs, perceived usefulness and perceived ease of use, are most relevant to the acceptance behaviours of IS. Davis (1989) defined perceived usefulness as "the degree to which an individual believes that using a particular system would enhance his / her job performance" and perceived ease of use as "the degree to which an individual believes that using a particular system would be free of physical and mental effort". The TAM states that the two beliefs determine the attitude towards using IS. The attitude towards using IS determines the behavioural intention to use IS. Moreover, the behavioural intention to use ISs leads to the actual use of IS.

TAM has been used widely by several studies to predict and make it clear of user acceptance of information technologies (Venkatesh & Davis, 1996, 2000; Lee & Turban, 2001; Wang et al., 2003). The importance of using TAM is the ability to describe how individual customer beliefs and attitudes relate towards using 'something', in this case IB, and whether or not the system will be used. TAM, as illustrated in Figure 2.4, suggests that technology adoption decisions are determined by an individual's affective response (attitude) towards the use of the innovation. Based on empirical evidence, Davis et al. (1989) have refined TAM to include attitudes towards using technology rather than just thinking about technology. With regards to that, TAM was considered as a strong tool for investigating and studying the adoption and usage of IB.

King and He (2006) conduct a statistical Meta-analysis of TAM as applied in various fields using 88 published studies and his findings revealed that TAM to be a powerful, highly reliable, valid and robust predictive model that may be used in a variety of contexts. Many researchers have suggested that external variables may be added to TAM as a way of improving the model's predictive power (Davis et al., 1989; Davis, 1993; AlSukkar, 2005). While perceived usefulness and perceived ease of use, that influence individuals to accept a technology, have been widely investigated in intention studies, factors that may affect the degree of influence of the two constructs and other constructs towards the adoption and then usage decision behaviour should also be investigated separately, as different factors are impacting customers attitudes during the adoption and also other factors impacting their usage differently. Therefore, this study extends TAM model by considering different additional external variables and examining their extent of relation with adoption and usage. In addition to that, this study has also extended TAM model by adding another main facet which

is the success, when users enjoy the benefit of their IB usage following DeLone and McLean (2003) IS success model, which will be presented in detail in the next subsections.

In this study, it is postulated that the degree of influence different constructs have on the adoption of IB; is different than factors which have influence on the actual usage of the IB, and is also different than those factors have influence on the success of IB. In the context of this study, the different factors which might impact each facet (i.e. adoption, use and success) may suggest differences in the extent of their influences when using the IB services in a country such as SA, where you can find different ethnic groups with different cultures.

2.2.5 DeLone and McLean's (D & M) Model of IS Success

The success of IS is one of the most researched topics in IS literature. DeLone and McLean (1992) became aware of the complex reality that surrounds the identification and definition of the IS success concept. They organized a large number of studies on IS success and presented a comprehensive and integrative model. In their study, they identify six main dimensions for categorizing the different measures of IS success: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. They developed an IS success model in which these categories are interrelated, shaping a process construct. Their model proposes that system quality and information quality singularly and jointly affect both use and user satisfaction. Additionally, the amount of use can affect the degree of user satisfaction as well as the reverse being true. Use and user satisfaction are direct antecedents of individual relation; and, lastly, this relation with individual performance should eventually have some organizational impact (DeLone & McLean, 1992, pp. 83, 87) (Figure 2.5).
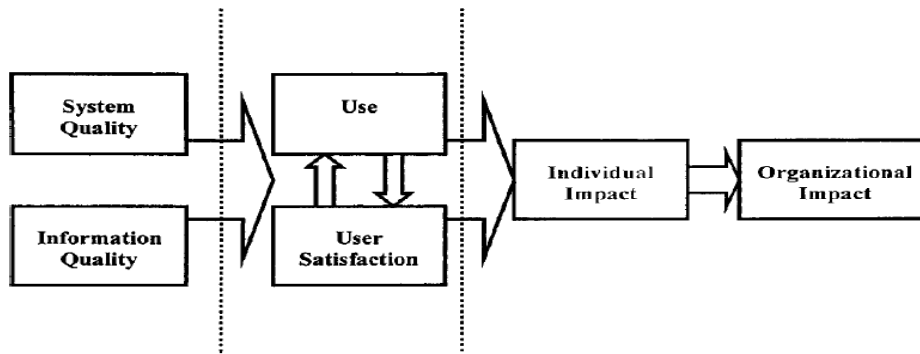
Figure 2.5: D & M IS Success Model
Source: (DeLone and McLean, 1992).

DeLone and McLean (1992) stated that their model is "an attempt to reflect the interdependent, process nature of IS success" (p. 88), undertaking to describe the IS success concept and the causes for the success. The creation of the D&M IS Success Model was driven by a process understanding of IS and their relations. This process model has just three main components: the creation of a system, the use of the system, and the consequences of this system use (benefit). Each of these steps is a necessary but not sufficient, condition for the resultant outcome(s). For instance, without system use, there can be no consequences or benefits. As suggested by D & M IS success model the research's model used customer's satisfaction as one of the measure for success when customers are enjoining the benefit of using the IB services. In the following sections a detail review of the different factors that have effect on the customers' attitudes towards IT and IB adoption and use in SA and different countries is presented to provide

2.3 Customer Attitudes towards IT and IB

2.3.1 Attitudes towards IT and IB in SA

Al-Khaldi and Wallace (1999) tested the customers' attitudes in their studies by using Triandis' theory (1980), which suggested that behaviour is determined by attitude, social norms, habits, and expectations. Their study surveyed 200 "knowledge" workers in two different countries, SA and Canada, and focused on attitudes and

technology use in SA. Several differing attitudes towards PCs and their uses were discovered and reported in their study, such as a lack of knowledge, social values, and infrastructure availability.

Regarding this issue, belonging to a Muslim country, the Saudi Arabian banks should provide different IsB products and services (see Chapter 3, section 3.5) to maintain the relationships with the Muslim customers for a longer period (Archer and Karim, 2002; Faroqui, 2002). Bley and Kuehn (2004) surveyed business students' knowledge of the financial aspects of Islamic and conventional banks in the UAE. The sample of their research included a relatively high proportion of students who were knowledgeable about general financial practice, and comprised students of both an Arabic and non-Arabic Muslim background. The major finding was that Muslim students preferred Islamic bank services for religious reasons. As a result, IB services in SA banks should be satisfactory, and it should be convenient by maintaining IsB services to improve customer loyalty.

In 2001, Al-Ashban and Burney conducted a study to explore the adoption of tele-banking among bank customers in SA, focusing primarily on the impact of customer characteristics on adoption and use. First, it explored the relationship of usage in relation to time period (i.e. exposure) - a predictor of adoption –, and, second, examined whether and which, if any, demographic variables determine a person's usage of tele-banking. It also examined trends across any key characteristics in SA. The respondents were grouped according to age, education level, occupation, and income class. The results of this study provided important lessons for the banking industry, as the findings indicated that, in general, Saudi consumers' income levels and education positively play a vital role in their adoption of the tele-banking

services. For individual dimensions of tele-banking, income levels, education, and age are particularly significant factors, while occupation and age affect the desire for expansion, and income level and education are related to usage frequency over the time.

Al-Gahtani et al. (2007) conducted a study about culture and the acceptance and use of IT in SA. He used the Unified Theory of Acceptance and Use of Technology (UTAUT) model (Figure 2.6) which is credited with explaining a larger proportion of the variance of 'intention to use' and 'usage behaviour' than have preceding models. He examined the relative power of a modified version of UTAUT in determining 'intention to use' and 'usage behaviour' by using a sample collected from 722 knowledge workers using desktop computer applications on a voluntary basis in SA. Al-Gahtani et al. (2007) study used to estimate the Saudi predicted latent constructs, BI (adoption) items that reflected an individual's self-assessment of his (or her) likelihood to continue to use computers for an indefinite period. According to them; their measure differs from other measures in the literature that have used time-specific measures. They wanted to capture a self-assessment of likely continuing computer usage. On the other hand, frequency of using computers and self-reported has been used to estimate the latent usage construct. They found that the model explained 39.1% of intention to use variance, and 42.1% of usage variance. In addition, he produced and tested hypotheses regarding the similarities and differences between the United States (US) and Saudi validations of UTAUT in terms of cultural differences that affected the organizational acceptance of IT in the two societies.
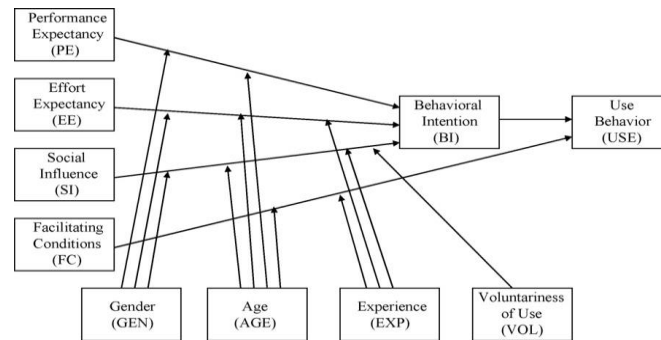
Figure 2.6: Unified Theory of Acceptance and Use of Technology (UTAUT).
Source: Al-Gahtani et al. (2007).

Al-Somali et al. (2008) investigated the acceptance of OB in SA by identifying the factors that encourage customers to adopt OB in SA. The research constructs were developed based on the TAM and incorporated some particularly important control variables. The survey method was used, so a sample of 400 people was randomly chosen from the Saudi community. Then, structural equation modelling was applied to test the measurement model to determine the internal consistency reliability and construct validity of the multiple items scales used to operationalise the study variables. The findings of their study suggest that the quality of the internet connection, the awareness of OB and its benefits, the social influence, and computer self-efficacy have significant effects on the perceived usefulness and perceived ease of use of OB acceptance. Education, trust and resistance to change also have a significant relation with the attitude towards the likelihood of adopting OB. Also, it is important to emphasise the high explanatory power (R^2) achieved in their study in which attitudes towards use explain 83% of the variance in adoption intention.

Alsajjan and Dennis (2010) conducted a comparison study between SA and the UK and proposed the IB Acceptance Model (IBAM), which is a revised TAM, to measure consumers' acceptance of IB. Data were collected from 618 questionnaires that were distributed to university students in the UK and SA. The results suggested the importance of attitude to the extent that attitude and behavioural intentions emerge as

a single factor, denoted as attitudinal intentions. Structural equation modelling was used to confirm the fitness of the model, in which perceived usefulness and trust fully mediated the impact of SNs and perceived manageability on attitudinal intentions. The invariance analysis demonstrated the psychometric equivalence of the IBAM measurements between the two country groups. At the structural level, the influence of trust and system usefulness on "attitude intention" varied between the two countries, emphasizing the potential role of cultures in IS adoption. They recommended, for future research, investigating the extent to which gender and other demographics or personality traits affect IB adoption behaviours along with various social, psychological and contextual influences, especially in SA, where such issues have not been addressed previously.
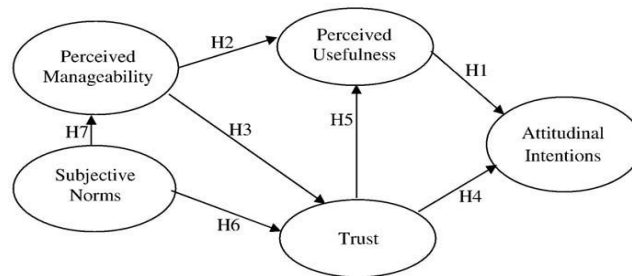
Figure 2.7: IB Acceptance Model (IBAM).
Source: Alsajjan and Dennis (2010).

Mahdi (2011) examined the trust in and the security of e-banking services in Saudi commercial banks. The design for the study used a quantitative research methodology. Data were collected by means of questionnaires, utilizing snowballing approach; 500 questionnaires were distributed to banks' including Saudi and non-Saudi banks' customers. The findings revealed how Saudi banks' customers had very high trust in using the e-banking services and how customers of Saudi banks believed strongly that, compared with their non-Saudi customers; e-banking services are more secure.

2.3.2. Attitudes towards IT and IB in Developing Economies

In Kuwait, Aladwani (2001) suggested that security, regulations, consumer privacy, and the bank's reputation as being the main future challenges in the adoption of IB by Kuwaiti banks. However, in Turkey, Polatoglu and Ekin (2001) studied the influence of the diffusion of IB, and suggested nine factors. These were "relative advantage", "observability", "trialability", "complexity", "perceived risk", "type of group", "type of decision", and "marketing effort". The authors found that the more reliable the IB services were, the more usage there was of the IB services by the customers.

In South Korea, Suh and Han (2002) concluded that trust is one of the most significant beliefs in explaining a customer's attitude towards using IB. As suggested by the TAM, customer perception of the usefulness and ease of use of IB also affects attitudes significantly. At the same time, behavioural intention to use IB is highly related to customers' attitudes, perceived usefulness, and trust. These results imply that customers rely on trust in on-line environments that are processing sensitive information. In Taiwan, Wang et al. (2003) examined the extension of the TAM model, by investigating the factors that lead to behavioural intention in IB adoption. They reported that perceived ease of use, and perceived usefulness had a positive effect on people's intention to adopt IB.
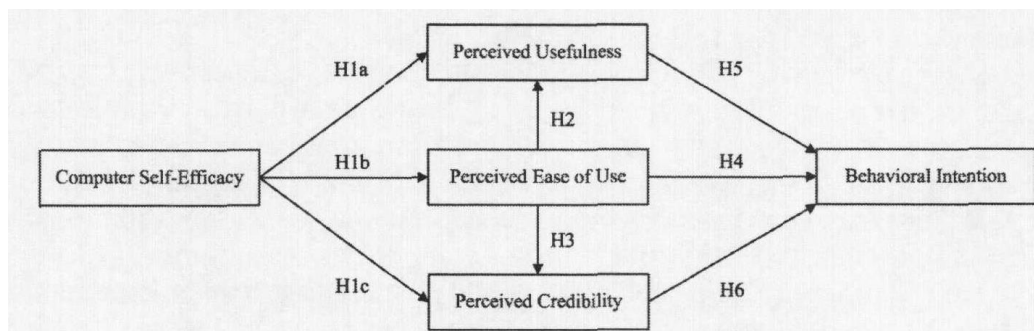
Figure 2.8: Factors that lead to behavioural intention in IB adoption.
Source: (Wang et al., 2003).

Like most Muslim countries, Malaysia has a dual banking system; that is, it has a conventional banking system and an IsB system. There are two Islamic banks in Malaysia: the Bank Islam Malaysia and Bank Muamalat. The early 1990s saw the emergence of Automated Voice Response (AVR) technology. Using AVR technology, banks offered tele-banking facilities for financial services. With further advancements in technology, especially with the introduction of IB services, banks were able to offer services through PCs owned and operated by customers at their convenience by using proprietary intranet software (Sadeghi & Farokhian, 2011). A study was also conducted in Turkey by Akinci et al. (2004). This study attempted to describe the IB phenomenon primarily by analyzing the attitudes, behaviour, and preferences of highly educated consumers. The distinguishing demographic, attitudinal, and behavioural characteristics of IB users and non-users were investigated in an academic institution. The analyses provided evidence that there were significant differences between the two groups with respect to demographic profiles, attitudinal properties, and preferences for service delivery channels. While the IB users were middle-aged, male, more technology-oriented, and convenience-minded, non-users were either younger (below 30 years of age), or older, more traditional-channel oriented, and hesitant consumers, lacking confidence in IB services compared to the services delivered at bank branches.

Kassim and Ahmed (2006) conducted a study in Qatar investigating the trust-relationship commitment model[1] (MH94) to an IB setting by adding "attraction to use

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[1] *Morgan and Hunt (1994) (MH94) developed a trust-relationship commitment model that strongly advocated making trust central to rational exchange. The consumer adoption of electronic commerce will proceed only after the risk perception associated with the use of electronic media is alleviated. The trust-relationship commitment model discussed some factors that shape customer attitudes towards the use of e-commerce.*

IB services" as a new factor. The study showed that in testing whether attraction might be related to belief in and use of IB, this research sampled 276 bank customers' responses via a cross-sectional survey in Doha, Qatar. It was found that attraction has a significant positive relation with relationship commitment with their banks. Their study has serious implications for managers, bankers, and policy makers, as it suggested that it is the customers' attraction with banks that influences the differences on actual commitment. The findings of their study suggest that, in order to develop acceptance and to attract more users to IB, it is not going to be enough to make interaction with the system easy.

In Malaysia, Poon (2008) explored the determinants of users' adoption momentum of e-banking by examining the factors affecting the adoption of e-banking services. Anonymous questionnaires were randomly administered to a total of 500 respondents from different states within Peninsular Malaysia. These questionnaires were administered face to face; thus, the response rate was satisfactorily high. Ten attributes were tested: convenience of usage, accessibility, features availability, bank management and image, security, privacy, design, content, speed, and fees and charges. The results from this study indicated that all elements of the ten identified factors are significant with respect to the users' adoption of e-banking services. Privacy and security are major sources of dissatisfaction, and have significantly affected users' satisfaction. Meanwhile, accessibility, convenience, design and content are sources of satisfaction. Besides, speed, product features availability, and reasonable service fees and charges, as well as the bank's operations management factor are critical to the success of e-banks. The results revealed that privacy; security and convenience factors play an important role in determining the users' acceptance of e-banking services with respect to demographic segmentation of age group,

education level and income level. Belkhamza and Wafa (2009) confirmed also that the security issues and system risks of e-commerce are the major determinants of the adoption behaviour in Algeria.

In India, Safeena et al. (2011), by using regression analysis, they found that perceived: usefulness, ease of use, and risk are important determinants of OB adoption. This study met the desired objective but suffered from one setback: the relatively small size of the sample limited generalization of the outcome of the study. As a total of 300 questionnaires were distributed by mail to student customers of the institute who use IB services, from which 116 responses were obtained indicating 38.67 percent rate of return. Their study was conducted to explore the factors influencing intentions to adopt IB services. They suggested replication their study on a wider scale with more IB customers and with different national cultures is essential for the further generalization of the findings.

Masocha et al. (2011) found that the vitality of technology utilisation by banks in establishing competitiveness in rural areas in South Africa is unarguable. The computer-mediated environment has profound implications particularly in the banking sector and it is widely acknowledged that customers increasingly require instant gratification through the use of new technologies. Their study provides primary information to guide banks in structuring their marketing strategies, quality improvements and business processes on the backdrop of rural milieus. A sample of 100 respondents from various banks found in Alice in South Africa was utilised in the primary research surveys. Importantly, the majority of the respondents indicated that they were influenced to conduct their banking activities with a bank which uses

advanced modern banking technologies. However, recent banking methods such as cell phone and IB reflected very low levels of usage by customers.

Nasri (2011) investigated the factors influencing the adoption of IB in Tunisia. The purpose of this study was to determine those factors that influence the adoption of IB services in Tunisia. A theoretical model is provided that conceptualizes and links different factors influencing the adoption of IB. A total of 253 respondents in Tunisia were sampled: 95 were internet bank users, and 158 were internet bank non users. Factor analyses and regression techniques were employed to study the relationship. The results of the model showed clearly that use of IB in Tunisia is influenced most strongly by convenience, risk, security and prior internet knowledge. Only information on OB did not affect intention to use IB service. The results also suggested that demographic factors, specifically, occupation and education level, significantly affect intention behaviour toward the adoption of IB. Finally, their paper suggested that an understanding of the factors affecting intention to use IB is very important to the practitioners who plan and promote new forms of banking in the current competitive market.
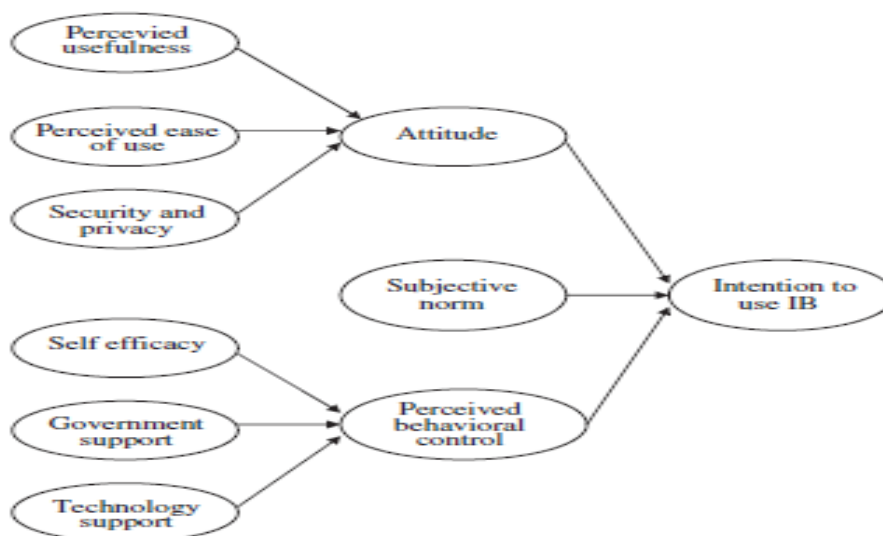
Figure 2.9: Factors influencing the adoption of IB in Tunisia.
Source: (Nasri, 2011).

Mansumitrchai and Chiu (2012) conducted a study in the UAE investigating the factors affecting the adoption of IB. IB has been utilized for many years in the UAE, and the number of IB adopters has increased steadily. The main focus of this study was to identify the characteristics of UAE consumers and their attitudes toward IB. Factor analysis suggested that seven characteristics are important for IB adoption: compatibility, difficulty, security, trust, third party concern, status, and human contact. An analysis of variance showed that adopters and non-adopters differed in their attitudes toward three factors of adoption, namely, compatibility, trust and human contact. No significant differences were found between the attitudes of adopters and of non-adopters toward the issues of security, third party concern and status. An interesting finding was that human or physical contact and trust were the most important factors for non-adopters.

In Romania, Moga et al. (2012) conducted a study investigating the effect of trust and security in e-banking adoption. The consideration given to e-banking by the current traditional banking customers may be due to changes in the banking consumers' lifestyle, with this lifestyle becoming compatible with the new way of conducting banking services online. However, the literature related to e-banking shows that trust and security are among the central factors that influence banking customers' acceptance of the service. The purpose of their study was to review measures taken by the government of Romania and major banks in the country in tackling the issue of trust and security in e-banking. In particular, the study focused on reviewing legal provisions instituted by the related ministry regarding e-banking practices and the strategies taken by banks to address the security concerns about the service. Based on the review, it was found that Romania has legal frameworks in place and banks have also adopted measures to address the issue. However, whether or not these measures

are effective in alleviating banking consumers' security concerns is as yet uncharted and needs to be investigated.

2.3.3 Attitudes towards IT and IB in Developed Economies

In the USA, Fram and Grady (1995) conducted a study, using an online survey, which focused on internet buyers from an online consumer perspective. They found that most concerns condensed into a collection of transaction issues, such as a lack of credit card security, vendors not being fully identified, and a lack of payment alternatives. Likewise, Then and Delong (1999) identified "fear of doing financial transactions over the Internet" as the most significant barrier that prevents online browsers from becoming online buyers. Security concerns in this context refer to consumers' beliefs that online companies are not able to protect their transaction's information from being stolen during transmission or storage (Salisbury et al., 2001; Belanger et al., 2002), and these concerns have a notable impact on an individual's decision to buy online (Yang and Jun, 2002).

There are several models that provide a strong basis of knowledge about attitudes towards technology and its acceptance. According to Sagi (2003), many recent studies on attitudes and the acceptance of PCs, the Web and e-commerce, are based on the technology-acceptance work of Ajzen, Fishbein and Davis (1989). Simon (2001) focused on his study on culture and gender regarding website perception. His study found that culture and gender influence perception of using IT, and the influence of gender differs between cultures. For example, married customers are more likely to use the internet than are unmarried ones. Moreover, Zhang et al. (2002) surveyed students in China and the USA and found that prior IT experience and gender are important factors in forming attitudes about IT in general and e-commerce in

particular. In the next sections, the popular models and theories in the field of customer attitudes toward using IB are highlighted. Liao and Cheung (2002) identified that individual expectations regarding accuracy, security, transaction speed, user-friendliness, user involvement, and convenience were the most important attributes in the perceived usefulness of internet-based e-retail banking in China,,

In Australia, Sathye (1999) studied the factors affecting the adoption of IB by Australian consumers. The sample for his survey was drawn from individual residents and business firms in Australia, with a sample size of 1,000 users; 1,000 questionnaires were posted, using the Australian telephone directory to obtain addresses, and the response rate was 59%. His study found that security concerns, resistance to change and a lack of awareness about IB and its benefits stand out as being obstacles to the adoption of IB in Australia. Figure (2.10) shows Sathye's model, and it focused on six factors: security, ease of use, awareness of service and its benefits, reasonable price, no resistance to change, and availability of infrastructure. The Wallis Report (1997) stated that new technology adoption by the majority of the customers depends, mainly, on these factors.
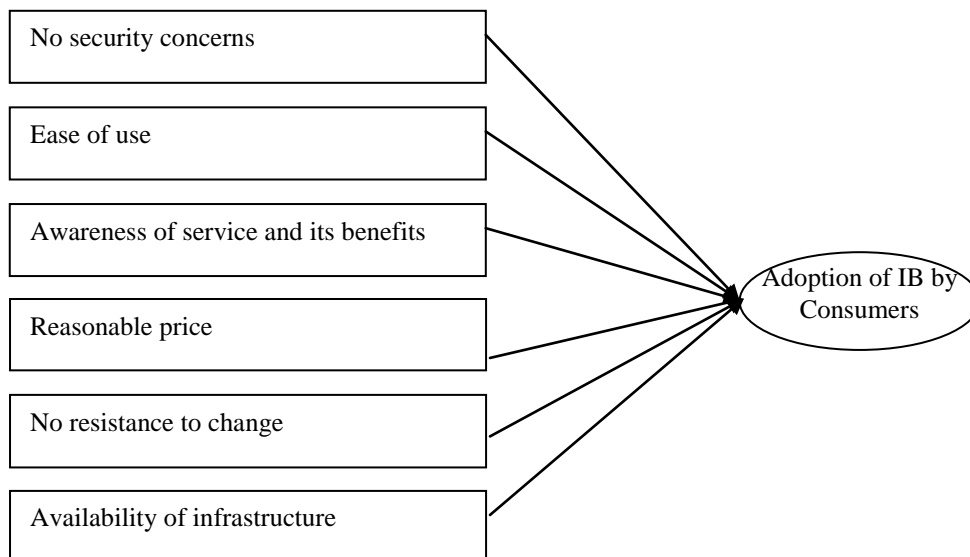
Figure 2.10: Sathye's model of IB adoption.
Source: (Sathye, 1999).

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In Finland, Karjaluoto et al. (2002) showed that prior experience with computers and technology, and attitudes towards computers influence both attitudes towards OB and actual behaviours. Their study revealed that, among these factors, prior computer experience had a significant relation with OB usage while positive personal banking experience seemed to have an effect on both attitudes and usage, with satisfied customers intending to keep with their current delivery channel.

In the UK, Howcroft et al. (2002) studied the consumers' existing financial services behaviour and assessed their attitudes towards home-based services, such as Tele-Banking and IB. Some of the data of this study were collected by questionnaire and the remainder were collected by conducting focus groups. The questionnaire was sent to a cross section of 4,000 UK consumers aged 18 years and above. This resulted in 351 responses, of which 286 were usable (usable response rate of 7.5%). The data were analyzed using frequencies, cross tabulation and chi-square tests of statistical significance. The findings revealed that younger aged customers were found attracted with using the IB services than the older customers. Gender factor has been found encouraging or discouraging utilizing the IB services, as female were found less encouraged to use IB. In addition to that security has been found also significant factors for encouraging or discouraging the consumers' use of IB as customers' fears of error are discouraging customers' usage of IB services.

Previous studies that looked into IB adoption were based on TAM and the diffusion of innovations theory. Wungwanitchakornm (2002) identified a different set of variables to frame a model of IB adoption and other IB customer concerns regarding some other specific, current and future banking services. In addition to the, cost, service awareness, convenience, demographic factors such as age and income variables;

social values and social characteristics have been found impacting the customers' attitudes towards the adoption of IB. In addition to different factors; this research utilized the social values to introduce the religious factor to investigate its relation with the customers' attitudes toward the IB services in a country such as SA. Wungwanitchakornm's (2002) model is presented in Figure 2.11:
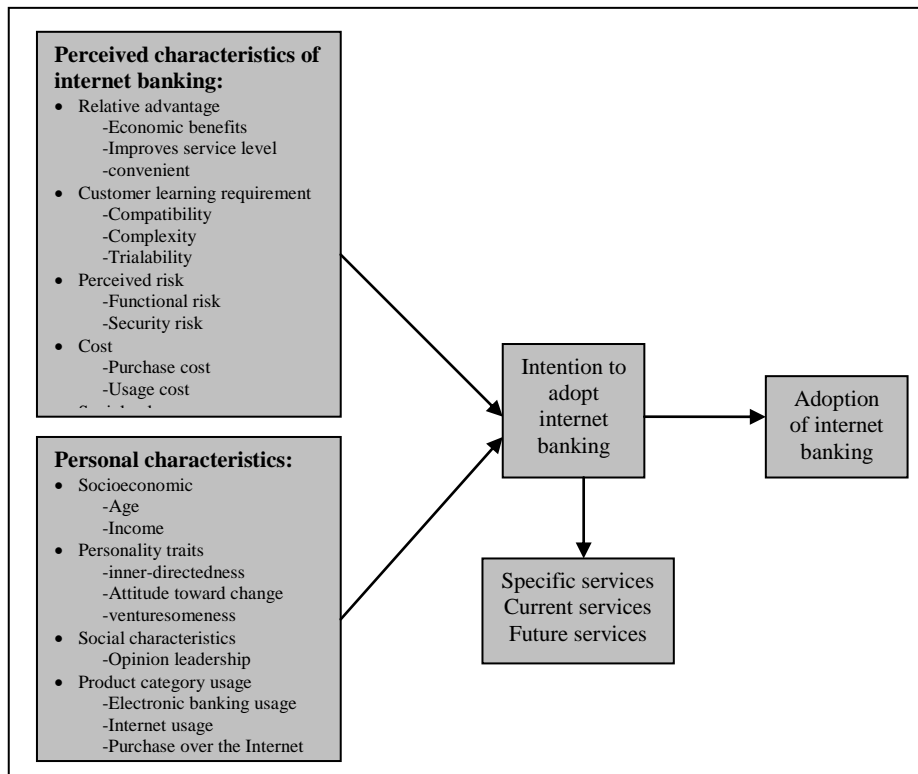
Figure 2.11: A model for IB adoption.
Source: (Wungwanitchakornm, 2002).

In Finland, Mattila et al. (2003) found that income and education factors had a significant effect on the adoption of IB among elder consumers. However, perceived difficulty in using computers and a lack of personal experience in e-banking were found to be the main barriers for adoption. The data of this research were collected by means of a questionnaire sent by post to 3,000 individual bank customers in Finland. The survey sample consisted of three consumer segments (non-users, new users, old users) that differed in terms of IB experience. Three questionnaires were partly

tailored to these groups. After a follow-up round, a total of 1,201 questionnaires were received, of which 1,167 (response rate 38.9) were analyzed using factor analysis.

Yousafzai et al. (2003) extended an area of IS research into a marketing of financial services context by looking into the element of trust and risk in e-banking. A conceptual model of trust in e-banking was proposed with two main antecedents that influence customers' trust: perceived security and perceived privacy. The antecedent variables were moderated by the perceived trustworthiness attributes of the bank, which includes benevolence, integrity, and competence. Trust was defined as a function of the degree of risk involved in the e-banking transaction, and the outcome of trust was proposed to be a reduction in the perceived risk, leading to positive intentions towards the adoption of e-banking. Their study provided several insights into the role of perceived security, privacy, and trustworthiness in e-banking. Their study also highlighted the importance of using security and privacy as two distinct analytical concepts, even though they may be conceptually related.

In the US, Khan (2004) found that distance to the closest bank branch does not affect the likelihood of OB use by a household. The results suggested that online channels may be viewed as a supplement to other, more traditional channels. This study also found that the relationships of various individual and bank specific characteristics with the OB use changed from 1998 to 2001, because of the rapid diffusion of the internet in the late 1990s and the corresponding rise in the availability, acceptance, and familiarity of the internet as an additional business channel. The data of his study were analyzed using regression analysis and were collected by interview, using a secondary data through an existing survey conducted by the Survey of Consumers

Finances (SCF) from the US Federal Reserve board. The SCF interviewed about 4,309 households in 1998, and about 4,449 households in 2001.

In Finland, Pikkarainen et al. (2004) developed a theoretical model, Figure (2.12), which was an extension to TAM. This model was developed based on the literature review and a focus group interview with four business professionals from the banking sector; it is a model indicating the acceptance of OB. The model consists of six factors, namely, perceived usefulness, perceived ease of use, perceived enjoyment, information on OB, security and privacy, and quality of internet connection, which they posited would have an effect on the acceptance of OB.
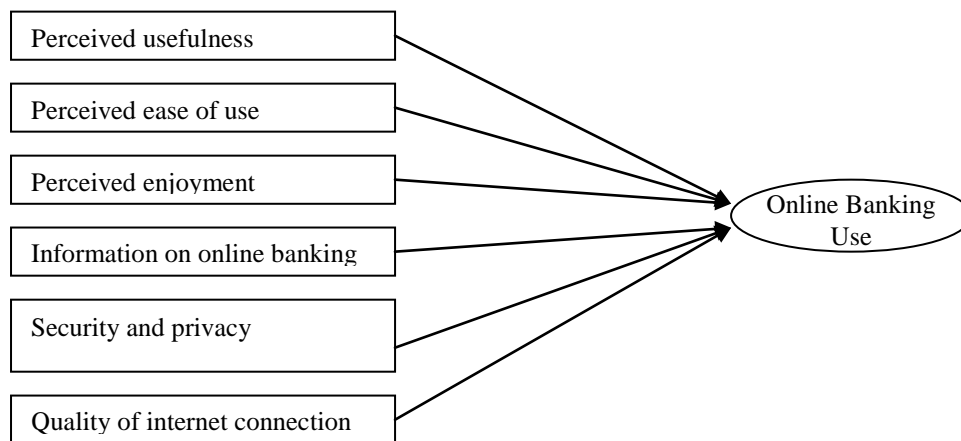
Figure 2.12: Pikkarainen et al.'s model of IB use
Source: (Pikkarainen et al., 2004).

Lichtenstein and Williamson (2006) developed theoretical framework in Australia from themes identified from the literature review. Some other themes were identified by participants in focus group interviews when making their banking service delivery channel choices and these were selected as factors in the model. On the other hand, the temporal sequence for some factors was suggested by the way participants linked these factors in the collected data. The framework shows that a bank must first attract banking customers' attention to the IB service before the customers will consider IB.

However, unless the customers have a high level of internet accessibility at home or at work, they are unlikely to consider using IB.
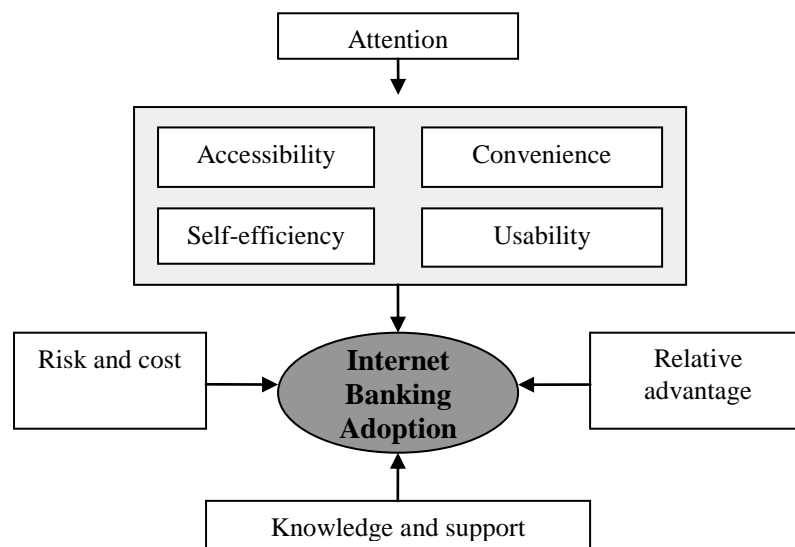
Figure 2.13: Lichtenstein and Williamson's model of IB adoption.
Source: (Lichtenstein and Williamson, 2006).

The model (Figure 2.13) also allow customers to assess whether it is convenient to conduct their banking that way (convenience), how usable the application appears to be (usability), and their perceived competence at internet use and banking application use (self-efficiency). The four factors of accessibility, self-efficiency, convenience and usability are interrelated, as will be shown later. The customers also consider whether the perceived relative advantages of IB compared with other banking forms outweigh the perceived risks and costs. In addition, the availability of sufficient support and in-depth knowledge from the bank and its employees contribute significantly to the adoption decision.

Corrocher (2006) examined the determinants of IB adoption among Italian retail banks; his study aimed to investigate the nature of IB in relation to traditional banking activity. In doing so, his study analysed the role of firm-specific and market-specific characteristics in affecting the decision to provide financial services via the internet.

The data were gathered from the available dataset that lists all the adopters of IB per month in Italy between September 1995 and December 2000. In order to analyse the effect of explanatory variables on the hazard rate, he adopted Cox's approach[1] to the proportional hazard (Kiefer, 1988; Greene, 1997) for the estimation of the model. His study found that the adoption of IB depends upon the characteristics of traditional banking activities, particularly in terms of existing networks of distribution and existing customers. First, banks with a high branching intensity adopt IB more slowly than do banks with only a few branches in place. Second, adoption is negatively affected by the existence of a large customer base, once we control for assets. An important consequence of this is that the provision of financial services over the internet is a strategy directed more at attracting new customers than at strengthening the relationship with existing ones.

In Finland, Maenpaa et al. (2007) found previous knowledge and prior experience of IB services significantly influence the customers' perceptions towards the adoption of IB services. The data for this study were collected using personal, face-to-face, structured interviews as part of a nation-wide range of consumer study in Finland. The sample was created using quota sampling so as to be representative of the Finnish population; 300 active users of IB, aged between 15 and 74, comprised the sample for this study, and 281 responses were received. A principal components analysis was carried out on all the chosen dimensions for their study to provide a single measure for each dimension.

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[1] *In order to analyse the effect of explanatory variables on the hazard rate, researchers adopt Cox's approach to the proportional hazard for the estimation of the model. This method is a semiparametric approach to survival analysis. It does not require the probability distribution* F(t) *to be specified and utilises regression parameters in the same way as generalised linear models.*

Lee (2009) conducted a study to investigate the effect of perceived risk and benefit on customers' behavioural intention to use OB and to clarify which factors are more influential in affecting the decision to use OB. He examined five specific risk facets – financial, security/privacy, performance, social and time risk -and found that "the intention to use OB is adversely affected mainly by the security/privacy risk, as well as financial risk". These findings have been supported by another recent study conducted by Hua (2009) regarding OB acceptance in China. Hua (2009) showed that perceived ease of use is of less importance than privacy and security and clarified that "security is the most important factor influencing user's adoption".

Hosein (2009) identified areas in which banks could improve or modify their services to increase the adoption rate of IB. Data were gathered from the US's non-IB users via a survey questionnaire. The results from the respondents were analyzed using Structured Equation Modelling (SEM) from which the hypotheses were tested and conclusions were drawn. This analysis indicated that the R^2 for 'willingness to adopt' was 0.141 (14.1%), reflecting that the model does not provide a strong explanation of the variance. This indicates that the model cannot be used as a good method of explaining what causes these differences and is not useful in predicting 'willingness to adopt', or 'intent to use' IB. Also, the R^2 for 'perceived usefulness' was 0.447 (44.7%) and 'perceived ease of use' was 0.322 (32.2%), which represent a strong explanation of the variance of these endogenous variables. His study revealed that customers find it difficult to use IB, leading to a decrease in the adoption of IB.

Mangin et al. (2011) focused in their study on the importance of the impact of two external latent variables, 'price' and 'convenience', on the latent variable 'perceived usefulness' of OB in a Canadian environment; the model highlights the predictive

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importance and the accuracy of the results. The results for the Canadian on-line banking environment are quite similar to those of previous investigations in Spain and explain without any ambiguity the level of 'perceived usefulness' in the TAM Model (see section 2.2.4 and Figure 2.4). The model is strongly supported in a Canadian banking environment, as the influence of the 'perceived usefulness' on 'attitude towards using' is very strong as well as the effect of 'attitude towards using' on the 'intention to use' of banking on line.

Yousafzai et al. (2012) conducted a study in the UK to deepen the understanding of customers' actual IB behaviour by combining the construct of technology readiness with the TAM and demographics, such as age and gender, into one integrated framework. The results indicated the importance of customer-specific factors in predicting actual behaviour. Technology readiness, age, and gender moderate strongly the beliefs-intention relationship. Customers with varying levels of technology-related views and demographics hold different beliefs about technology. The relationship between usefulness and behaviour was stronger for younger males with high levels of optimism and innovativeness (explorers and pioneers), whilst the relationship between ease of use and behaviour was stronger for older females with a high level of discomfort. Greater understanding of seemingly established relationships could improve the design of the service and the development of differential marketing strategies aimed at driving adoption and allaying rejection. Table (2.1) provides a summary of the above reviewed international literature with a comparasion of the main findings of these studies in the developed countries, developing countries and SA. However, additional list of literature is presented in appendix (A).

Country	Author	Factors affecting attitudes towards IT & IB
In SA	Al-Khaldi and Wallace (1999)	lack of knowledge, social values, and infrastructure availability.
	Al-Ashban and Burney (2001)	Income levels, education, age and occupation.
	Al-Gahtani et al. (2007)	Gender, age, experience and voluntariness of use.
	Al-Somali et al. (2008)	Quality of the internet connection, the awareness of OB and its benefits, the social influence, computer self-efficacy, Education, trust and resistance to change.
	Alsajjan and Dennis (2010)	Perceived usefulness and trust fully mediated the impact of SNs and perceived manageability on attitudinal intentions.
	Mahdi (2011)	Security and Trust.
In developing countries	In Kuwait, Aladwani (2001)	Security, regulations, consumer privacy and the bank's reputation.
	In Turkey, Polatoglu and Ekin (2001)	"relative advantage", "observability", "trialability", "complexity", "perceived risk", "type of group", "type of decision" and "marketing effort".
	In South Korea, Suh and Han (2002)	Trust, customer perception of the usefulness and ease of use of IB.
	In Taiwan, Wang et al. (2003)	Perceived ease of use and perceived usefulness.
	In Malaysia, Poon (2008)	Convenience of usage, accessibility, features availability, bank management and image, security, privacy, design, content, speed and fees and charges.
	In Turkey, Akinci et al. (2004)	Gender and age.
	In Qatar, Kassim and Ahmed (2006)	Attraction to use IB services.
	In Algeria, Belkhamza and Wafa (2009)	Security issues and system risks of e-commerce.
	In India, Safeena et al. (2011)	Perceived: usefulness, ease of use and risk.
	In South Africa, Masocha et al. (2011)	Vitality of technology utilisation by banks.
	In Tunisia, Nasri (2011)	Convenience, risk, security, prior internet knowledge, occupation and education level.
	In UAE, Mansumitrchai and chiu (2012)	Compatibility, difficulty, security, trust, third party concern, status, and human contact.
	In Romania, Moga et al. (2012)	Trust and security.
In developed countries	In the USA, Fram and Grady (1995)	Lack of credit card security, vendors not being fully identified, and a lack of payment alternatives.
	In Australia, Sathye (1999)	Security concerns, resistance to change and a lack of awareness about IB and its benefits.

	In Finland, Karjaluoto et al. (2002)	Prior experience with computers and technology and attitudes towards computers.
	In the UK, Howcroft et al. (2002)	Gender, age and security.
	In Finland, Mattila et al. (2003)	Income, education, perceived difficulty in using computers and a lack of personal experience in e-banking.
	In UK, Yousafzai et al. (2003)	Perceived security, privacy and trustworthiness.
	In the US, Khan (2004)	Rapid diffusion of the internet in the late 1990s and the corresponding.
	In Italy, Corrocher (2006)	Characteristics of traditional banking activities, particularly in terms of existing networks of distribution and existing customers.
	In Finland, Maenpaa et al. (2007)	Previous knowledge and prior experience of IB services.
	In China, Lee (2009)	Security/privacy risk and financial risk.
	In China, Hua (2009)	Security, privacy and perceived ease of use.
	In US, Hosein (2009)	Perceived usefulness, perceived ease of use.
	In Canada, Mangin et al. (2011)	Price, convenience and perceived usefulness.
	In UK, Yousafzai et al. (2012)	Technology readiness, age and gender.

Table 2.1: Factors impacting the customer attitudes towards IT and IB in the developing & developed countries and SA.

2.4 The Research's Conceptual Model and Hypotheses Development

IB is a new distribution channel for the delivery of banking services. From both academic and practical perspectives, it is interesting to understand and assess customer attitudes toward the adoption, use, and success of IB services. Previous research by Al-Qahtani (2007a) investigated the banks' perspective of IB in SA, whereas Al-Qahtani (2007b, 2008) reviewed the literature and developed a preliminary conceptual framework and model of the factors influencing customer perception of IB; a series of relevant hypotheses for testing along with a survey-questionnaire was used in the primary data collection.

2.4.1 Research Conceptual Model Development

This research's conceptual model has extended TAM model by adding new constructs; in addition, the research model was modified utilizing other well-tested

models such as but not limited to (Sathye, 1999; Wungwanitchakornm, 2002; Pikkarainen et al., 2004; Lichtenstein and Williamson, 2006), which is concerning technology usage, adoption. Several researchers have studied the causal models and theories from the adoption and diffusion literature that clarify key dependent variables of interest, that is, behavioural intention to use (adoption), and use. Fishbein and Azjen (1975, p. 288) defined behavioural intention as "a person's subjective probability that he will perform some behaviour". The role of intention as a predictor of adoption behaviour has been recognized in IB and IS research (Taylor and Todd, 1995). However, use is measured by the frequency, and intensity of IB usage.

For the successful implementation of new systems, for every change in the service distribution system, customers should change their behaviour and banks should rely upon customers' willingness and ability to change (Bateson and Hoffman, 1999). Consequently, despite there being a good understanding of the banking customer's acceptance behaviour towards current technology, additional research is required to recognize how this constant adoption and continuance use will influence successfully the new wave of technology introduction, such as IB. Accordinglly, the research's consptual model responded to the previouse researchers calls and has also been extended by adding a new facet which is success, following DeLone and McLean (2003) IS success model, see Figure (2.14).

The research's consptual's model has also utilized the DeLone and McLean IS Success Model by using the "Net benefits" as a success measures, but they cannot be analyzed and understood without "system quality" and "information quality" measurements, see Figure (2.14). For example, within the e-commerce environment, the impact of a website design on customer purchases cannot be fully understood

without an evaluation of the usability of the website and the relevance regarding the purchasing decisions of the information that is provided to the prospective purchaser. As per their original formulation of the D&M Model, "use" and "user satisfaction" are closely interrelated. "Use" must precede "user satisfaction" in a process sense, but a positive experience with "use" will lead to greater "user satisfaction" in a causal sense. Similarly, increased "user satisfaction" will lead to increased "intention to use" and thus to "use", see Figure (2.14). As a result of this "use" and "user satisfaction," certain "net benefits" will occur. If the IS or service is to be continued, it is assumed that the "net benefits" of the system are positive. The lack of positive benefits is likely to lead to decreased use and the possible discontinuance of the IS system.
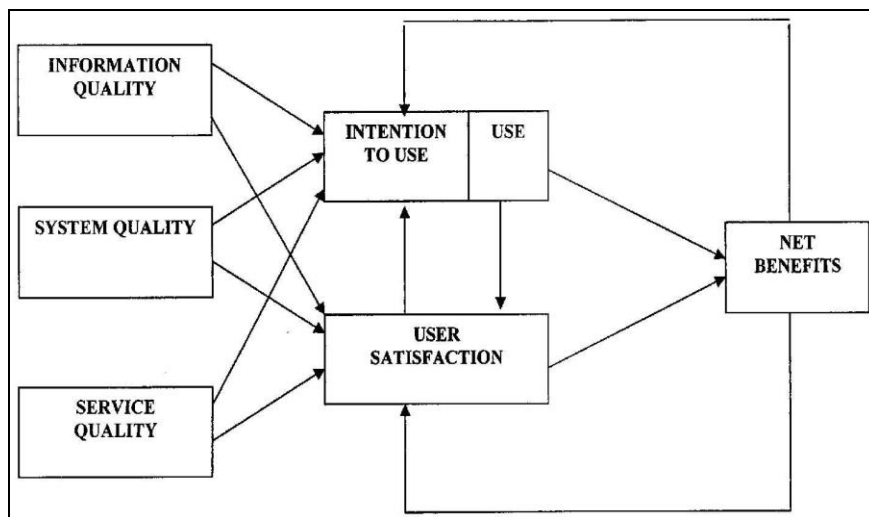
Figure 2.14: Updated D & M IS Success Model.
Source: (DeLone & McLean, 2003).

Based on the previous models and the literature review, ten factors were identified as having a relation with customer attitudes towards the adoption, use and success of IB services. These factors are satisfaction, perceived usefulness, perceived ease of use, availability of IsB, high security, high cost, self-efficiency, awareness of IB services, resistance to change, demographic factors and the availability of the infrastructure. The conceptual model has been divided into three main facets (dependent variables), that is, adoption "initial use", use "frequent usage" and success "satisfaction"; as the

aforementioned factors, "independent variables" are expected to have different relationships with those three facets.

Gatignon and Robertson (1985) recognized that the diffusion of technology, especially Internet use, can be affected by technological and social accesses. The technological access refers to infrastructure and person's capability in field of computer software and hardware, while the social access refers to the mix of education, knowledge, gender, religion and economic resources required for the use of the internet. With regards to that, a new factor has been introduced in this model; this is "availability of IsB" as a social values factor which has been introduced in Wungwanitchakornm's (2002) model and suggested by Al-Khaldi and Wallace (1999), is expected to have a relation with IB adoption, use, and success. As Saudi Arabian IB customers live in a Muslim country, they are also expected to be affected by the availability of IsB services in their IB transactions. As a result, the previous studies are also being extended by investigating a new set of independent variables and adding a new dependent variable "IB success" as a third variable in addition to IB adoption and use. Therefore, the theoretical model of this research is graphically presented in Figure 2.15.

Figure 2.15 depicts an extended model for IB adoption and usage models. It has been extended to include success and to include adoption, use and success facets in one model. The previous IB studies have focused mainly on IB adoption or use, and in some other few studies they do combine them in one study. This research thus goes further in explicitly disaggregating and extending the factors that affect IB adoption, use and have added a new facet (success) to the model.
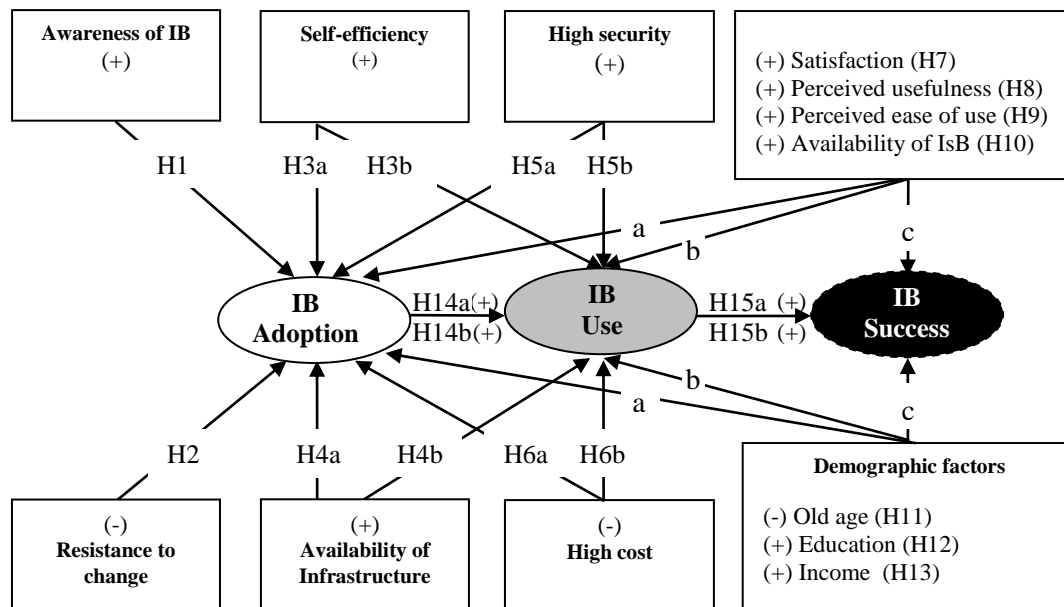
Figure 2.15: Conceptual Model of the factors influencing IB adoption, use, and success.

In particular, the model depicted in Figure 2.15 suggests that satisfaction, perceived usefulness, perceived ease of use, the availability of IsB, demographic factors and the usage of IB will have a direct effect on the success of IB, whereas IB adoption will affect success only indirectly via continued use. Conversely, although the availability of IsB services on via IB services is expected to have a positive and direct affect on all three IB facets, it is hypothesised that its effects will be stronger on IB success. That is, individuals may adopt non-Islamic IB services, but those services with the longer adoption and more frequent use (i.e. successful) will be of the Islamic variety.

In a comparison of the TAM with this research's model, the key advantage of the TAM is that it has a technological focus, which can lead to neglect of the influence of a customer's social and psychological perceptions regarding the adoption of a technology. In addition, the TAM has also been criticized for the lack of acknowledgement of individual differences (Agarwal and Prasad, 1997). Moreover, the TAM does not consider previous experience, age, gender, and many other personal traits that may affect customer attitudes towards technology, which in turn

influence customers' intention to use. Therefore, the model of this research proposed to investigate IB system adoption, usage and success; it also investigated the different factors which affect each facet separately and found that different factors affect initial adoption, use and success of IB differently. In particular, on the basis of the above conceptual framework and model, a list of hypotheses was devised. These are discussed under the following respective subsections.

2.4.2 Research Hypotheses

2.4.2.1 Awareness

The adoption or rejection of an innovation begins when "the consumer becomes aware of the product" (Rogers and Shoemaker, 1971). Howard and Moore (1982) emphasised that for adoption, "consumers must become aware of the new brand". The Wallis Report (1997) stated that "consumers will seek out those financial products and suppliers which offer the best value for money and they are educated about it". Hence, for IB adoption, it is necessary that the banks offering this service make the consumers aware of the availability of such a product and explain how it adds value relative to other products of theirs or of their competitors.

Awareness has been defined by Guiltinan and Donnelly (1983) as "information about the benefits of using a product/service". An important characteristic for the adoption of any innovative service or product is creating awareness among consumers about the service/product: "Don't assume good products sell themselves" (Cooper, 1997). According to Sathye (1999), because using IB services is a new experience for many customers, therefore, a low awareness of IB is a major obstacle (factor) which may lead the customers to not adopt and thus not use IB (Al-Somali et al., 2008; Hosein, 2010). This research adopted Pikkarainen et al. (2004) definition of

awareness which has been defined as "the amount of information consumers have about OB". Awareness of the IB services constructs operationalisations have been adopted from Pikkarainen et al. (2004), as they used a five point Likert scale and measured, in this research, by a similar scale. Questions from A27 to A28 in the questionnaire (see Appendix B). In short, awareness is expected to have positive relationship with IB adoption. Hence:

H1: Awareness has a positive relationship with the adoption of IB services.

2.4.2.2 Resistance to change

Resistance to change is one of the factors that potentially affect the adoption of the existing mode of service or product delivery to fulfil the customers' needs adequately. In the context of IB, telephone banking, ATMs, and brick-and-mortar branches are the existing modes of making banking transactions. Adoption of new technologies often encounters a certain amount of resistance to change from the current ways of operating. Commenting about technology adoption, Quinn and Mueller (1982) stated that "humans being what they are, there tends to be resistance to change", as customers do not change their normal behaviour towards technology adoption easily and quickly. For customers to change their present ways of operating and take up a new technology, it must "fulfil a specific need" (Wallis Report, 1997). Daniel (1999) found "a high level of customer inertia in changing their established banking arrangements". Unless such a need is fulfilled, consumers may not be prepared to change from their current ways of operating.

Akamavi (2005) concluded in his study that the move towards a more innovative firm is not simple, as employees and customers will find it hard to change. Al-Somali et al. (2008) found that resistance to change also has significant effects on the attitude towards the likelihood of adopting OB. Nonusers often complain that OB has no

social dimension, i.e. they are not served in the same way as in a face-to-face situation at a branch (Hosein, 2010). This research defined resistance to change as defined by Daniel (1999) as "a high level of customer inertia in changing their established banking arrangements". Resistance to change construct operationalisations has been adopted from Sathye (1999), which utilizes 5 Likert scale rating 5 items from "major obstacle" to "No obstacle". In short, resistance to change is expected to have relationship with IB adoption. Hence:

H2:   Resistance to change has negative relationship with the adoption of IB services.

2.4.2.3 Self-efficiency

Bandura (1977) defined self-efficiency as one's belief in or judgement on what one can do with the skill one possesses within a particular domain. Self-efficiency beliefs or judgements differ in three interrelated dimensions: "generalisability", "magnitude", and "strength". Within a computing context, these skills might be what users can do with such skills, such as using software to analyse data (Compeau and Higgins, 1995). "Generalisability" shows the degree to which one's belief is limited to a specific domain of the activity or not (Chan and Lu, 2004).

Thus, individuals with high "generalisability" are expected to be able to use different computer systems and software packages confidently. The "magnitude" refers to the level of capability expected. Thus, individuals with high "magnitude" (i.e. self-efficiency) perceive themselves as more competent to accomplish more difficult tasks with minimum support and assistance than are those with a lower "magnitude" of self-efficiency.

The "strength" of self-efficiency refers to the confidence an individual has in his/her ability to perform tasks, as mentioned earlier. Researchers (Venkatesh and Davis,

1996; Wang et al., 2003) suggested that individuals with high computer self-efficiency are expected to be able to use computer systems more regularly because they feel "comfortable" about computers, in contrast with those with a low "strength" of self-efficiency. Lassar et al. (2005) studied the relationship between consumer innovativeness and personal characteristics in the USA, and found that domain-specific consumer innovation, self efficacy, and utilitarian-based web use affect the adoption of OB positively. This research utilized Bandura (1977) defention of self-efficiency as "one's belief or judgement on what he or she can do with the skill he or she possess within a particular domain". Self-efficiency construct operationalisation has been adopted from Wang et al. (2003), as they used 7 Likert scale. In this study, a 5 Likert scale has been utilized from "strongly disagree" to "strongly agree". The adapted scale was modified to suite the IB context. Questions from A29 to A31 in the questionnaire (see Appendix B) represent the variable. In short, self-efficiency is expected to have positive relationship with IB adoption and use. Hence:

H3: *Self-efficiency has a positive relationship with IB services a) adoption and b) use.*

2.4.2.4 The availability of infrastructure

Access to computers/ the internet is required before the adoption of the IB is possible. O'Connell (1996) identified the lack of access to computers and the internet as possibly being one of the main reasons for slow adoption of IB. Al-Khaldi and Wallace (1999), and Daniel (1999), identified customer access to PCs as one of the main reasons for the low usage of e-banking in the UK and Ireland. The Wallis Report (1997) stated that "as the Internet becomes more widely accessible … households will conduct their financial transactions over the Internet". Sathye (1999) defined the availability of infrastructure as the accessibility to computers and internet services.

Hence, if IB is not being adopted in SA, it may be because of a lack of access to computers and/or the internet. OB offers many benefits to banks as well as to customers. However, when compared globally, the percentage of online users is not as high in the USA as in other regions of the world. There can be several reasons for this, the most obvious being that customers need to have access to the internet in order to utilize the service (Hosein, 2010). This research defined the availability of infrastructure as defined by Sathye (1999) "the accessibility to computers and internet services". Availability of infrastructure construct operationalisations has been adopted from Sathye (1999). A 5 Likert scale rating 5 items from "major obstacle" to "No obstacle" has been adopted in this study. Questions A2B1 and A2B2 in the questionnaire (see Appendix B) represent the variable. In short, the availability of infrastructure is expected to have positive relationship with IB adoption. Hence:

H4: *Availability of IB infrastructure has a positive relationship with the a) adoption and b) use of IB services.*

2.4.2.5 Security

Banks need to search for a way to reassure customers about the security and confidentiality of their transactions online. Security concepts, in general, refer to the ability to offer protection against potential threats. Several studies revealed that security, privacy, trust, and risk-related concerns may affect consumer IB choices. In the first quarter of 2005, it was reported that 80% of global phishing attacks targeted the financial services sector (IDC, 2005). O'Connell (1996) concluded that "security concerns" were one of the main reasons for the slow development of IB in Australia. Moreover, a study on IB in Australia concluded that "security concerns among banks and customers" were keeping both away from IB (ABF, 1997). In Australia, Sathye's

(1999) study highlighted consumer security fears while Ramsay and Smith (1999) found privacy to be a key consumer concern.

Salisbury et al. (2001) found that perceived security is a much stronger determinant of intention to purchase online than the perceived ease of use and usefulness of the website. Likewise, Miyazaki and Fernandez (2001) showed that the rate of online product purchase is closely related to the perceived security control possessed by a website. According to Polatoglu and Ekin (2001), security comprises three dimensions: reliability, safety, and privacy. If an individual believes that the bank guarantees privacy, keeps their data securely, has a good public reputation, and provides reliable services, then they are more likely to consider IB adoption and be strongly motivated to use it to conduct a significant number of their transactions.

Chung and Paynter (2002) reported that consumer fears regarding transaction security were an inhibitor to the adoption of IB. Perceived security controls describe the degree to which an e-commerce website is perceived to be secure and able protect other information from potential threats (Hua, 2009). Therefore, heightened security concerns could stop potential damage ensuing from insecure transactions, hacking, or poor access control to important data (Hesson and Alameed, 2007). Security has also been identified as a key consumer concern in other IB adoption studies (e.g. Black et al., 2002; Siu and Mou, 2005; Poon, 2008; Adesina and Ayo, 2010). As defined by Salisbury et al. (2001), this research defiened Security as "the extent to which one believes that the World Wide Web (WWW) is secure for transmitting sensitive information". As the adoption of purchasing products, on the WWW may involve a greater degree of risk than the adoption of other IT innovations. When one purchases products online, there may be a perception of risk involved in transmitting

sensitive information such as credit card numbers across the WWW. Security construct operationalisations have been adopted from Pikkarainen et al. (2004), utilizing a five point Likert scale from "strongly disagree" to "strongly agree". Questions from A22 to A26 in the questionnaire (see Appendix B) represent the variable. In short, security factors are expected to have positive relationship with IB adoption. Hence:

H5:   *High security has a positive relationship with the a) adoption and b) use of IB services.*

2.4.2.6 High Cost

High cost is another factor that affects customer adoption of innovation. In the context of IB, there are two types of costs. The first is associated with internet activities and the second with bank costs and charges. Howard (1977) highlighted the importance of "price factors" in the adoption and diffusion of innovation. Rothwell and Gardiner (1984) reported that "there are two fundamental sets of factors defining user needs, namely price factors and non-price factors". Guadagni and Little (1983), Mazursky et al. (1987) and Gupta (1988) identified "price" as a major factor in brand switching. Moreover, Cooper (1997) concluded that innovative products often have superior "price/performance" characteristics. The Wallis Report (1997) mentioned that for "consumers to use new technologies, the technologies should be a reasonable priced relative to alternatives". Customers seem to consider that they could obtain lower cost services by using the internet than by going to the bank (Sathye, 1999; Karjaluoto et al., 2002; Gonzalez et al., 2004). This research utilized Sathye (1999) IB services Cost defention as the normal costs associated with internet activities or charges when placing a financial transaction via the internet. Cost is measured utilizing 5 Likert scale rating 5 items from "major obstacle" to "No obstacle". Question A2B4

in the questionnaire (see Appendix B) represents the variable. In short, high cost factor is expected to have negative relationship with IB adoption and use. Hence:

H6:   *High cost has a negative relationship with IB services a) adoption and b) use.*

2.4.2.7 Satisfaction

Customer's satisfactions is defined by Solomon (2010), as the overall customer's feelings about a product/ service after they bout it. Inline with this diffention; Kotler and Keller (2009) have also defined customer's satisfaction as a person's feelings of a pleasure or disappointment that result from comparing a product's perceived performance to their expectations. Customer satisfaction is a key to success in IB and banks will use different media to customize products and services to fit customers' specific needs in the future Mattila (2001). It has been reported that IB saves time and money and has a positive relation with customer satisfaction towards the usage and success of IB (Mattila, 2001; Polatoglu and Ekin, 2001; Karjaluoto et al., 2002).

IB offers new value to customer because it makes available a full range of services that are not offered in branch offices (Karjaluoto et al., 2002). Modern Internet technology makes it possible to create customized banking services for every individual customer (Mattila, 2001). According to Daniel (1999), customers' value features in IB such as convenience, increased choice of access to the bank, improved control over their banking activities and finances, ease of use, speed, secure, saves customer's time and money. Hiltunen et al. (2002) argued that a key factor in this competition for online customers is the quality of customer service, which includes the usage of IB services.

Several researchers have identified convenience as an important factor that influences IB adoption (Ramsay and Smith, 1999; Thornton and White, 2001; Pew, 2003;

ACNielsen, 2005). Accessibility, which is related to convenience, has also been reported as an important factor for adoption (Ramsay and Smith, 1999). Interestingly, Chung and Paynter (2002) found that many people who did not use IB believed they were not in need of high levels of convenience. In the US, a survey found the main motivation for using IB to be convenience in terms of 24/7 access and time savings (Karjaluoto et al., 2002; Pew, 2003; Sarel et al., 2003; Lee et al., 2005; Adesina and Ayo, 2010; Mangin et al., 2011). Gonzalez et al. (2004) also identified that speed of access is an important factor, which relates to the customer satisfaction. Hence, banks shall ensure that their IB offerings were efficiently handled and their online service brought the benefits to satisfy customers (Pikkarainen et al., 2004).

This research adopted Solomon (2010) Customer's satisfactions defention as the overall customer's feelings about a product/ service after they bought it. Generaly speaking if IB customers have benefits out of the used service this will be reflected positively on their attitiudes and behaviours towards their IB services utilization. In this research, factor analysis was performed on the IB satisfaction variable and was divided into three dimensions (see Table 6.1). Therefore, items A7, A5, and A4 are grouped under one dimesion, which measures the convenience of using the IB services, which is described in terms of lifestyle, workplace use, household use (Polatoglu and Ekin, 2001; Pew, 2003). The second dimension, which included three items (A6, A3, A1), measures the time-saving dimension of IB services, which is described in term of "not having to travel, and not having to wait" (Polatoglu and Ekin, 2001; Pew, 2003). The third dimension, which includes three items (A9, A2, A8), measures the fulfilment dimension of IB services, which is described in terms of the extent to which the customers' needs are fulfilled (Polatoglu and Ekin, 2001). Satisfaction construct operationalisation has been adopted from Polatoglu and Ekin

(2001), as they used a five point Likert scale rating 5 items from "strongly disagree" to "strongly agree". In this study, respondents were asked to rate their satisfaction on nine items (A1-A9) (see Appendix B). In short, satisfaction is expected to have positive relationship with IB adoption, use, and success. Hence:

H7: *Satisfaction has a positive relationship with the a) adoption, b) use, and c) success of IB services.*

2.4.2.8 Perceived ease of use

Davis (1989) defined perceived ease of use as the degree to which a person believes that using a particular system would be free of effort. A significant number of studies have suggested that perceived ease of use influences customer attitudes towards the adoption of new technologies (Davis et al., 1989; Agarwal and Prasad, 1997; Venkatesh, 1999; Venkatesh and Davis, 2000). For example, Cooper (1997) identified that "ease of adoption" was one of the three most important characteristics from the customer's perspective for the adoption of innovative services. "The degree to which an innovation is difficult to understand or use" was one of the reasons for failure of home banking in the USA (Dover, 1988). Scarbrough and Corbett (1992) reported "understandings of consumers" to be an important element in the diffusion of innovative technology. The Wallis Report (1997) identified that technological innovation "must be easy to use" to ensure customer take-up or acceptance. Customer skill is related to customer selection, and to the flexibility of the service offered. Akamavi (2005) highlighted that it is important for the service designer to understand customers' needs, in order to design a website that the customer will find easy to use.

Daniel (1999) identified ease of use as one of the factors for customer acceptance in her study of e-banking in the UK and Ireland. It is a critical factor in the development and delivery of IB services (Taylor & Todd, 1995; Sathye, 1999; Yiu et al., 2007; Al-

Hajri & Tatnall, 2008). Perceived ease of use is a person's subjective perception of the effortlessness of a computer system, which affects the perceived usefulness, and thus has an indirect effect on a user's technology acceptance (Rigopoulos & Askounis, 2007). Also, the longer an individual has been using IB, the more likely they are to find it easy to use (Prompattanapakdee, 2009). Similarly, the easier it is for a user to interact with a system, the more likely it is that he or she will find it useful. There is substantial empirical support for this view (Chau, 2001; Amin, 2007; Rigopoulos & Askounis, 2007; Lee, 2009). It affects the consumers' intentions to use IB (Eriksson et al., 2005; Alsajjan and Dennis, 2010; Al-maghrabi and Dennis, 2010; Al-Majali & Nik Mat, 2011). This research adopted Davis (1989) pareceived ease of use defenetion as "the degree to which a person believes that using a particular system would be free of effort". Perceived ease of use of the IB services constructs operationalisations have been adopted from Pikkarainen et al. (2004) and was measured by five-point scale rating 5 items from "strongly disagree" to "strongly agree". In this study, respondents were asked to rate their IB perceived ease of use in six items (A16 to A21) (see Appendix B). In short, perceived ease of use is expected to have positive relationship with IB adoption, use, and success. Hence:

H8: *Perceived ease of use has a positive relationship with the a) adoption, b) use, and c) success of IB services*.

2.4.2.9 Perceived usefulness

Perceived usefulness was defined by Davis et al. (1989) as "the degree to which a person believes that using a particular system would enhance [his/her…] performance". Several studies have reported that perceived usefulness is an important factor for adopting and using technology (Davis et al., 1989; Venkatesh, 1999, 2000; Venkatesh and Davis, 2000). In the context of IB, it is presumed that the level of

usefulness that IB offers over and above traditional banking methods could affect customer attitudes towards adoption and use. For example, IB could be perceived as useful by customers that find it difficult to visit the bank's branches.

The users' performance is expected to be when he or she realise the usefulness of a technology. According to Amin (2009), Perceived Usefulness is the extent to which a person believes that using a particular system will enhance his or her performance. Mathwick et al. (2001) defined perceived usefulness as the extent to which a person deems a particular system will boost his or her job performance. The importance of perceived usefulness has been widely recognized in the field of e-banking (Liao & Cheung, 2002; Jaruwachirathanakul & Fink, 2005; Guriting & Ndubisi, 2006; Agarwal et al., 2009; Al-Majali & Nik Mat, 2011). It is the primary prerequisite for mass market technology acceptance, which depends on consumers' expectations about how technology can improve and simplify their lives (Al-maghrabi & Dennis, 2010). This research adopted Davis (1989) parecived usefulness defenetion as "the degree to which a person believes that using a particular system would enhance his job performance". Perceived usefulness of the IB services constructs operationalisations have been adopted from Pikkarainen et al. (2004) and was measured by five-point scale rating 5 items from "strongly disagree" to "strongly agree". In this study, respondents were asked to rate their IB perceived usefulness in six items (A10 to A15) (see Appendix B). In short, perceived usefulness is expected to have positive relationship with IB adoption, use, and success. Hence:

H9:   *Perceived usefulness has a positive relationship with the a) adoption, b) use, and c) success of IB services.*

2.4.2.10 Availability of online IsB

In Kuwait, Al-Sultan (1999) studied the attitudes of several hundred customers towards the products and services offered by Islamic channels, and like Metwally (1996), he confirmed that adherence to Islam was the main motivating factor for Kuwaitis dealing with Islamic banks and channels. Moreover, when Bley and Kuehn (2004) surveyed business students' knowledge of the financial aspects of Islamic and conventional banks in the UAE, the sample of the research included a relatively high proportion of students who were knowledgeable about general financial practice, and comprised students with both an Arabic and non-Arabic Muslim background. The major finding was that Muslim students preferred Islamic bank services because of religious motivations. The majority of Islamic bank customers responded that religion was the main motivation in the use of Islamic products and services.

Omer (1992) concluded that religion was the primary factor in the choice of an IsB institution. In Bahrain, Metawa and Almossawi (1998) concluded that the most important factor in determining the attitudes of Islamic bank customers was religion. As mentioned earlier, the tenet of Islam, in SA, was probably responsible for the delay (until January 1999) in allowing public access of the internet through the PC (Al-Khaldi and Wallace, 1999). This research adopted Gait and Worthington (2007) defention of IsB as financial products and services designed to comply with the central tenets of *Shari'ah* (Islamic law). Availability of IsB is measured by a Likert scale rating 5 items from "major obstacle" to "No obstacle". Q. A2B5 in the questionnaire (see Appendix B) represents the variable. In short, the availability of IsB is expected to have positive relationship with IB adoption, use, and success.

H10: *The availability of IsB has a positive relationship with the IB services a) adoption, b) use, and c) success.*

2.4.2.11 Demographic factors (Age, Education and Income)

Different demographic factors affect the adoption of IB to different degrees. Those factors have been found to be associated with the adoption of different banking channels, especially IB (e.g. Sathye, 1999; Al-Ashban and Burney, 2001; Karjaluoto et al., 2002).

Akinci et al.'s (2004) findings in Turkey showed that middle-aged consumers are more likely than younger or older consumers to use IB whereas in Italy, younger consumers are more likely than older consumers to use ATMs (Filotto et al., 1997). In SA, the adoption of tele-banking is negatively associated with age (Al-Ashban and Burney, 2001). In addition to that several studies found that customers who are younger more likely to use IB (e.g. Sathye, 1999; Karjaluoto et al., 2002; Mattila et al., 2003). Similarly, those who belong to the upper middle class and have high-level occupations and income are more likely to use IB (Jayawardhena and Foley, 2000; Karjaluoto et al., 2002).

According to Polatoglu and Ekin (2001) and Howcroft et al. (2002) one of the demographic factors that describe typical e-banking customers is high education. Moreover, different authors found that customers who are educated more likely to use IB (e.g. Sathye, 1999; Karjaluoto et al., 2002; Mattila et al., 2003). Additionally, Akinci et al. (2004) found that the IB users in Turkey were well educated, more technology-oriented and convenience-minded costumers.

Income is another major demographic factor which relates to the usage of IB. In SA, the adoption of IB has been found positively associated with income level (Al-Ashban and Burney, 2001). Similarly, different authors found that wealthier customers are expected to use IB (e.g. Sathye, 1999; Mattila et al., 2003). In addition to that,

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Karjaluoto et al. (2002) found that and have high-level occupations and income are more likely to use IB. In UK, IB users are typically being in the upper income bracket of an already affluent and/or educated group (Howcroft et al., 2002). Demographic constructs operationalisations have been adopted from Almogbil (2005). Therefore, the following hypotheses are proposed:

H11: *Old age has a negative relationship with the a) adoption, b) use and c) success of IB.*

H12: *High education level of the IB users has a positive relationship with the a) adoption, b) use and c) success of IB.*

H13: *High income level of the users has a positive relationship with the a) adoption, b) use and c) success of IB.*

2.4.2.12 Adoption, Use and Success facets

IB Adoption

Adoption, as defined by Kotler and Keller (2009), refers to "an individual's decision to become a regular user of a product/service". Adoption of IB services is measured by the intention to use IB services or even usage for short period of time so as to undergo the experience, which is considered as a predictor for adoption (Al-Ashban and Burney, 2001; Al-Gahtani et al., 2007).

Adoption (intention to use) only has an effect on actual use. This suggests that an individual who is motivated to continue to use IB will conduct a significant number of their transactions using these services. To increase an individual's intention to use IB, the services must be made easy to use and trustworthy. As the individual begins to use the services, they will be motivated to continue their use, but if the individual continues to place a high value on personal relationships, then this will have a negative effect on their intention to use the services (Prompattanapakdee, 2009). Thus, the duration of experience with the technology has been found to capture the

customer's intention to use the technology (Al-Gahtani et al., 2007; Safeena et al., 2011).

The new adopters of the IB service are expected light users and very critical users where they will stay and become the medium and heavy user or they might leave adopting IB due to negative reasons. As a result, this research proposes the implementation of IB quality as integral constituents to maintain and increase the IB users' retention to become regular users (Raman et al., 2008). The adoption of IB can be increased by the attractive incentives and encouragement. Human beings are likely to be motivated and influenced by incentives. Based on the survey, adoption of IB is showing a great deal in the bank's development with 72% of the respondents having adopted IB (Raman et al., 2008).

As defined by Kotler and Keller (2009), in this research adoption refers to "an individual's decision to become a regular user of a product/service". Adoption of IB services is measured by the period of using IB services (Al-Ashban and Burney, 2001). Thus, adoption of IB services is measured in this research by the duration (one year or less) of usage of IB services, as captured in (Q: B13): "How long have you been using IB?".

IB Use

Use refers to the user acceptance of an IS often operationalised as frequency of use (Davis et al., 1989; Davis, 1993). In the technology context of use, the frequency of use has been found to capture the customer's use of technology (Safeena et al., 2011). Therefore, the greater usage of IB (frequency of using the IB) (e.g. Sathye, 1999; Al-Ashban and Burney, 2001; Al-Gahtani et al., 2007) is considered as a proxy for IB usage. Frequency of system usage is one of the most frequently proposed methods for

measuring the usage in IS studies (Zmud, 1979; DeLone and McLean, 1992). On the other hand, if the objective is to increase the proportion of an individual's banking transactions that are conducted via IB, then the most important action is to get them started in using IB, since the longer an individual uses the services, the larger will be the proportion of their transactions that they conduct using IB (Prompattanapakdee, 2009).

Both subjective (self-reported) and objective (actual usage or frequency recorded by the computerized system) measures are common forms of system usage measures found in the literature (Straub et al., 1995; Chin, 1996; Szajna, 1996; Yousafzai et al., 2007a). Moreover, to be an effective surrogate, self-reported usage must be a valid measure of use and must correlate strongly with other methods of measuring usage, that is, it must exhibit convergent validity (Nunnally, 1978). Davis (1989) and Al-Gahtani et al. (2007) considered that the behavioural intention (Adoption) leads to the actual use of IS. As a result, longer adoption will lead to increase the usage of IB.

Agarwal and Prasad (1997) studied both initial system usage and the intentions of future use and found that different factors affected initial use versus future use of the WWW. Similarly, Karahanna et al. (1999) found that factors associated with "intention to use" windows differed between potential adopters and continuing users. These two empirical studies demonstrate that early use and continued use can differ. While, too frequent system usage is clearly a key variable in understanding IS success (DeLone & McLean, 2003). The IB users are expected to be medium users and earlier adopters of IB services than the light users who already rely and realize the importance of IB. They are different with light users where incentive should be given

appropriately to them. The only difference is in the "incentive" variable preference. The medium and heavy users might not need as much incentive as the light user.

This research adopted Davis (1993) definetion of use which refers to the user acceptance of an IS. Use often operationalised as frequency of use (Davis et al., 1989; Davis, 1993). The greater usage of IB (frequency of using the IB) (e.g. Sathye, 1999; Al-Ashban and Burney, 2001) is considered as a predictor for IB usage. Frequency of system usage is one of the most frequently proposed methods (DeLone and McLean, 1992). Thus use of IB is also measured in this study as frequency of using IB services (6-30 times), as captured by (Q: B14): "How frequently do you access IB information each month?"

IB Success

A number of factors have been suggested by different researchers as being necessary for the success of new products or services (Solomon, 1996; Lockett and Littler, 1997; Hawkins et al., 1998; DeLone & McLean, 2003). IB Success refers to the extent to which satisfactory results are obtained (Rockart, 1979). Success also refers to a number of factors which, if they are satisfactory, will ensure a successful competitive performance for the organisation (Rockart, 1979). The success of IB is initially determined by customers' acceptance of the service. If the IB service can clearly show the benefits and how it addresses customers' needs, then customers are more likely to use IB. Previous research into IB has focused mainly on innovation adoption in the context of North America and Europe (Pikkarainen et al., 2004) and to some degree, other areas, such as Turkey (Polatoglu and Ekin, 2001).

The "use" factor of IS is widely used as a measure of success in empirical MIS research (Zmud, 1979). The Wallis report (1997) stated that "as the internet becomes

more widely accessible … households will conduct the financial transactions over the Internet". There are a number of factors that, if results are satisfactory, will ensure a successful competitive performance for the organisation (Rockart, 1979). In addition, Beckett (2000) suggested that to succeed in creating and sustaining a competitive advantage, financial services firms have to understand how consumers vary their behaviour when interacting with them. In other words, customer satisfaction and customer retention are increasingly developing into key success factors in e-banking (Bauer et al., 2005). User satisfaction is one of the most widely used measures of IS success for three reasons. First, using satisfaction as a success measure makes common sense. Second, there are reliable tools for measuring satisfaction. Third, other IS success measures are either conceptually weak or hard to acquire (Delone and McLean, 1992).

DeLone and McLean (2003) introduced the "net benefits" construct as the most accurate descriptor of IS success. "Net benefits" are the most important success measures, as they capture the balance of positive and negative relationships of e-commerce with customers. For successfully implementation, IB must provide positive net-benefits for users (e.g. how easy or useful it is to use or how compatible it is with the customer's lifestyle and their previous experiences or does it safe their time and money). In addition, while net benefits are necessary, on their own they are not sufficient to provide a good understanding of IB behaviour (Lassar et al., 2005). Customers' individual differences (demographic characteristics) should also be taken into account along with different social and contextual influences in identifying final adoption and usage behaviours. In addition, DeLone and McLean (2003) stated that system use is clearly a key variable in understanding IS success, but, too frequently, simple usage variables are used to measure this complex construct. In recent empirical

studies, information quality has proven to be strongly associated with system use and net benefits (Weill et al., 1999; Wixom et al., 2001; Rai et al., 2002) and especially in the context of e-commerce systems (Liu et al., 2000; D'Ambra et al., 2001; Molla and Licker, 2001; Teo and Choo, 2001; Palmer, 2002). Successful IB users are enjoying the benefits of their usage and considered heavy users as they are using wide range of IB services. The performance of most marketing programmes is determined by its effectiveness and efficiency. Some studies found that heavy users are more deal prone; differently other studies found that they are innovators or very early adopters (Morgan 1979; Hackleman and Duker 1980).

Liao & Cheung (2002) stress that the success in IB will be achieved with customized financial products and services that satisfy customer' needs, preferences and quality expectations. Mattila (2001) conceded that customer satisfaction is a key to success in IB and banks will use different media to customize products and services to fit customers' specific needs in the future. Lindgaard & Dudek (2003) emphasize that now is an ideal time for human computer interaction researchers to analyse user satisfaction, because there is growing interest in how to attract and increase the number of online customers in e-business and e-commerce. Therefore, using wide range of IB services, in addition to the users satisfactions from the provided IB services can be considered as predictors for success. A system that satisfies user's needs reinforces satisfaction with the system and is a perceptual or subjective measure of system success. Using the system is connected with the effectiveness of the system – systems that users regard as useless cannot be effective.

Success is defined in this research as the extent to which satisfactory results are obtained (Rockart, 1979). Different researchers reported that IB saves time and

money and has a positive relation with customer satisfaction towards the usage and success of IB (Mattila, 2001; Karjaluoto et al., 2002; DeLone and McLean, 2003). User satisfaction is one of the most widely used measures of IS success (Delone and McLean, 1992). Molla and Licker (2001) suggested to extend Delone and McLean's (1992) model on web and e-commerce systems researches which have similarities to traditional IS systems, and therefore Delone and McLean's model can be applied to e-commerce systems. Therefore, the users' satisfactions of the provided IB services and the use of wide range of IB services have been used as predictors for success in this research. The success of IB is measured in this study by user satisfaction and number of used services. User satisfaction is measured by three items, as captured by Qs A2, A8, A9; time saving is also measured by other three items, as captured by Qs A1, A3, A6; inaddition to the number of used IB services which measured by 1 item, as captured by Q B16 (more than 5 services), as the users were also asked to indicate the type of activities that they undertake via IB services and they have been given the option to select more than one choice. Hence, the following hypotheses are proposed:

H14: *Adoption of IB services has a positive relationship with the use of IB services.*
H15: *Use of IB services has a positive relationship with IB success.*

2.5 Chapter summary

This chapter reviewed the main behaviour and technology models, such as TRA and TAM, and found that TRA has investigated the attitudes and social influences that impact the customers' adoption behaviour, while TAM investigated the different factors that might impact the customers' attitudes towards their intention to use the technology which will lead to actual use. With regards to that, no study from the reviewed literature has been found investigating the success of the IB; whearease few studies were found investigated the success of IS. As a result and responding to

several researchers calls (DeLone and McLean, 1992; Molla and Licker, 2001); this study has extended TAM model by introducing new additional facet (success), utilizing the IS success model, and investigating the different factors that might have a relationship with each facet (adoption and actual use, and success).

DeLone and McLean (1992) introduced the IS success model and mainly measure the success by customers' wide usage and satisfaction when they are enjoying the benefit of their usage of the IS. Molla and Licker (2001) proposed an extension to Delone and McLean's (1992) model by studying e-commerce system success by defining an independent variable labelled Customer E-commerce Satisfaction. They argue that web and e-commerce systems have similarities to traditional IS systems, and therefore Delone and McLean's model can be applied to e-commerce systems.

This chapter also reviewed the literature on IB utilization and found that three main facets (adoption, use and success) are linked positively, as longer adoption of IB relates to the usage of IB positively, while frequent usage of IB also relates with the success of IB positively. These three main facets are affected, in a different extent, by a set of independent variables: satisfaction, high security, self-efficiency, awareness, income, education the availability of IsB services and the availability of the infrastructure were identified as having a positive effect on the adoption, use and success of IB. However, other independent variables, such as high cost, resistance to change, and old age, were identified as negatively affecting the adoption, use and success of IB.

This chapter also presented a historical review of the IB studies which have been conducted in the developed countries such as Europe, USA, and Australia, in addition to those in developing countries, and the findings indicated that little IB empirical

research has been conducted in the Middle East and SA in particular. Thus, this chapter provided data for a comparison with the results reported in other countries, and revealed that security factors do not affect IB customers' attitudes in developing countries to the same degree as they do in developed countries; that is due to the period of IB adoption and awareness of the criticality of such a service. Therefore, after critical review of the international empirical literature relating the customer's attitudes towards the IB acceptance, it has been found that no significant diferencies on the type of factors which relates to one region diferent than the other. The differenceies mainly depends on how mature is the customers usage of the IB services in a specific region, forexample during the early usage of IB; specific factors, such as awareness and resistance to change, were found mainly linked to the adoption of the IB. Wherease other factors were found related to the adotion and use of the IB, such as satisfaction, high security, self-efficiency, income, education and the availability of the infrastructure, the availability of the IsB services and cost of the IB services. This chapter also reviewed and extended previous technology and marketing research by examining a wide range of variables which have not been found investigated in one study and especially in SA. Thus, awareness, resistance to change, self-efficiency, availability of infrastructure, security, cost, satisfaction, ease of use, usefulness, IsB, age, education and income were taken into account in this study as independent variables. Based on that, the research conceptual model was proposed and the research's' hypothesis were developed.

This chapter found that few studies have investigated the relationship of the availability of IsB products and services in the traditional banking services and no study was found in the reviewed literature had studied the relationship of such factor with the adoption, use and success of IB, especially in a Muslim country such as SA.

Therefore and in response to some researchers' calls (Khaldi and Wallace, 1999; Wungwanitchakornm's, 2002; Alsajjan and Dennis, 2010), this research has inestigated the relationship of the social and cultural values with the new technologies such as IB. This study is considered to be one of the first studies in the field of IB which investigates the relationship of the availability of IsB services and IB.

This study extends the previous IB research by examining the extent of several factors (independent variables) relations might have with customer adoption, use, and success (Dependent Variables) of IB services separately. Thus, the three dependent variables considered in the theoretical model of this study are 1) adoption, 2) use, and 3) success, as one of the first studies in the field of IB among the reviewed literature which investigate those dependent variables in theoretical models. This chapter concluds with the research theortical model, hypothesises with the operational definitions and the measurement of the research variables, which have been adopted from prior studies to ensure reliability and content validity. In the next chapter, the banking industry challenges and the IB services introduction issues are explained.

Chapter Three

Banking Industry and IB Issues

3.1 Introduction

This chapter delineates the context of this research and describes the banking sector challenges and the general IB factors that impact their utilization. An overview of the changing nature of the international banking industry is also introduced to enhance the reader's knowledge about the different issues that might affect the banking sector and the different banking channels, such as IB. As introduced in chapter one, this chapter also study the different the social values of SA residence people and evaluate the Information and Communication Technology (ICT) status of SA and capture the most relevant factors that have a relation with their IB utilization and compare them with the statistical result of this research.

Furthermore, a review of IB and how it is interpreted in SA, the different types of offerings, the status of current IB usage, and the various concerns and issues regarding IB are summarised to provide a solid background of the IB field in SA. This chapter concludes with an overall summary of the major key points of the background of the IB industry. In the following section, a description of the various environmental forces affecting the banking sector is presented, highlighting both the external and internal forces.

3.2 The Changing Nature of the Banking Sector

The traditional, rather rigid structure of the industry combined with the operation of a few large 'cartels'[1], meant that customers around the world had to accept both the form and price of financial instruments and delivery channels. However, today's banking sector is subject to both internal and external pressures (Rajan, 1998). The structure of the global banking sector has undergone considerable change over the past years; for example, in the 1990s, globalisation and its effects on the global banking sector meant that, like many other global industries, it entered a state of flux, with many of its participants. They are unsure as to how the global competitive environment would look in the future.

Within the traditional structure and operation of the banking industry, customers had little choice in terms of selecting financial instruments and delivery channels. Moreover, after SA's accession to the WTO in 2005, the Saudi banking sector faced challenges from some new international rivals to the Saudi market. Because of that, internal pressures to the industry include competition and changing consumer behaviours, become high and very dynamic. Due to that, the competition were expected to be high between foreign and domestic banks internally, which then forced the local banks in SA to refine and improve their services and products, in pricing, flexibility, delivery, and after-sales services, which in return will affect customer behaviour. With regards to that, Jayawardhena and Foley (2000) explained the banking services sector and its interactions with the market forces in Figure 3.1.

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[1] *Defined as an agreement among two or more firms in the same industry to co-operate in fixing prices and/or carving up the market and restricting the amount of output they produce. It is particularly common when there is an oligopoly. The aim of such collusion is to increase profit by reducing competition (The Economist, 2010).*
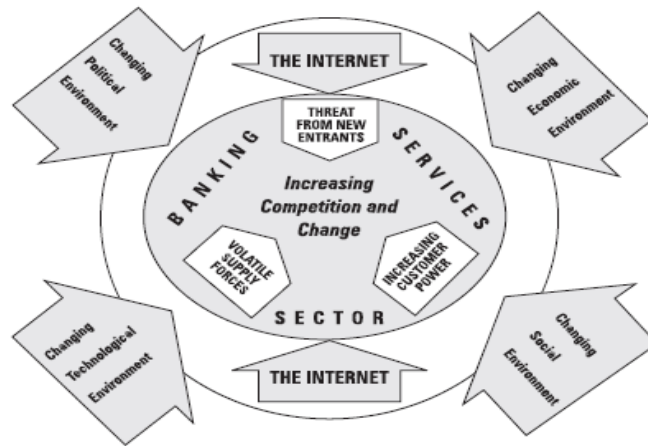
Figure 3.1: The banking services sector and interaction with forces.
Source: Jayawardhena and Foley (2000).

In the wider business environment, these changes are likely to have the greatest impact on the banking sector. Such developments are beyond the control of the businesses themselves. However, success or failure may depend on how well management is able to anticipate and react to these changes.

3.2.1 External Forces

There has been a marked trend towards deregulation in recent years in many Western countries, resulting from political and ideological change (Jayawardhena and Foley, 2000). Successive regimes have continued to deregulate industries as a response to past recessions and to support structural change by improving the efficiency and competitiveness of both public and private sectors. Developed economies, such as the United Kingdom (UK), have been at the forefront of such developments (Jayawardhena and Foley, 2000). Deregulation in the banking industry has created new competition between banks as well as allowing new entrants to the sector. In SA, managing the branches of the foreign banks operating in SA post WTO accession has added to the faced by the SA banks in the medium and long term. As a result, the relationship between regulators and foreign banks has come under more scrutiny because of the globalization of the banking services.

The 2008 financial crises, governments followed different methodologies. In UK, the government moved quickly to announce the first victim (Northern Rock) in February of 2008, and other smaller institutions, including Bradford & Bingley, and major recapitalizations through state ownership of the country's major banks, such as Lloyds and Royal Bank of Scotland. By contrast, U.S. policymakers involved in a haphazard series of actions, in part driven by the pressures from the banks themselves and by the difficulty of selling to the Congress and the public massive government intervention in the financial sector. In SA, the Saudi Arabian Monetary Agency (SAMA)[1] policy changed and the reserve ratio on current accounts was reduced to 10 and then to 7 percent in the face of the global financial crises in order to stimulate additional domestic liquidity. Unlike other central banks around the world who have been reducing or eliminating their reserve requirements (Freedman et al., 2009), SAMA set to continue using it as a powerful signaling tool and an effective monetary policy given that some Saudi Riyal (SR)[2] 328 billion were held in current accounts by the Saudi banks in February 2008 (SAMA, 2008), which has reflected positively on the market and public confidence, during the financial crises of 2008. SAMA did not take this route to support its banking system, feeling that their capitalization level was more than adequate to support Saudi banks compared with their western counterpart.

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[1] *Saudi Arabian Monetary Agency (SAMA), the central bank of the Kingdom of SA, was established in 1952. The functions of the SAMA include issuing the national currency, the Saudi Riyal; acting as a banker to the government; supervising commercial banks; managing foreign exchange reserves; promoting price and exchange rate stability and ensuring the growth and soundness of the financial system; and operating a number of cross-bank electronic financial systems such as (SPAN, Tadawul, SARIE, SADAD and MAQASA) (SAMA, 2008).*

[2] *The Saudi Riyal (SR) is fixed against the US Dollar; 1 US dollar = 3.75 Riyals, which translates to approximately 1 Saudi Riyal = 0.266667 US Dollar. This rate was made official on January 1, 2003 (X-rates.com, 2008).*

Jayawardhena and Foley (2000) further argued that, with the possible exception of regulatory reform, changes in the technological environment are likely to have the greatest impact on the banking sector over the next decade. Developments in technology have dominated the revolution in the banking sector during the past decade (Gandy, 1998a). The worldwide expansion in technologies for connection has supported the increasing globalisation of capital flows and financial organisations. Technology has also facilitated the proliferation of new products and services supporting new customer demand (Lichtenstein and Williamson, 2006). Lichtenstein and Williamson (2006) also claimed that banks are able to harness the new technologies to sustain profitability as well as to improve customer services. Moreover, they claimed that technology, in particular the internet, will be a key driver of such changes (Lichtenstein and Williamson, 2006). New technology will 'open the door' of the banking industry to new entrants. Technology is frequently touted as having been one of the key elements in the formulae for productivity and profitability in the 1990s and beyond, and it is likely to be seen as the key facilitator for change within the banking sector for the foreseeable future. Regarding this issue, Al-Ashban and Burney (2001) claimed that the combination of technological advancements and the expansion of the SA economy in the past two decades transformed the banking system from playing a role mainly of financing trade to one of mobilizing and channelling financial resources more effectively.

3.2.2 Internal Forces

Deregulation and technological advances have brought about changes within the banking sector. The banking industry is now faced with two main challenges. Firstly, banks are facing intense competition from other (domestic and foreign) banks, larger building societies and insurers offering a whole spectrum of financial services.

Competitors not directly within banking, such as insurance companies, which see opportunities in banking, are beginning to enter the banking sector competitively (Essinger, 1999). Non-financials, such as Yahoo!, Microsoft and Disney, companies unrelated to the banking industry but which possess unparalleled technical and operational skills and resources enabling them to compete, are also entering the market. In addition to that, SA has established credit institutions aimed at providing concessionary loans to some economic sectors in the country. The soft terms of these institutions' lending program pose a challenge to the banking industry.

The 2008 financial crises has also shown how is the stability of Islamic financing in overcoming problems such as derivative financing, synthetic products and subprime loans. This has not gone unnoticed by SAMA and it is probable that the monetary agencies have been guided to be more receptive to allowing Saudi banks to operate under Islamic financing modes or convert their operations to Islamic financing. This was the case with SA's largest bank, the National Commercial Bank's decision to convert all its retail branches to Islamic finance branches (SAMA, 2009).

Automobile financial company is another challenge to the banking industry as they started playing a role in changing and promoting some new regulations to the financial industry market. Based on the policy related to automobile finance and market environment in SA and the experience of the developed countries in developing automobile financial business, the automobile financial companies has competed and cooperated with financial banks and became one of the main forces that impacted the SA financial industry (SAMA, 2009). In USA, the competition from automobile finance companies became high, such as General Motors Acceptance

Corporation and Ford Motor Credit. These companies generally finance their lending by selling short-term commercial paper so that the rate they charge on auto loans varies with market interest rates. To compete with these lenders, banks have been forced to adjust rates on new auto loans in line with finance co. and market rates.

Secondly, banks are facing more demanding customers. Over the years, banks have noticed a change in customer behaviour. It has been argued that customers are increasingly sophisticated, more demanding, more financially educated and more cost and price conscious than hitherto. The rise of customer awareness and expectations regarding financial services has effectively forced providers into offering a wider range of products with lower margins and higher standards of service (Lichtenstein and Williamson, 2006). Owing to increased competition, banks, both in SA and globally, have increased in homogeneity and have come more to compete in an increasing number of areas, with more banks competing directly in more markets than has traditionally been the case (Al-Ashban and Burney, 2001). Historically, customers were rather passive, which allowed banks to dictate the services offered, and when and where they were available. Today, the customer is more informed, more selective, and much more willing to change providers to obtain the right service delivered in their preferred way. Harris and Watkins (1998), for example, argued that the traditional concept of loyalty based on the old conviction that, if you get a customer young you keep them for life, has been transformed, because keeping customers has become a more difficult task due to the stronger competition.

In this section, a more in-depth explanation of one of the main factors that affect the customers' attitudes toward the financial services is considered. Customer awareness of financial services has been raised by the media attention. The media report on

issues such as poor performance, lack of security, and quality (Lichtenstein and Williamson, 2006). Legislation has also increased customers' rights while technology and competition have increased their choice of services and providers. Jayawardhena and Foley (2000) claimed that the internet is an important contributor to the changes in customer behaviour. They also believed that customers would become more discerning as information became more accessible over the internet. They went on to say that customers will have access to online 'intelligent agents' that will give them the ability to compare products and services for the best terms and conditions. However, there is a possibility that this could also lead to customers being overloaded with information. In a situation like this, there is a risk that customers will become more confused, causing them to lose sight of their original ideas (Roszak, 1994).

3.3 SA Economic Background

The Saudi economy is a free market economy. The country has open liberal policies, no constraints on capital movements and no exchange restrictions. It has a very liberal tax system, which means that individuals and companies pay few taxes and those few taxes are at very low rates. Although the 2008 financial crisis affected the world economy, the SA economy has been growing rapidly in recent years due the increases in the oil prices in the world, which has impacted the income by doubling the nominal terms between 2002 and 2011 with a Gross Domestic Product (GDP) of USD 676.2 billion. Firms in the building and construction industry, including cement producers, have been among the main beneficiaries, as the government has moved to ease a housing shortage. The petrochemicals sector, which has access to low-priced inputs, could see its exports crimped in 2012, however, if the global economy slows (Platt, 2012). Table 3.1 shows a summary of the GDP, inflation and unemployment rates from 2000 to 2011:

GDP growth, inflation and unemployment rates for Saudi Arabia (2000-2011)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GDP(%)	4.87	0.55	0.13	7.66	5.27	5.55	3.16	2.02	4.23	0.6	3.74	7.54
Inflation(%)	-1.1	-1.14	0.23	0.59	0.36	0.63	2.31	4.11	9.87	5.06	5.35	6.02
Unemployment(%)	8.15	8.34	9.66	10.35	11	11.52	12	11	9.8	10.46	10.48	
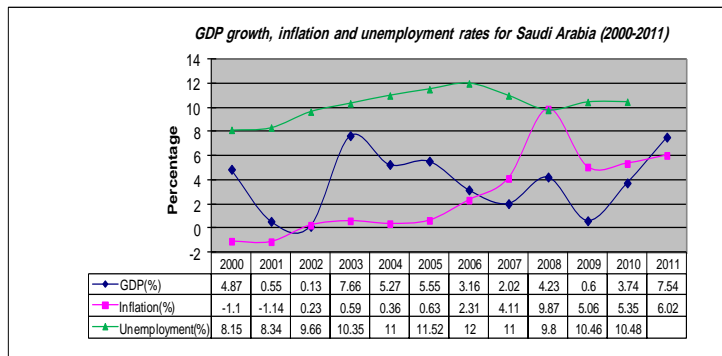
Table 3.1: GDP growth, inflation and unemployment rates for SA (2000-2011
Source: (economywatch.com, 2012).

Table (3.1) shows that SA's GDP growth in year 2010 was 3.744%; as a result, SA was no. 97 in the world rankings according to GDP growth. However, in 2011, GDP growth was 7.54%, which is 101.42% more than the 2010 figure. With regards to the inflation (Average Consumer Price Change %) for SA in 2010 was 5.354 %, with SA at no. 61 in the world rankings. In 2011, the inflation rate for SA was at 6.02 %, that is, 12.36% more than the 2010 figure. On the other hand, the unemployment rate (% of labour force) for SA in 2010 was 10.48 %, with SA at no. 29 in the world rankings. In 2009, the unemployment rate was 10.46 %, which was 0.11% less than in 2010. This concludes that the GDP is in increase, inflation and unemployment are steady in the last three years in SA.

SA's government announced a record budget for 2012, with top priority being given to education and manpower. Total spending for 2012 was budgeted at $184 billion, an increase of 19% over the budgeted total for 2011 (Platt, 2012). However, the budgeted spending for 2012 is estimated to be lower than the actual spending in 2011, which was inflated by an off-budget two-month salary bonus for public workers and additional spending on social programs in the wake of the Arab Spring uprisings in the region. The government also raised the minimum public-sector wage and hired an extra 60,000 staff for the Ministry of the Interior last year (Platt, 2012).

Figure 3.2 illustrates the oil prices records and abundant liquidity characterized the period, with oil prices reaching USD 125 per barrel (pb) in mid-2008, but falling back to an average of USD 55-60 pb in 2009 and an average of USD 68-75 pb in 2010 (SAMA, 2010). On the other hand, there are serious difficulties in the employment market, as 38% of the population is under the age of 15. The country's unemployment rate is 13%, without any proper taxation system, and inflation was above 10% in 2008 (SAMA, 2009). Reference to Figure 3.2 shows that by the 1990s, the spot and futures oil market accounted for over 60% of oil sales, compared with less than 5% in the 1960s (Oweiss, 1990; Parra, 2004). These new market players were reactive to day-to-day variations in demand and supply, supported or exaggerated by real events or rumours in the market.
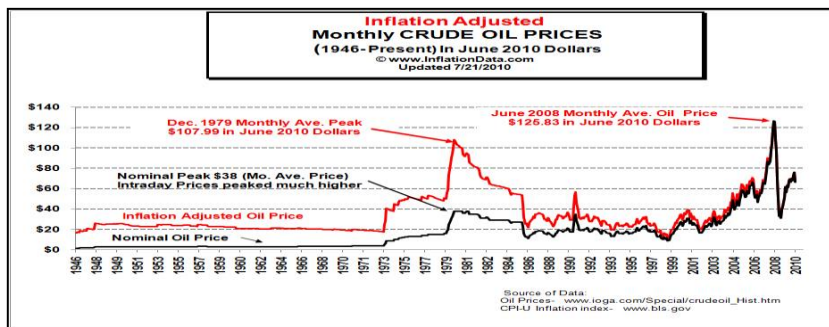
Figure 3.2: Monthly Crude Oil Prices with the adjusted inflation (1946-2010).
Source: (Platts.com, 2010).

The oil and energy sector is still a significant contributor to the Saudi GDP. The oil sector contributes on average around 40% of the Saudi GDP, but this rose sharply to around 55% in 2008 due to exceptionally strong oil prices, as illustrated in Figure 3.2. What has been noticeable, though, is the increased capacity for refined oil products, which more than tripled from 222 million barrels in 1972 to over 720 million barrels in 2008 (SAMA, 2009).

Figure 3.3 maps out a global prosperity index using Purchasing Power Parity (PPP), adjusted GDP per capita, and growth of real GDP per capita for the period 1998-2007.

It indicates that SA, although doing better than most Arab and other developing countries in terms of GDP PPP per capita growth, did not outperform other countries in the Gulf Cooperation Council (GCC) block. Qatar was the highest at USD 73,000, ahead of the USA and on a par with Norway, SA average was around USD 22,000.
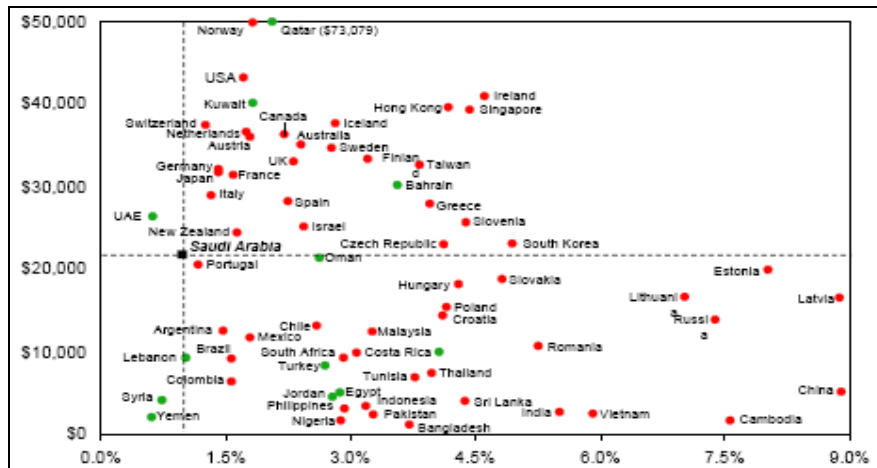
Figure 3.3: Global prosperity performance growth of real GDP per capita adjusted in PPP terms, CAGR (1998-2007).
Source: Porter (2009).

3.4 Financial Services History in SA

The SA financial system consists of various types of banks, the government-controlled SAMA, private commercial banks, specialized credit institutions, and the stock market, as illustrated in Figure 3.4 (US-Saudi Arabian Business Council, 2002).

3.4.1 SA Monetary Agency (SAMA) "The Central Bank"

The need for a banking system became apparent when pilgrims visiting the holy places in SA needed to exchange money. The first foreign bank was established in 1926. Prior to 1952, SA had no official monetary system; the people used metallic (or silver) coins or foreign currencies as an exchange medium in circulation for trading purposes. Originally, there was resistance from religious people against the

establishment of a banking system because banking interest is against the *Shari'ah*[1] (Islamic) laws. The 1950s brought an increased need to form foreign and domestic banks, especially with the revolution in the oil industry which continued to grow dramatically on an annual basis (Money and Banking, 1992). Saudi banks circumvented the insurance services outlawed in the *Shari'ah* by using *Takaful*[2], which is an acceptable Islamic form of insurance. In 1952, SAMA was established to stand at the apex of the financial system, as shown in Figure 3.4. It was intended to serve as a regulatory agency and act as the government's bank. In the 1960s, SAMA created banking regulations to develop the banking industry further.
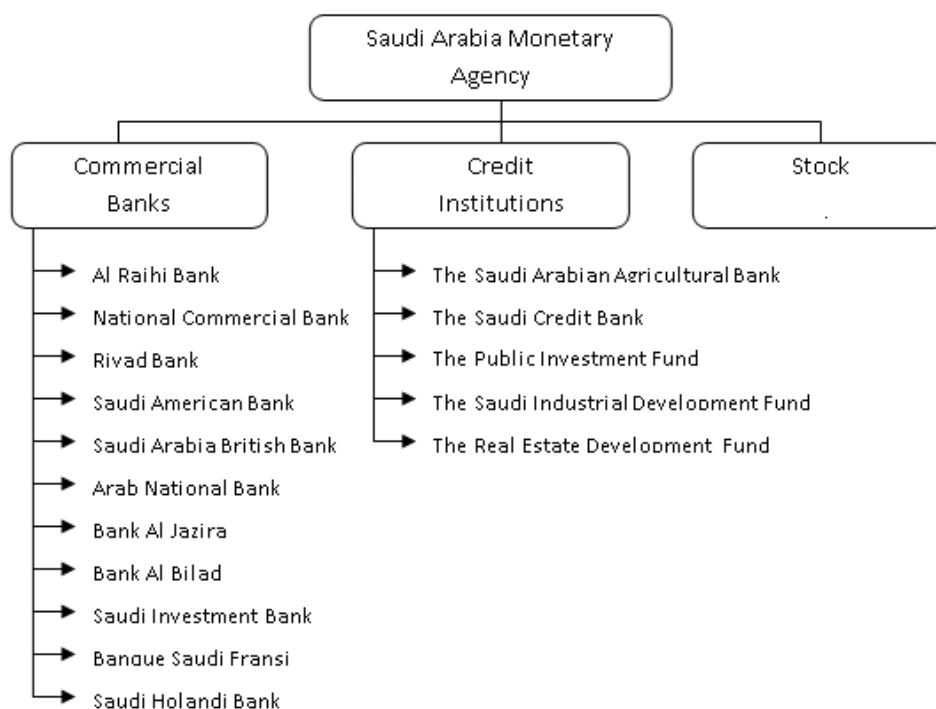
Figure 3.4: The SAMA system .
Source: (U.S.-Saudi Arabian Business Council, 2002).

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[1] *Shari'ah literally means 'way to water' – the source of all life – and signifies the way to God, as given by God. It is the Way which encompasses the totality of man's life (Ghayyur, 2003).*

[2] *Takaful (Insurance Expenses): is simply an Islamic alternative to the conventional insurance system. The Takaful concept aims to provide services to policyholders by protecting the participants against an inability to overcome future unwanted events and difficult times through the creation of a defined pool contributed to out of their common resources (Ben Arab and Elmelki, 2008).*

The Saudi currency, the Riyal, was initially circulated in 1972. Starting in 1980, SAMA began working as a consultant to the government in managing its public debt, restructuring the financial market, and regulating and monitoring commercial banks. SAMA continues to implement the monetary policy of SA. SAMA and commercial banks have played a significant role in upgrading and developing the Saudi banking technology, such as electronic clearing, ATMs, stock trading, and the Electronic Funds Transfer System (Money and Banking, 1992; SAMA, 2002; US-Saudi Arabian Business Council, 2002). Although SAMA adopted IsB in the financial sector, it recognised the importance of bringing foreign investment into the country to the economic development process of SA.

Therefore, SAMA has always supported and encouraged the acceptance of the new universal banking models for banks in SA. Consequently, the SA domestic banks have become the primary financial institutions for the provision of all banking and financial services. The result of this policy was to ensure systemic stability in those banks. It was also to promote healthy competition, as banks were able to devote sufficient funds and suitable human resources to providing a broad range of financial services, including fund management, stock brokerage, investment advice and interest-free banking. In addition, banks have been distributing life insurance and other insurance products to their customers and investing in leasing firms. These initiatives have promoted a very healthy, competitive environment in the domestic market (SAMA, 2003). The following sections explain the history and the origins of the Saudi financial services and the evolution of the banking sector in SA.

3.4.2 The Saudi Stock Market

The Saudi stock market started operating informally in the late 1970s. The extraordinary growth in the demand for oil in the early 1970s resulted in significant increases in the income of the government in a relatively short span of time. This led to the creation of vast wealth, which needed to be channelled into the development of the infrastructure, industry, agriculture, and commerce in the country as a whole. As mentioned earlier the market regulation has been announced in 1984. The Saudi Share Registration Company (SSRC)[1] was established in 1985 and ESIS was introduced 5 years later in 1990. The participation in the market was restricted to Saudi citizens; however, in 1997, the Saudi Finance Minister announced that foreigners could invest in Saudi stocks through a single closed-end mutual fund[2], namely, the SA Investment Fund (SAIF), traded in London. As it was a "closed-end" fund, the SAIF limited foreign money in the Saudi market to USD 250 million, the initial size of the fund (SAMA, 2004).

The main objective of SAGIA is to oversee investment affairs in SA, including foreign investments. Its functions include the preparation of relevant government policies, conducting executive plans and criteria, monitoring and evaluating the performance of local and foreign investments, conducting studies in investment opportunities and coordinating with the relevant government bodies. Since its creation in 2000, SAGIA has been an important player and influence in the development of

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[1] *The Saudi Share Registration Company (SSRC) looked after the functions like depository and registration. Under present regulations, SSRC is allowed to transfer shares from a seller to a buyer directly at the instruction of the two parties concerned, without going through the banking channels (Al-Dukheil, 2002).*

[2] *A closed-end mutual fund is a publicly traded investment company that raises a fixed amount of capital through an initial public offering (IPO). The fund is then structured, listed and traded like stock on a stock exchange (Wadadekar, 2010).*

new laws and in economic reforms to encourage investments. Since its creation, hundreds of new investment projects have been approved with billions of dollars in new investments (SAGIA, 2001).

Until 2001, the Saudi Stock Market had operated through a computerized, order-driven continuous screen-based trading system, ESIS, which was supervised by SAMA. In 2000, more than 78 firms were listed on the stock market, and in the fourth quarter of 2001, ESIS was replaced by a new trading system called "TADAWUL". In 2001, the shares volume had increased to 694 million shares, an increase of 22%, the value traded had also increased to SR 83.8 billion, an increase of 28.9% compared to 2000 (SAMA, 2002).

In 2003, the "Capital Market Law" was introduced to restructure the capital market in the country, taking advantage of international stock market standards. The reason for issuing this law was to protect the investors' rights and to ensure the reliability and confidence in the Saudi Stock Market. Figure (3.5) describes the Saudi market index (TASI) levels and traded values between year ends 2000 and 2011. It can be noticed the real revolution of the IB and its relation with the Saudi stock market, from ends of 2002 and the beginning of 2003, the rapid boom in the Saudi stock market settled and the stock price index kept growing steeply, without major breakdowns, to reach its top level (over 20,600 points) by the end of February 2006, and a decline after that going down to reach 10,000 points by May 2006, below 8,000 points in the beginning of 2007, and closed at 6,121.8 points at the end of 2009 compared to 4,803 points at the end of 2008.
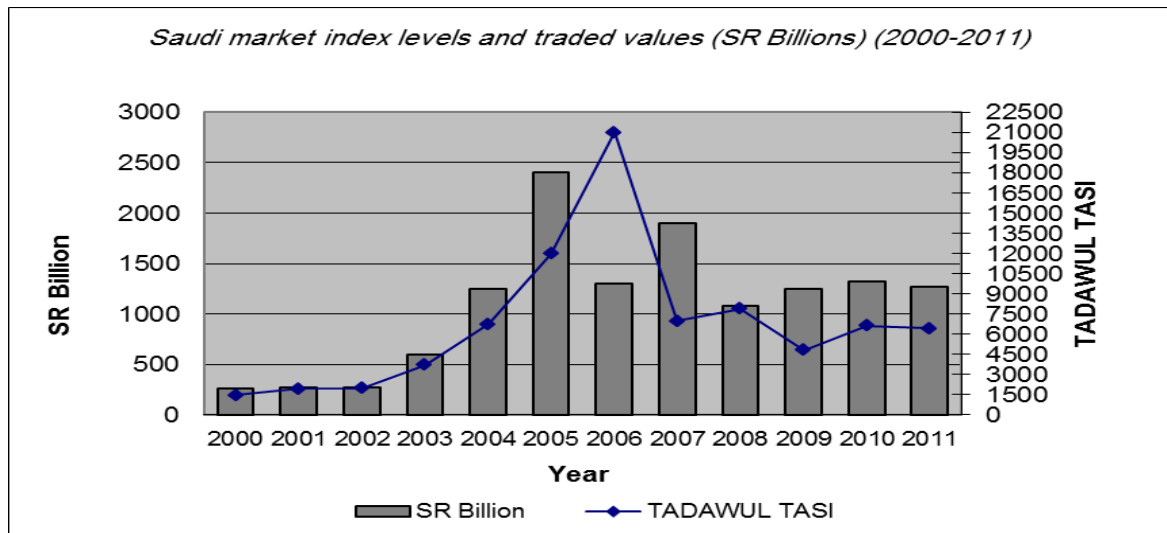
Figure 3.5: Saudi market index (TASI) levels and traded values year ends (2000-2011).
Source: (Capital Market Authority (CMA), 2012).

The increase in listed companies on the Saudi capital market is illustrated in Table 3.2

for the period 1990-2011.

Year	Companies listed	Total shares issued (million)
1996	70	3,921
1997	70	3,983
2002	68	9,807
2006	86	19,328
2007	111	30,728
2008	127	39,728
2009	134	41,223
2010	146	33,334
2011	149	48,536

Table 3.2: Saudi-listed companies and number of shares issued (1990-2011
Source: (CMA, 2012).

In terms of the volume of shares traded, the petrochemical industries sector was the

most active sector during 2011; the number of shares traded for the sector reached

9.55 billion shares, representing 19.67% of the total volume traded during the year,

followed by the Insurance sector with a volume of 7.19 billion shares or 14.81% and

the real estate development sector with 5.30 billion shares traded or 10.91% of the

total shares traded during the year 2011(CMA, 2012). Figure (3.5) and Table (3.2)

show the real boom the Saudi stock market, started with the revolution of the IB

starting from 2002.

3.5 Islamic Banking (IsB)

On 11 December 2005 SA became the 149th member of the WTO (WTO, 2005). Local banks were forced to refine and improve their services - in pricing, flexibility, delivery, and after-sales services - to meet the required standards. Therefore, most of the Saudi banks have been working hard since accession to WTO to capture a good market share by introducing services to attract the deposits of corporate parties as well as individual clients. Saudi banks are currently offering a wide range of 'Islamic products' ranging from corporate and consumer loans to credit cards.

With the rise of IsB, e-banking and IB, the government realize the importance and needs to come up with the appropriate legal, regulatory and accounting infrastructure for such banks. *Shari'ah* governance is also a major issue. Saudi consumers have recently been complaining about the confusion in the market relating to Islamic financial products, because of a perceived free-for-all in terms of *Fatwas*[1] (legal opinions) as to what is a *Shari'ah*-compliant financial product or not. Market sectors set to offer excellent opportunities include housing finance, education plans, insurance, small businesses, pensions, credit cards, retail investment products and remittances. The banks that offer IsB services are similar to a modern western bank in almost all of functions, which empowers them to mediate any shortcomings or surpluses that may exist in a monetary exchange economy.

In general, IsB services are services which can be provided by a bank which also provides non-Islamic services. So, the differentiation between Islamic and

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[1] *A religious decree. A ruling made by a competent Shari'ah scholar on a particular issue, where fiqh (Islamic jurisprudence) is unclear. It is an opinion, and is not legally binding. It may address either a specific problem of interest to a particular person or a matter of public concern (Institute of Islamic Banking and Insurance, 2009).*

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conventional banks is in service levels, not in bank levels, as customers are the one who select between the Islamic or non-Islamic services. However, the main difference between Islamic and conventional banks lies in the fact that conventional banks charge and pay interest, whereas Islamic banks do not as they consider interest as *Riba* (a prohibition outlined in the *Qur'an*) (Ghannadian and Goswami, 2004). Despite such a limitation, Islamic law does not require that the seller of a product be Muslim (Ghannadian and Goswami, 2004).

National Commercial Bank (NCB) launched a new promotional campaign titled "One Easy Way to Win" offering its customers an opportunity to win six luxury villas valued at SR 1 million each. The promotion came with NCB's Islamic credit card. According to Abdulrazzak Elkhraijy, head of NCB's Islamic Retail Banking Division, "it is the only credit card in the world which allows its customers to pay the value of their merchandise in accordance with the principles of *Tawarruq*[1] sales. NCB also has products that allow customers to receive Islamic personal loans based on the *Murabaha*[2] concept. It boasts the largest family of Islamic investment funds under its Al-Ahli brand (NCB, 2006).

As a Muslim country, SA adheres strictly to the IsB principles believing that paying and receiving interest are considered inappropriate financial practices.

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[1] *"Tawarruq" is reverse "Murabaha", for the purpose of acquiring cash through trade activities. Technically, according to the Muslim jurists, Tawarruq can be defined as a person who buys a commodity at a deferred price, in order to sell it for cash at a lower price. Usually, the sale is to a third party, with the aim of obtaining cash. This is the classical form of Tawarruq, which is permissible, provided that it complies with the Shari'ah requirements on sale (bai) (Institute of Islamic Banking and Insurance, 2009).*

[2] *"Murabaha", in accordance with its literally meaning, is the sale for mutually agreed profit. Technically, it is a contract of sale in which the seller declares the purchase cost and profit (Institute of Islamic Banking and Insurance, 2009).*

Because of this fundamental belief, there are still Saudis who shy away from depositing money in commercial banks even through non-interest-bearing accounts (Habib et al., 1987). Increasingly, commercial banks in SA face keen competition from traditional money exchangers, specialized governmental funds, offshore banking units located in nearby country, Bahrain, and other Islamic banks. Islamic financing and a rapid increase in both Islamic and "conventional" institutions offering Islamic products and services, attests to the growing popularity of this market segment (Abdeen and Shook, 1984; Archer and Karim, 2002; Faroqui, 2002). The Saudi market is no exception, as evidenced by the remarkable market share that Al Rajhi Bank currently enjoys, and the conversion of a large number of the branches of the NCB to "Islamic branches" due to the high demand for the IsB services. Those "Islamic branches" are still offering some non-Islamic services but on a limited basis (SAMA, 2008).

SAMA (2008) reports indicate that Al Rajhi Bank is going one step further in identifying new Islamic financing instruments and is considering underwriting a multi-billion Riyal Saudi government Islamic bond program. This would represent SA's first Islamic bond, and such Islamic instruments would undoubtedly add breadth to the new Saudi capital market and provide Saudi investors with the choice of participating in Islamic-acceptable products and, in the process, would further deepen the Saudi financial system. As illustrated in Appendix J, IsB services are the key strength of Al Rajhi, NCB and Al-Jazira banks, and gave them the first mover advantage over the other banks. Therefore, the availability of IsB services online in the Islamic countries, such as SA, is an area of investigation in this study.

3.6 ICT Evolution in SA

IT infrastructure can be seen as a term used to embrace the collection of computers, communication equipment, operating software and links that jointly form the platform for delivering information products and services to the organisation, to its contributors and to its clients. IT infrastructure, according to Robertson and Sribar (2002), can be defined as a layer that is shared by a larger audience than the structures it supports and provides a shared service. Also, its lifecycle (plan, build, run, change, and exit) is distinct from the structures it supports. IT infrastructure is vital to organisations and is particularly necessary to those in industries going through active change, and those re-engineering their business processes (Broadbent and Weill, 1997). The government of SA has played a major role in introducing IT into the country. It has dynamically attempted to connect all public offices with the latest technologies to improve the quality of work and services. Meanwhile, it encourages the private sector to follow in its footsteps by applying highly developed technology to smooth the progress of their organisations for competing in a changing business world. In 1977, the Saudi government formed the Saudi Arabian National Centre for Science and Technology (SANCST), which in 1985, was renamed the King Abdulaziz City for Science and Technology (KACST); it is charged with formulating the national science and technology policies, as well as promoting and co-ordinating research activities among scientific organisations and research centres. KACST is one of the channels that provide internet services (KACST, 2005).

SA has also adopted a multi-phase plan to restructure the ICT sector. In the first phase, the responsibility for the provision of telecom services was transferred from the Ministry of Post, Telegraph and Telephone (MPTT) to a state-owned company, incorporated in 1989 as Saudi Telecom Company (STC). In June 2001, the second

phase started by reforming the policy and regulations. The government enacted the Telecommunications Act, which established the legal framework for the development of the telecommunications sector and authorized the creation of a regulatory agency. An independent regulator, the Saudi Communications Commission (SCC) was established. However, recognizing the importance of an integrated ICT approach, the Ministry of Communications and Information Technology (MCIT) was created in 2003 to replace the MPTT (MCIT, 2007). The mandate of the Regulator was extended to include IT, with its name subsequently being changed to Communication and Information Technology Commission (CITC) (CITC, 2007). In the third phase, partial privatization of the state-owned STC was completed in early 2003, by divesting a 30% stake in the company to the public (STC, 2004). In Sept. 2003, the liberalization phase (fourth phase) was considered when the Saudi government announced a timetable for the liberalization of the telecom sector–licensing a second mobile operator in the final quarter of 2004 and for fixed telephony services in 2006. During 2002-2004, CITC introduced competition into the ICT sector (CITC, 2006).

In 2010, SA's government spending on IT services increased by 10.2%, compared with 2009, to reach a value of SR 6.2 billion, and it is expected to expand at a Compound Annual Growth Rate (CAGR) of 15.4% through to 2015 to reach SR 12.6 billion. Project services, which encompass systems integration and application development, constitute the largest portion of the IT services market in SA. SA requires continued investment in the automation, modernization, consolidation, and integration of disparate IT systems. The need to integrate, automate, and streamline businesses is also expected to stimulate demand for project services, and this segment therefore continue to dominates the Saudi IT services market (CITC, 2012). Table 3.3 shows a summary of the SA ICT market's direct and indirect key drivers and barriers:

	Drivers	**Barriers**
Direct	▪ **Investment in Datacentres:** With organizations across vertical sectors investing in improving their IT infrastructure, the demand for datacentres in the SA is at an all-time high, with client organizations contracting IT service providers to design the required infrastructure. ▪ **Continued Evolution and Growth in Managed and Shared Services:** The outsourcing market in SA is evolving, primarily driven by the fact that service providers are increasingly investing in introducing new services portfolios and educating their customers. This has led to an increased adoption of hosting and managed services. ▪ **Consumer Sector Demand:** SA has a large population base with a high percentage of young people. Coupled with the factors of relatively high disposable incomes and increasing market reach, the consumer is expected to drive demand across multiple ICT markets, including PCs, and consumer mobile voice and data services.	▪ **IT Skills Deficit:** The Saudi market faces a shortage in IT skills. While this situation positively related with the outsourcing services offered by third-party service providers, it can also affect the economy on a broader scale. ▪ **Data Security:** Data security remains a key concern for Saudi companies across all verticals. ▪ **Customer Education:** On the one hand, SA has some very innovative and forward-thinking organizations in terms of IT usage, but to a large extent, a lack of customer education often inhibits the adoption of emerging technologies and solutions within the Kingdom.
Indirect	▪ **Economic Cities:** SAGIA, responsible for driving foreign direct investment (FDI) in the country is leading several initiatives, including the ongoing development of economic cities in the country. ▪ **SA's 2011 Benefit Plan:** In order to ensure SAs' facilitates improved public services and infrastructure; King Abdullah unveiled a benefits plan for SA worth an estimated SR 138.8 billion that primarily aims to address the demand for houses and civil infrastructure in rural areas across the country. ▪ **Investments in Infrastructure Projects:** The Saudi government has launched several large-scale infrastructure projects based on the long-term strategies of achieving a sustainable economy and reducing SA's dependence on oil revenues.	▪ **Regional Developments:** Recent regional events, such as the social unrest in certain Arab countries, have the potential to temper market sentiment and spending, and decrease the appetite for foreign investment in the region, including in SA. ▪ **Oil Price Volatility:** While oil prices are at a recent high, any fluctuations in the prices and any negative changes will indirectly affect IT spending.

Table 3.3: Direct and Indirect IT Market Drivers and Barriers in SA.
Source: CITC (2010).

3.6.1 ICT (Computer, Telephone and Mobile) Diffusion in SA

In 2001, SA was considered to be the largest ICT market in the GCC with a spending level of USD 3.9 billion, which corresponded to 60% of total IT spending in the GCC. SA's IT spending as a percentage of GDP stands at 1.99%. This means SA is ranked in second place among GCC nations compared with fifth place in 2000 in ICT spending per capita. SA invested USD 10.6 billion in IT, according to SAGIA, suggesting a healthy market for the ICT sector. The cornerstone of all these initiatives is SA's National ICT Plan. In 2002, the plan was first announced to the Saudi Computer Society (SCS) by His Royal Highness King Abdullah bin Abdul Aziz, SA's king (SAGIA, 2005). The national ICT plan includes a long-term vision and the first five-year plan for ICT in SA. The long-term vision is "to transform the country to an information society, so as to increase effectiveness and efficiency, and provide e-services for all sectors of the society, and build a solid ICT industry to become a major source of income for the nation". The objectives seek to bridge the digital divide by enabling all societal sectors to reach and access ICT services easily and utilize them effectively. Other objectives include creating job opportunities, raising the efficiency of education and training through ICT plus the preparation of qualified manpower (SAGIA, 2005).

The five-year plan includes projects that cover the main aspects of ICT usage, such as e-government, e-commerce, tele-work, telemedicine, e-learning, and digital Arabic and Islamic/cultural content. Further, they cover the regulatory activities, such as issuing licenses for new voice and data operators, and regulating the ICT market. The scope also includes ICT industry elements, such as identifying investment opportunities, research, development, innovation, international cooperation, and technology transfer. A set of indicators called the Information Society Indicators are

identified and measured against specific targets by the end of the plan (KACST, 2005).

According to a survey conducted by CITC in 2008, computer ownership among Saudi individuals was at 68% for 15 to 60 years of the total population. However, at the total population/household level, ownership stood at 43%. PC ownership in Saudi is considerably higher among the younger age group with about 73% of the 15-25 year-old segment owning personal computing devices. The same survey found that laptops do have good penetration and are owned by close to half the PC owner population (46%), and the majority of them own a single computing device. However, there are a few desktop owners who own more than one desktop – less than 10%. Among those owning a laptop, 16% own more than one laptop. Figure 3.6 shows the evolution of fixed telephone services in SA from 2001 to 2011 (3Q). The number of fixed telephone lines stood at 4.52 million by end of the third quarter 2011, of which around 3.34 million or 73% were residential lines. This represents a household teledensity of around 67%, while the population teledensity is around 1 telephone lines for every 6 inhabitants. This is slightly lower than the world average of 17.8%, but is higher than the Arab average of 10.5% and developing countries average of 13.5% (CITC, 2012).
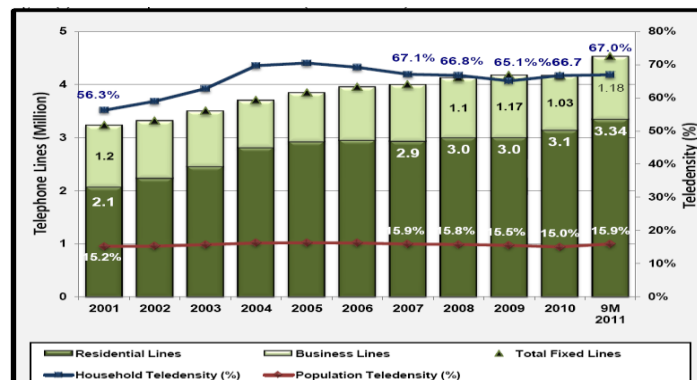
Figure 3.6: Telephone line growth in SA (2001-2011 3Q).
Source: (CITC, 2012).

Competition in the mobile telecommunications market started in 2005, as it had been a monopoly market before that, and this resulted in major developments in terms of service offerings, quality of service, customer care, reduced prices, and subscriber growth. The total number of mobile subscriptions had grown to around 56.1 million by end of the third quarter of 2011, with penetration at 198%. Prepaid subscriptions constitute the majority (over 87%) of all mobile subscriptions, in line with the trend in other similar markets around the world.
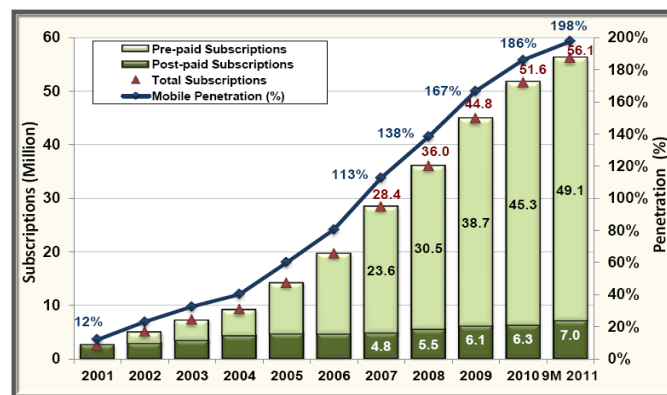
Figure 3.7: Mobile Penetration in SA (2001-2011 3Q).
Source: (CITC, 2012).

3.6.2 Internet Service Diffusion in SA

Internet service started in SA in 1998 following the Council of Ministers' decision no. 163 (on 03/03/97) authorizing the provision (KACST, 2005) of the service, under certain controls; the aim was to make the service available to customers to enable them to benefit from the great potential of the internet, while, at the same time, protecting the values and Islamic beliefs of Saudi society. The Saudi Arabian government spent two years designing a centralized control system before offering it for public connection in February 1999. The controls relate to blocking access to inappropriate content. Internet service is provided through three channels: the internet services unit at KACST, Saudi Telecom, and internet service providers (ISPs). Table 3.4 highlights the historical development of internet events in SA:

Year	Event
1993	King Fahd University of Petroleum and Minerals (KFUPM) in Dhahran becomes the first Saudi institution to connect to the internet.
1994	KACST becomes the '.sa' domain manager to coordinate internet services within the Kingdom.
1999	Internet access begins the move from government and academia into the mainstream.
2004	Liberalization of the ICT market by introducing new licenses for telecom services.
2004	SADAD has been introduced.
2005	MCIT establishes the e-Government programme.
2006	The transfer of internet-related responsibilities from KACST to CITC.
2007	Saudi Electronic Transactions Act promulgated – establishing rules for electronic transactions and digital signatures.
2010	Household broadband penetration reaches 41.6 % in SA.
2010	Saudi Post addressing system certified as complete.
2010	Registration opened for Arabic domain names under (السعودية.).

Table 3.4: SA main historical development internet events.
Source: CITC (2010).

The internet unit at KACST manages and operates the international lines through which the national internet network is connected to the international network; it supervises the internet gateway and blocks undesirable sites. STC provides, manages and maintains the telecommunication infrastructure in the country. It provides the linkage between customers and ISPs, between ISPs and the KACST network, and between KACST and the international network. Figure 3.8 shows a simple diagram of the internet infrastructure in SA (KACST, 2005).
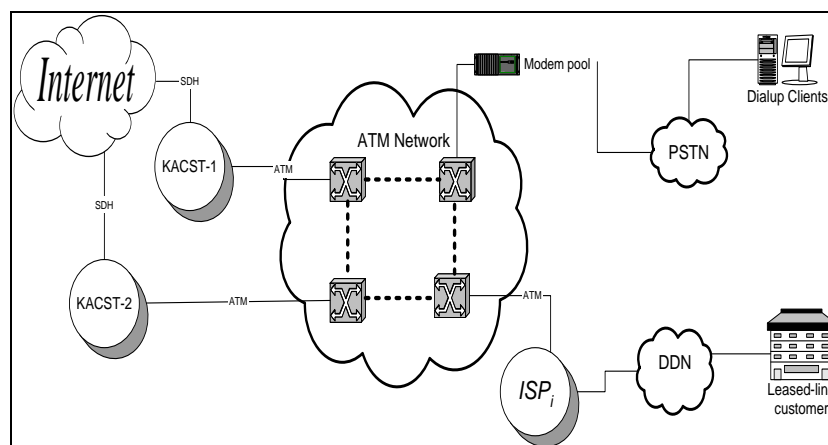
Figure 3.8: Internet infrastructure in SA.
Source: KACST (2005).

There are presently 31 ISPs in SA, of which 26 are reported to be operational. Between them, the five largest ISPs, which include Saudi Telecom's own SaudiNet, control 65% of the subscriber market (KACST, 2005). Accurate statistics are hard to come by in SA and figures in the public domain may be treated as confidential by the authorities. When studying the internet services in SA, it is important to evaluate the estimated extent of the provision of internet services in the Kingdom because the costs factor is a main factor in adopting the internet services. There are three main telecommunication companies, namely, STC, Mobily, and Zain, and all of them provide internet broadband packages. The detailed prices for these services are presented and discussed in the following paragraphs.

STC was incorporated in 1998, following the Council of Ministers' Decree No. 213 dated 23/12/1418 H, approving of the establishment of a Saudi Stock Company under the name of "STC". STC is the leading national provider of telecommunication services in SA. The company is working continuously to fulfil and satisfy the market requirements, keeping pace with the emerging technologies in the telecommunications sector and satisfying its customers' needs. In addition to their telephone land lines and Mobile services; STC has developed different types of internet broadband packages from SR 299 to SR 546 to meet the needs of the different levels of customers. Table 3.5 shows STC's different types and pricing scheme of internet broadband packages.

Internet Broadband	Cost Estimate (SR pcm)
Broadband Jood + SIM card 1G allowance	299
Broadband Jood + SIM card 5G allowance	349
Broadband Jood Plus + SIM card 1G allowance	449
Broadband Jood Plus + SIM card 5G allowance	499
Xband Jood + SIM card 1G allowance	346
Xband Jood + SIM card 5G allowance	396
Xband Jood Plus + SIM card 1G allowance	496
Xband Jood Plus + SIM card 5G allowance	546

Table 3.5: Different types of STC internet broadband packages with their prices.
Source: (STC, 2011).

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STC provides another service for land lines. This service allows the customer to benefit from an AFAQ Digital Subscriber Line (DSL) service with a connection to the internet by means of prepaid cards according to diverted connection speeds and full post-go-live support for DSL; the modem fees and service charges are shown in Tables 3.6 and 3.7:

Modem type	Modem price	Payment option
WiFi with ports	SR 220	SR 20 / month over 12 months

Table 3.6: STC AFAQ DSL modem fees.
Source: (STC, 2011).

Connection (Kbps)	Installation	Monthly Charges (SR)
128	SR 300	90
256		100
512	Fees Once at	120
1	Installation	140
2		160

Table 3.7: STC AFAQ DSL service charges.
Source: (STC, 2011).

Mobily is the trade name of SA's second telecommunications company, the Etihad-Etisalat consortium. The company, as the winning bidder for SA's second Global System for Mobile Communications licence (GSM), provides mobile telecom services nationwide, breaking Saudi Telecom's monopoly in the wireless business. The company launched 3.5G services on the 27 June 2006. Since entering the Saudi market in 2004, Mobily has adopted a solid expansion strategy, based on direct and indirect sales channels. This strategy has allowed Mobily to introduce different pricing strategies to target the different types of customers in SA, as presented in Table 3.8.

Broadband @ home Mbps	1 Month SR	3 Month SR	6 Month SR	1 Year SR
2	350	950	1525	2520
1	N/A	800	1120	1920
512	N/A	540	1020	1720
256	N/A	485	750	1450

Table 3.8: Different types of Mobily internet broadband packages with their prices.
Source: (Mobily, 2011).

Zain is the newest player in the mobile telecommunication market of SA. Zain is striving to become the preferred choice for voice, messaging, multimedia, call management, data and other services in SA. Zain Group has been introduced to the SA telecom market by building a trusted and effective telecommunications provider for the largest country in the Middle East. As part of their strategy, Zain introduced the following monthly estimated cost for their broadband services in SA, as seen in Table 3.9.

Monthly Plan	Estimated Cost (SR)
Pay Per Day	9
Standard Package: 1GB monthly	100
Plus Package: 5GB monthly	200
Unlimited Monthly	350

Table 3.9: Different types of Zain internet broadband packages with their prices
Source: (Zain, 2011).

CITC (2010) conducted field and online surveys investigated rating the internet broadband services prices provided to households. The majority (79%) of the field respondents revealed prices as (moderate to expensive) and majority (80%) of the online respondents rated the service as expensive to very expensive. On average across both field and online surveys; respondents rated prices of mobile service as moderate to expensive.

The number of internet subscribers was estimated at 100,000 at the end of 1999. That number had increased to 900,000 in 2001, and to 1,500,000 at the end of 2003. In addition, there are some 3,500 subscriber internet lines and about 2,500 internet-leased lines. The number of users had reached 4,800,000 or 18% of the population at the end of 2006. However, in 2008, this had increased to 30.5% of the entire population of SA and internet penetration had reached 43.6 at the end of 2011, as illustrated in Table 3.10 and Figure (3.9).

Country / Region	Population Millions	Population Penetration
North America	347	78.3%
UAE	5	69%
Qatar	0.85	66.5%
Oceania/Australia	35.4	60.1%
Europe	816.4	58.3%
Bahrain	1.2	53.5%
Oman	3	48.4%
Iran	77.9	46.9%
Turkey	78.8	44.4%
SA	26	43.6%
Kuwait	2.6	42.4%
Middle East	216	33.5%
World Total	6930	30.2%
Jordan	6.5	26.8%

Table 3.10: The internet penetration rate in SA, GCC and other countries, as end of 2010.
Penetration rate = Internet users/ population.
Source: (Internet World Statistics, 2011).

Table 3.10 shows the disparities in internet penetration across GCC countries and different regions. In comparison with the other GCC countries, SA was found to be one of the lowest ranking countries in terms of internet penetration, with a rate of 43.6 at the end of 2010, and that might be due to their infrastructure readiness.

According to a study about internet users in SA that was conducted at the end of 2011 by the SA CITC, the number of internet users in SA had grown from around 1 million in 2001 to an estimated 11.4 million by the end of 2010, and 13 million by the end of the third quarter of 2011, as shown in Figure 3.9.
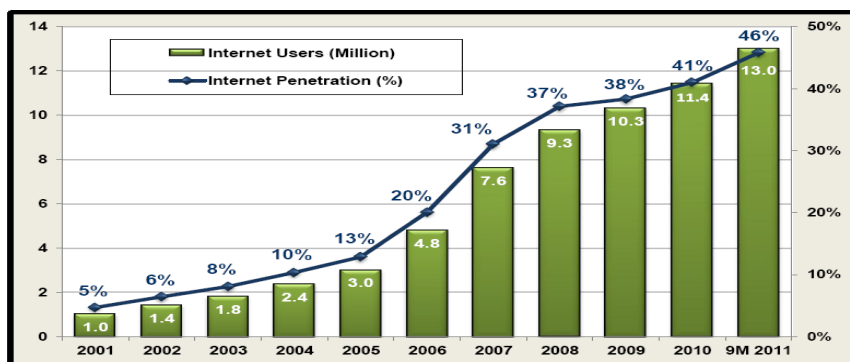
Figure 3.9: Internet penetration in SA (2001-2011 3Q).
Source: (CITC, 2012).

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Regarding the reliability of internet services, multiple linkages are used through a number of international ISPs and fibre-optic lines via different marine cables. Figure 3.10 shows the distribution of domain names registered in the country as of February 2012.
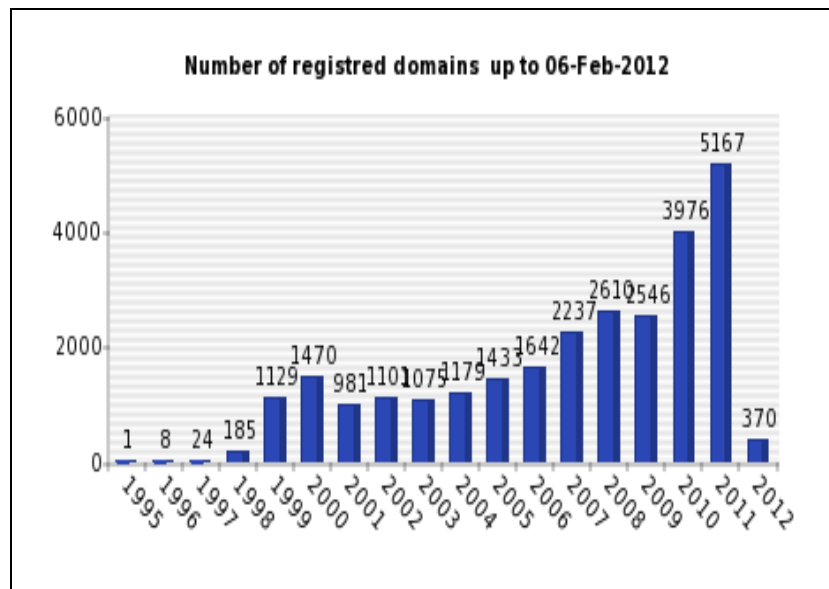
Figure 3.10: Number of the registered domain names in SA as of February 2012.
Source: (Saudi Network Information Centre (SaudiNIC), 2012).

Between 2004 and 2011, the ICT sector grew by a CAGR of 10%, two and a half times (250%) the overall GDP CAGR of 3.66%. This rapid growth is attributed, among other factors, to increased public awareness of the internet, growth in broadband, decreasing cost of both computers and internet access, and enhanced usefulness of the internet (e.g. more Arabic language sites and an increasing number of applications, such as IB and e-commerce/government applications).

As is evident from Figure 3.11, most broadband growth was due to a phenomenal increase in wireless broadband connections. Fixed broadband subscriptions, including DSL subscriptions, fixed wireless (Wimax) subscriptions and other fixed lines had grown to around 3.13 millions subscriptions at the end of the third quarter of 2011.
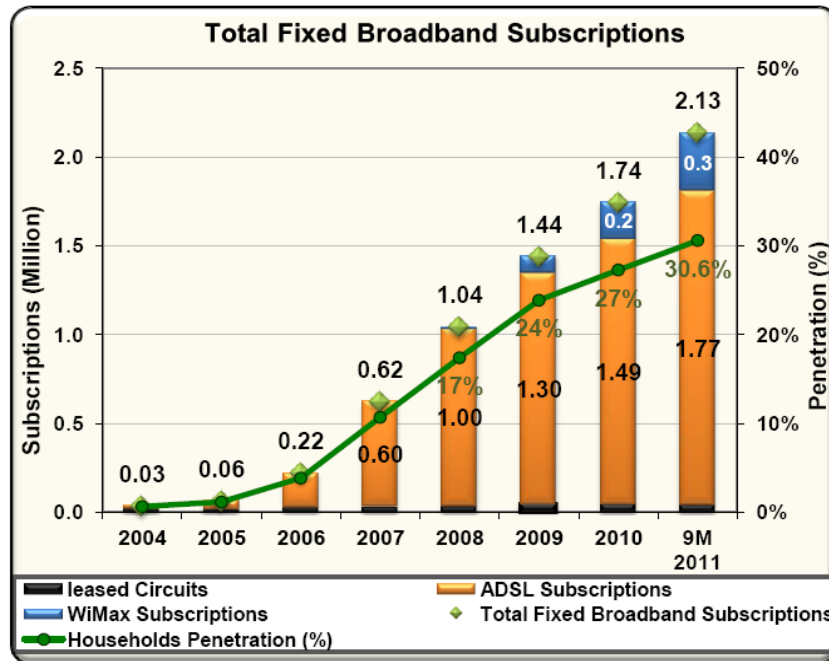
Figure 3.11: Broadband penetration in SA (2004-2011 3Q).
Source: (CITC, 2012).

The fixed broadband penetration rate stood at around 30.6 % of households at the end of the 3rd quarter of 2011. Despite the high growth rates over the last few years, there is high potential for more growth in broadband services. The broadband market is significantly underserved in many suburban and rural areas. With the opening up to competition of the fixed telecommunications market, the intense competition in mobile broadband offerings, and the increased consumer demand for fast internet connections, the broadband market is expected to continue to grow at a rapid pace, as the mobile and fixed service providers continue to roll out their broadband networks with competitors fulfilling the growing demand.

In 2010, CITC conducted a large-scale survey involving over 1,500 Saudi residents and more than 400 companies, government entities and other stakeholders of the internet network. CITC's research found that usage of the internet is increasing among all sectors of Saudi society. Although there are still some barriers to the widespread adoption of cutting-edge services, residential, government, and enterprise users all indicated that they expected the internet to play an increasingly central role

in their life and business over the next five years. Enterprises most often use the internet for interacting with government authorities and for accessing banking and financial services: more than 75% of the respondents used the internet for these operations. However, the most frequent use of internet content by government organizations was interaction with other government authorities, with 90% reporting such usage. The next most-widely used functions were HR-related activities, banking and financial services, and training and education. While internet usage in SA still lags behind among most of the developed countries, CITC's research confirms that the internet has become an integral part of Saudi society. Figures 3.12 and 3.13 present the Saudis' attitudes toward the usage of internet and the purpose of their usage.
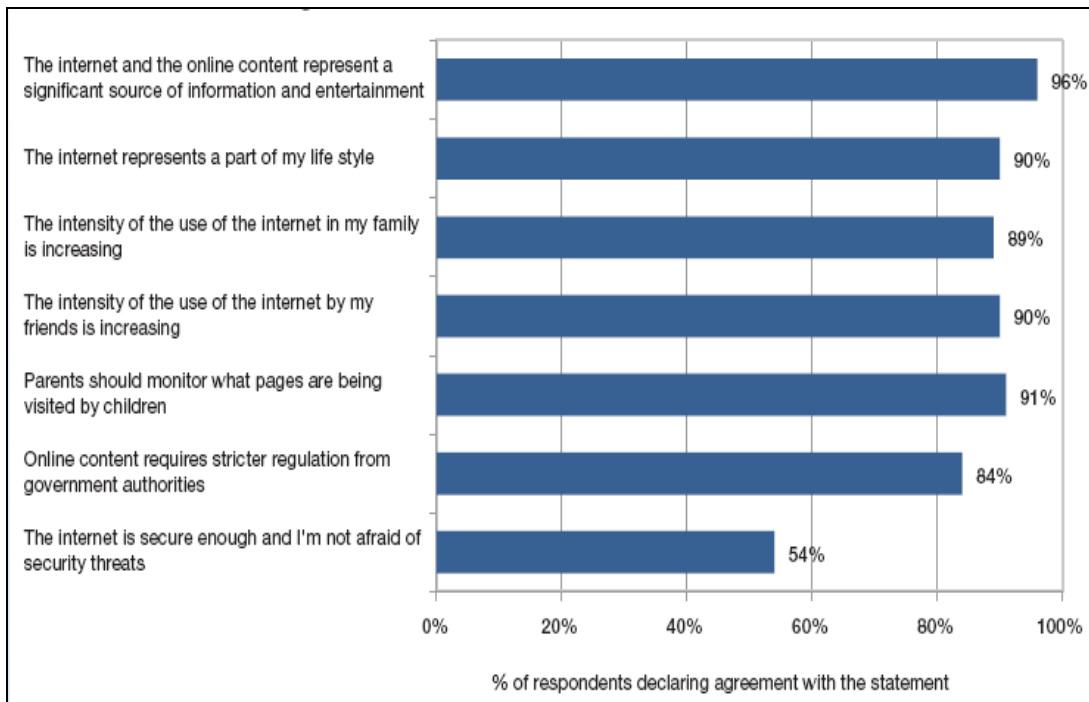
Figure 3.12: Saudi attitudes toward internet content.
Source: (CITC, 2010).
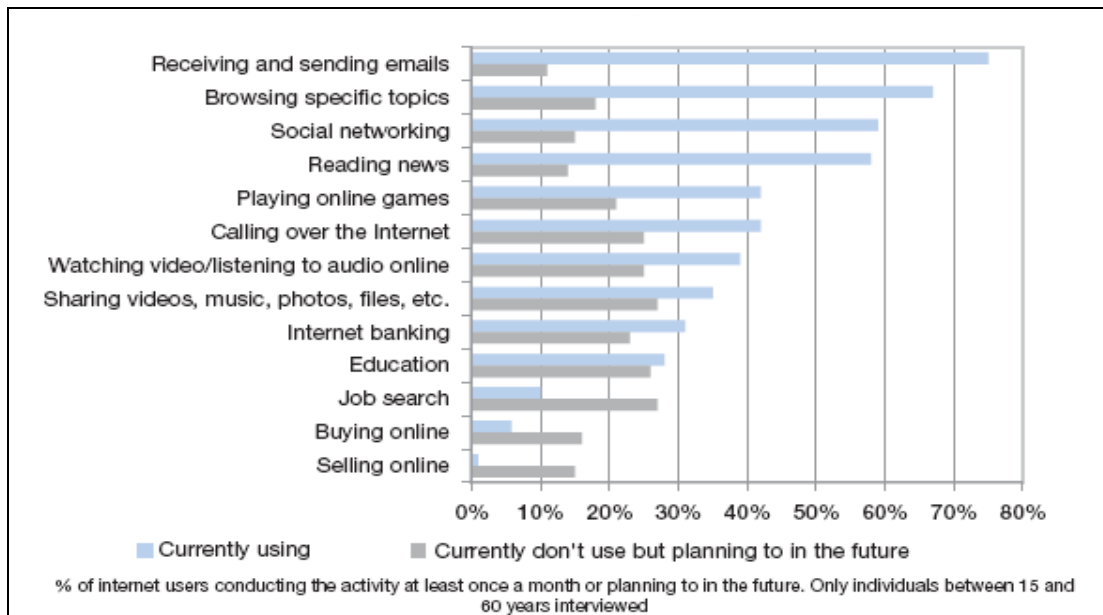
Figure 3.13: Saudi usage of internet content.
Source: (CITC, 2010).

On the other hand, Al-Far (2005) and Almobarraz, (2007) found that "lack of training in using internet applications as well as the difficulty of dealing with English language were the most common problems when accessing the internet". CITC (2008) conducted a study about the internet usage, asking those who did not access the internet to give their reasons for not doing so. The most frequently occurring reason (34%) was that they did not know how to use a computer. Almost one in five (19%) claimed non-affordability (cannot afford to have an internet connection, or probably the necessary computer to support it). Only 8% of them stated that their family did not allow an internet connection at home (CITC, 2008).

In addition to that, SA is considered as a country where there is a high risk of being a victim of e-crime (Al-Hakim, 2012). Al-Hakim (2012) also reported in the Saudi Gazette that banks in SA have sustained losses of USD1 billion over the past two years because of electronic crimes. He also reported that the law needed to address the lack of regulations to fight cyber crime, in addition to dealing with the absence of proper rules and regulations to combat these crimes which have caused SA's banks to

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sustain great losses. In a similar vein, Shafi (2002) found that Saudi businesses use the internet mostly for conservative tasks; therefore, the security concerns did not affect the customers' attitudes when adopting or using the IB services. Moreover, Humaidan reported in an Arab newspaper in 2010 that Saudis generally do not complain when they fall victims to internet cyber crimes; most of them whose e-mails had been hacked preferred to open a new e-mail account instead of reporting the matter to the police. This finding is also supported by the fact that the Saudi government has established huge filtering system for the internet users which let the users feel that these filtration systems will keep them secure when using internet or even IB. With regards to that, Hermida (2002), referenced in a Harvard Law School report, found that 2,000 sites had been blocked by the Saudi government; according to O'Connell (2008), which had increased to 400,000 sites in 2008. The majority of these blocked websites were sexually explicit or had religious content, while the rest were about women, health, drugs, and pop culture. It is unique for a country to block websites in order to maintain Islamic values and prevent people's beliefs from being influenced (Hermida, 2002).

3.7 Chapter Summary

This chapter started by highlighting the nature of the international banking industry and the different forces that relate with the sector. This showed that the banking industry is a very dynamic and is continually experiencing rapid change, especially with the introduction of new technologies, such as IB. Moreover, the economic background in SA introduced and the main economic indicators were found to be strong compared with GCC, Arab and world averages, as the GDP, inflation, and unemployment rate were 7.5%, 6.02% and 10.46% respectively.

This chapter also revealed that the average wage for males was SR 7,650, and for females was SR 3,100. The global prosperity index using PPP indicated that the SA average income per capita was around USD 22,000; Qatar was the highest at USD 73,000 ahead of the USA and on a par with Norway. With regards to that and with the presence of three main ISPs in SA, namely, STC, Mobily and Zain, and all of them provide internet broadband packages; the internet service has been found expensive. This finding supported by Al-Furaih (2002) who found that the cost of internet services is expensive compared with the income levels and average wages in SA. This is also in line with the findings by CITC (2010) that almost one in five of those surveyed (19%) claimed non-affordability (cannot afford to have an internet connection, or probably, the necessary computer to support it).

This study found also that 11 banks have established their presence on the internet since 2001, as their websites were bilingual, being designed for both Arabic and English speaking users, and among those banks, the key strength of Al Rajhi Bank and NCB was the IsB, as the Islamic values were found to be very important and significant to Saudi Arabians. Regarding this, and because of the presence of the internet, managing the branches of foreign banks, post WTO accession, has added to the challenges faced by the SA banks in the medium- and long- term.

This study also found that internet penetration had reached 43.1% at the end of 2010 and 46% at the third quarter of 2011, which is over the Middle East average (33.5%) and the world average internet penetration (30.2%). With such an increase of the internet penetration and unlike other countries; SA is facing a serious internet security challenge especially given that, as indicated in this chapter, Saudis generally do not complain when they fall victims to internet cyber crimes. Therefore, the government

should increase people's awareness of the security issues, taking into account the participation of the private sector and their role of minimising such attitudes.

Finally, the IB sector and different issues arising from IB were also evaluated; the aim of the service initially was to provide two-way communication to ask for further information or make suggestions. This progressed to banks using the internet for transactional purposes i.e. as a proper delivery channel. The introduction of internet technology has offered additional challenges to SA's government due to the uncertainty regarding maintenance of the infrastructure. Thus, government agencies and financial institutions face additional responsibilities to develop and improve the infrastructure of IB services. In SA, IB has seen only limited adoption compared to most western countries and other Arab countries. Next chapter will present the research philosophy, methodology and design which details the data collection method and conclude with the proposed inferential statistics.

Chapter Four

Research Methodology

4.1 Introduction

The aim of this chapter is to describe the research methodology that was was developed as part of this research and to explain the stages undertaken and the methods employed by the researcher to collect the data. This chapter is structured as follows. It starts with an overview of the research philosophy, methodology and design, including the type of research. It is followed by a detailed discussion of the justifications for the research philosophy and the design adopted in this research including the population and sample. This chapter also provides a detailed description of the data collection methods and stages, coding procedure, dealing with the missing data, the questionnaire design and layout, the pilot work, the question types and format, the covering letter, the respondents, the contents of the final version of the questionnaire, administering the questionnaire, and the reliability and validity evaluation. The operational definitions and the measurement of the research variables are also presented in this chapter. Last but not the least, this chapter present the research descriptive methods and the detail descriptive analysis of the research variable. This chapter concludes with the proposed methods of analyses, such as inferential statistics, reliability, factor, and MR analysis.

4.2 Research aim and objectives

This thesis aims to investigate the factors that influence customer attitudes towards the adoption, use, and success of IB services in SA in order to suggest improvements to the current situation. The pursuit of this aim can be broken down into the following series of objectives:

1. To establish how the SA IB market differs from IB markets in other countries.

2. To investigate the relations between different factors (e. g. demographics) and IB services, from the customers' point view, in developed and developing economies.

3. To capture the most relevant factors that relate, from customers point view, with the IB market in SA.

4. To understand the main differences between the different facets (adoption, use and success) of IB services

5. To understand the relations between the customers' attitudes and the a) adoption, b) use, and c) success of IB services in SA.

6. To establish well developed theoretically and tested empirically models of the aforementioned facets.

7. To recommend some innovative ideas, solutions and improvements, which can contribute to the enhancement and development of the adoption, use, and success of IB services in SA, based on the successful tested models.

To satisfy the objectives of this research, the IB literature was reviewed to investigate the effect of different factors on the adoption, usage, success of IB in SA (Chapter 1 and 3) and the Saudi Arabian banking system and IT infrastructure (Chapter 3). A field survey method (postal questionnaire) was selected as the data collection method to enhance the understanding about the different factors that affect the attitudes of customers in SA towards the adoption, use, and success of IB (Chapter 4). Moreover, various relevant IB theoretical models were presented and reviewed in order to establish the model of this research (Chapter 2) which was tested and adjusted, as discussed in chapters 5 and 6. These will be followed by the suggested improvements to the IB system in SA, in chapter 7.

4.3 Key research questions

As introduced in chapter one this PhD evolved around one main and another supplementary research question. Given the surveyed literature and the conceptual

framework developed in chapter two, these two key research questions can now be stated more fully in terms of the following operational key research questions that delimit the scope for this study:

1. To what extent do different factors relate with the customes' adoption of IB services? What is the relative importance of each factor?

2. To what extent do different factors relate with the customers' use of IB services? What is the relative importance of each factor?

3. What are the relations between different factors and the customers' success of using IB services? and which relations are stronger?

4. What is the relationship between the adoption, use and success of the IB services?

The operationalisation of the constructs involved in answering the above key research questions (e.g. awareness, resistance to change, satisfaction, high security, self-efficiency, awareness of IB services, income, education the availability of IsB services and the availability of the infrastructure) are presented in sections 2.4.2 and 4.13.2.1.

4.4 Research philosophy and methodology

According to Creswell (2003), there are three main approaches to research, namely, quantitative, qualitative, and mixed methods. The first two approaches have often been related to a positivistic and a phenomenological philosophy respectively. These two categories are sometimes described using different terms. The positivistic philosophy is sometimes referred to as traditional, quantitative, or empiricist; whereas the phenomenological approach is sometimes referred to as post-positivistic, subjective, or qualitative (Hussey and Hussey, 1997).

In the same vein, Amaratunga and Baldry (2002) argued that research may be categorised into two distinct types: qualitative and quantitative. The former

concentrates on words and observations to express reality and attempts to describe people in natural settings. In contrast, the quantitative philosophy grows out of a strong academic tradition that places considerable trust in numbers that represent opinions or concepts. With regards to that, Easterby-Smith et al. (2002) also pointed out that there are two contrasting views of how social science research should be conducted. The two traditions are positivism and social constructionism. The method of social constructionism research can be contrasted directly with the eight features of positivist methodology; they are summarised in Table 4.1.

	Positivism	Social constructionism
The observer	Must be independent	Is part of what is being observed
Human interests	Should be irrelevant	Are the main drivers of science
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research progress through	Hypotheses and deductions	Gathering rich data from which ideas are induced
Concepts	Need to be operationalised so that they can be measured	Should incorporate stakeholder perspectives
Unit of analysis	Should be reduced to simplest terms	May include the complexity of whole situations
Generalisation through	Statistical probability	Theoretical abstraction
Sampling requires	Large number selected randomly	Small number of cases chosen for specific reasons

Table 4.1: Contrasting implications of positivism and social constructionism.
Source: Easterby-Smith et al. (2002).

According to Amaratunga and Baldry (2002), logical positivism uses quantitative and experimental methods to test hypothetical-deductive generalisations. It has been argued that the positivistic approach seeks causes of social phenomena or objective knowledge (facts) that can be gained from experience or observation. In this context, Easterby-Smith et al. (1991) and Remenyi et al. (1998) argued that positivism searches for causal explanations and fundamental laws, and generally reduces the whole to the simplest possible elements in order to facilitate analysis.

As highlighted earlier in the key research questions, this research is concerned with investigating the extent to which customers in SA can use IB. Additionally, the

research model is aimed at investigating the extent to which some factors contribute to the use of IB. It seeks the causal relationships between different factors and the use of IB. Thus, the quantitative approach was adopted based on arguments which place an emphasis on using it to address the causal relationships of a given set of model variables. In this context, Eldabi et al. (2002) indicated that quantitative research typically has a logical and linear structure in which hypotheses take the form of expectations about likely causal links between the constituent concepts identified in the hypotheses. Thus the determinations of the causal links specified by the hypotheses will result in the acceptance or rejection of the theoretical propositions. Hence, quantitative research places emphasis on methodology, procedure and the statistical measure of validity. Amaratunga and Baldry (2002) indicated that quantitative methodologies have the following strengths:

- Comparison and replication are allowable.
- Independence of the observer from the subject being observed.
- Subject under analysis is measured through objective methods rather than being inferred subjectively through sensation, reflection, or intuition.
- Reliability and validity may be determined more objectively than with the use of qualitative techniques.
- Emphasises the need to formulate hypotheses for subsequent verifications and
- Helps to search for causal explanations and fundamental laws, and generally reduces the whole to the simplest possible elements in order to facilitate analysis.

According to Hussey and Hussey (1997, 73) the positivistic paradigm is the most commonly adopted philosophy in business research. Several empirical studies and investigations, in the field of marketing, have been conducted using quantitative research philosophy in their research designs to explore the expected relationships that might emerge from interaction among a given set of a research variables (e.g.

Sathye, 1999; Cheng et al., 2006). In the context of investigating the range of the usage of IB, quantitative research has tended to focus on addressing specific operational issues and usually concerned with the development and testing of rigorous causal relationships (Cheng et al., 2006). Generaly speaking, choosing the positivistic paradigm in this research refers to the following issues:

1. Generalisation. In surveys, a quantitative survey approach seeks to identify relationships that are common across regions, and hence provide a general statement, or theory about the phenomenon being researched (Bryman, 1993; Eldabi et al., 2002).

2. Causality. The quantitative research is concerned with establishing the causal relationship between concepts (Bryman, 1993; Eldabi et al., 2002).

3. Individualism. A quantitative research instrument focuses on the individual. The responses are then added together, even though the respondents often do not know each other (Bryman, 1993; Eldabi et al., 2002).

4. Savings in time and effort. Adopting a cross-sectional survey methodology leads to savings in time, effort, and the amount of resources required in comparison with longitudinal and case study methodologies (Creswell, 2003).

The positivist perspective is concerned with the empirical testability of theories, whether this requires theories to be "verified" or "falsified." This belief, in what is known as the hypothetic-deductive account of scientific explanation, has two consequences (Chua, 1986, p. 607):

- A search for universal laws or principles from which lower-level hypotheses may be deduced. Positivist researchers work in a deductive manner to discover unilateral, causal relationships, that are the basis of generalized knowledge; that is, that can predict patterns of behaviour across situations (Putnam, 1983, p. 41).

- A tight coupling among explanation, prediction, and control. If an event or action is only explained when it can be deduced from certain principles and premises, then knowing the principles and premises beforehand enables prediction and control of the event or action.

This research, in general, investigated the utilization of IB and its relationship with the customers' attitudes. This study implemented a sample survey as a control of this research investigation which is the primary data collection techniques, and inferential statistics (MR) is the data analysis method used to "discover" causal laws. This research examined the validity and reliability of identifying and measuring instruments, which is considered vital steps of this research, as researcher detachment from the research process, random assignment of subjects, and control over confounding influences. The study paid close attention to employing standard instrumentation with established records of validity and reliability. As participants were required to express their experiences in terms of the researcher's constructs through questionnaire items.

The positivist research aim to explain and predict external reality implies that people are not active makers of their physical and social reality. Positivistic research techniques encourage deterministic explanations of phenomena, in that these explanations emerge from interactions between the researcher and his subjects, where the researcher, by definition, dominates the relationship. In this research, as causal relations to be examined, the positivist researcher focuses on the validity and control of the research procedures, and hence adopts a predefined and circumscribed stance towards the phenomenon being investigated. This study reviewed the literature, developed the research model and hypothesis and utilized MR analysis to determine

the relationship between variables and to describe the strength and direction of the relationship between two variables (Pallant, 2001).

The researchs' results revealed that adoption, use and success of IB models were found predicting and explaining 62%, 39.4% and 30%, respectively (as presented in chapter 6). The three models have shown high, good and fair prediction powers (R^2=62%, 39.4% and 30%, respectively) compared with other IB models, as their results were found acceptable and satisfactory (e. g. Suh and Han, 2002 R^2=75%; Wang et al., 2003 R^2=62%; Pikkarainen et al., 2004 R^2=12.4%; Shih and Fang, 2004 R^2=66%; Lallmahmood's, 2007 R^2=67%; Hosein, 2009 R^2=32.2%). This means that the use of results explain a large part of the variation of the factors that relates with adoption and use of IB, whereas results explain a fair part of the variation of the factors that relates with the success of the IB. This can be acceptable, due to the fact that investigating factors which relate with the customers' attitudes toward the success of IB services is considered one of the pioneer studies that investigate the success of IB services. Falk and Miller (1992) argue that a minimum of 10% explained variance is acceptable for scientific advancement. The range of correlations in the published TAM stream is from 20-60%, and the acceptability of the explanatory power of any of these models was solely dependent on the judgment of the reviewers (Straub et al., 2004). Cohen (1988) also argues that since the majority of social science studies report relationships that correlate significantly at 0.50 or below, then a large effect is approximately 0.50, a moderate effect is 0.30, and a small effect is 0.10. However, the unexplained variations might be because of some other factors that mightbe needed to be included such as loyality factor or omission of some important factors that relates to the IB customers' adoption, use and success such as the security factor which has not been found significant in all the three models. Therefore, the explained variance

of the research models was found supporting the decision to follow the positivistic approach. The IB success factors are recommended for future studies to be investigated further and the research's model need to be extended to cover wide other factors which have not been captured in this study.

4.5 Research design

It was argued in the previous section that the adoption of a particular research philosophy will have implications for the development and implementation of the research design. Moreover, the extent of research rigour will, in turn, depend on the implemented research design. According to Sekaran (2003), there are some key research design choices. These are concerning the purpose of the study, the type of investigation, and its time horizon. According to Tashakkori and Teddlie (2003, 176-82), the purposes of the study can be classified as descriptive (who, where, when, what), exploratory (patterns, relationships), explanatory (model development, testing) and evaluative (cause/effect, results) to supports hypotheses testing. The essential difference between these types of studies lies in their objectives (Cooper and Schindler, 2001). This study seeks to describe IB services users in SA; explores the patterns and relationships between the adoption, use and success of IB services; explains the relations through a model and hypotheses; and assesses the relationships of several contingent variables with the adoption, use, and success of IB by testing a number of hypotheses.

This research was also necessarily exploratory as gaining access to banks in a complex environment of a developing country such as SA was a major research challenge (Al-Ashban and Burney, 2001; Sohail and Shaikh, 2007). Therefore, this research can be mainly classified as a descriptive study. A study's survey methods can

also be classified as longitudinal or cross-sectional. In longitudinal studies, data are gathered at more than one point in time whereas in cross-sectional studies, data are gathered once, perhaps over a period of days or weeks. Cross-sectional studies often employ the survey method (Easterby-Smith et al., 2002). This research was conducted at one point in time, so it is a cross-sectional or one-shot research.

4.6 Research Population

Sekaran (2003) defines the term "population" as the entire group of people, events, or things of interest that the researcher wishes to investigate. The targeted population of this research was all Saudis that could use IB services in SA. The researcher was aware that access issues pose constraints particularly when seeking information related to personnel, customers, investors and or financial data (Saunders et al., 2000), as the policy of banks does not allow them to give a list of names or addresses or account numbers. Consequently, it was decided, in this research, to rely on the Saudi Telephone Directory in order to organise the primary data collection. Several studies reported in the literature (Sathye, 1999; Cheng et al., 2006), has adopted similar approach. To that effect the SA CITC Annual Report (2007), the total number of fixed telephone lines approached 4 million at the end of 2007, 73% of which were residential lines (2.9 million), which represents the population of this research. After determining the sampling frame, it was necessary to choose the sample method and the sample size. A random sample method was used because the researcher had constructed a sampling frame, and because it is more representatives (Sekaran, 2003). However, a random sample is one of several kinds of probability sample and its results can be generalized to the population (Sekaran, 2003).

4.7 Sampling

After defining the population, it is necessary to identify an appropriate sample and a suitable sampling frame. Selecting a sample is a fundamental element of a positivistic study (Hussey and Hussey, 1997). The reasons for sampling are the lower cost, greater accuracy, and greater speed of data collection and the availability of population elements (Cooper and Schindler, 2001). A representative sample should be large enough to satisfy the needs of the study, should be chosen at random and should be unbiased (Hussey and Hussey, 1997). The sampling frame for any sample is a complete list of all the cases in the population from which the sample will be drawn (Saunders et al., 2000). Initially, it is necessary to determine the appropriate criteria to be used to select the sample of the study.

Therefore, a sample size of 1,000 respondents was selected from a total of 2.9 million names listed in the Saudi Residential Telephone Directory. The larger the sample, the more sure the researchers can be that their answers truly reflect the opinion of the population. This indicates that for a given confidence level1, the larger the sample size, the smaller the confidence interval2. When determining the sample size needed for a given level of accuracy, researchers must use the "worst-case percentage" (50%). So, with a confidence level of 95%, a confidence interval of 5% and a

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[1] *The confidence level tells you how sure you can be. It is expressed as a percentage and represents how often the true percentage of the population who would pick an answer lies within the confidence interval. The 95% confidence level means you can be 95% certain; the 99% confidence level means you can be 99% certain. Most researchers use the 95% confidence level (Maccor Research Solutions, 2011).*

[2] *The confidence interval (also called margin of error) is the plus-or-minus figure usually reported in newspaper or television opinion poll results. For example, if you use a confidence interval of 4 and 47% percent of your sample picks an answer you can be "sure" that if you had asked the question of the entire relevant population between 43% (47-4) and 51% (47+4) would have picked that answer (Maccor Research Solutions, 2011).*

population of 2.9 million, in the case of this research, the sample size had to be at least 384 (Saunders et al., 2000). The reason for selecting a large sample, in this study, was to obtain a sufficient response rate so to ensure a representative sample. This is consistent with Saunders et al. (2000) and Cooper and Schindler (2001), who stressed that, it is important to choose a large sample size to ensure necessary confidence with the data. Moreover, Alreck and Settle (1985) stated, "For population of 10,000 and more, most experienced researchers would probably consider a sample size between 200 and 1,000 respondents" (p. 45). The confidence interval (also called the margin of error) for the research sample is plus-or-minus ($\pm$) 3.1%, as calculated below, by using the calculator of confidence interval (Maccor Research Solutions, 2011). On the basis of this result, it could be argued that any observations made on the basis of this survey's usable responses can be generalised across the target population with relative safety.

Population	2,900,000
Confidence Level	95%
Chances of Error	50%
Sample Size	1000
Confidence Interval	**3.1%**

To ensure that the research's sample is random, Microsoft excel sheets was used, with the support of Al-Wahda Express the official publisher of the Saudi telephone directory, to generate 1,000 random numbers utilizing the random and sorting functions in the excel sheets, which then used to select the names from the Saudi Residential Telephone Directory. The random function generates and assigns random values (between 0 and 1) to all the records in the excel sheet. After that, the sort function was also applied for the whole records (sort by random numbers), sorting the assigned random values from the lowest to the highest, then the first 1000 telephone

numbers were selected. This method was able to ensure that the sample was unbiased. This approach is widely adopted by a number of different authors in the field of IB (Sathye, 1999; Cheng et al., 2006).

The random selection process has been conducted in two steps, because the 2.9 million residential landlines are distributed across the 13 areas (explained in chapter 1, section 1.2). The first random selection was conducted on all areas separately and generated 100,000 residential landlines, as an intermediate step for another random selection, from the targeted population (2.9 million landlines). The number of the selected residential landlines from each area was based on the residential landlines distribution percentage for each area. The second step of the random selection was conducted on the selected 100,000 resdential landlines to generate the 1,000 resedential landlines which represent the final sample.

As it will be further discussed in section 4.12 and presented in Table (4.3) the response rate of this study was 22.8% which compares favourably and is in line with the other postal surveys, as shown in Table (4.2), where it shows the response rates in different studies conducted using postal surveys, in different fields, countries, and some of them are being conducted in SA. Some of the presented response rates are slightly higher than other response rates in the same table; that is due to the fact that some of these studies were directed to the corporate sector where there are clear addresses for the list of those participating professional companies. Cheng et al. (2006) used this postal survey in their empirical study about the IB usage in Hong Kong and the response rate was 19%. Similarly, Sathye (1999) employed same approach in his empirical study of IB usage in Australia and the response rate was 59%. According to Saunders et al. (2000), an examination of recent business surveys

reveals response rates as low as 15-20% for postal surveys. Bourque and Fielder (1995) suggested that for postal questionnaires, a response rate no better than 20% could be expected. This is in contrast to those that are directed at the public.

Study	Country		Sample	Usable responses	Response rate %
Sun (2007)	China		668	133	19.90
Tsai and Cheng (2004)	China		833	188	22.57
Ahmad and Sulaiman (2004)	Malaysia		140	53	37.60
Brooksbank and Taylor (2002)	New Zealand		5,963	1,313	22.00
Tsai and Cheng (2002)	USA		398	105	26.38
Haniffa and Hudaib (2007)	SA		350	174	49.70
Al-Barrak (2004)	SA		500	145	29.00
Maghrabi (1999)	SA		250	153	61.20
Al-Qahtany (1999)	SA		411	99	24.00

Table 4.2: Examples of previous studies used postal survey, with different response rates and different countries.

The selection of respondents depends on the characteristics required by the research design (Oppenheim, 1992). To meet the research objectives, the responses should be taken from those people who are able to provide valid responses to the questions. People who had access to IB were selected as the target group for addressing the objectives due to the following justifications.

1. Measurements of the research variables were based on the literature of IB services. Thus, people who had access to IB services were the most qualified people to provide their responses to the questionnaire.

2. Most of the research variables placed an emphasis on people who were able to understand and provide valid responses to the questions.

4.8 Data Collection Methods

Data collection methods are an integral part of a research design. These methods have been widely used in social research (Oppenheim, 1992). The appropriate selection of data collection methods depends mainly on enhancing the value of the research. In particular, the selected methods should enable the researchers to achieve the

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objectives of the study. Data can be collected in a variety of ways, in different settings and from different sources (Sekaran, 2003). Qualitative methods of data collection include methods of interviews, focus groups, and observations. Quantitative methods include methods of telephone surveys, structured interviews, and questionnaires.

One method of data collection is to interview respondents to obtain information on the subject of interest. Interviews can be structured or unstructured, and can be conducted either face-to-face, by telephone or online. Each of these methods has advantages as well as disadvantages (Hussey and Hussey, 1997). According to Oppenheim (1992), the advantage of interviews is that they improve response rates and give a prepared explanation of the purpose of the study. They also provide the researcher with an opportunity to contact interviewees and motivate them to provide additional information and reliable answers (Cooper and Schindler, 2001). The disadvantages of interviews are that they are expensive and time consuming especially when 1,000 interviews are concerned. There is also the possibility of interviews bias. Therefore, the choice was self-administrated questionnaires; these have the advantage of obtaining data more efficiently in terms of time, energy, and costs (Sekaran, 2003). Moreover, a questionnaire survey is cheaper and less time-consuming than conducting interviews (Hussey and Hussey, 1997). Several researchers (e.g. Oppenheim, 1992; Easterby-Smith et al., 2002; Sekaran, 2003) stress that questionnaires are the most popular method for collecting data and can be self-administered, electronically distributed or mailed to respondents.

A postal questionnaire was therefore considered to be the most appropriate method of data collection as providing the large amount of cross-sectional data needed for this study. Further, an analysis of responses from a large number of respondents, which

are widely dispersed, would achieve the objectives of this research. Postal questionnaires are a commonly used method in gathering data in social sciences (Oppenheim, 1992). Postal questionnaire has been also used heavily in the IB studies such as Sathye (1999), Cheng et al. (2006) and Safeena et al. (2011). One advantage of postal questionnaires is that they are most useful especially when large numbers of respondents are to be reached in different geographical regions (Saunders et al., 2000). Also, respondents can take their time to respond at their convenience (Sekaran, 2003). Another main advantage of postal questionnaires is the low cost of data collection and processing (Cooper and Schindler, 2001). Moreover, postal questionnaires provide respondents with more confidence regarding their anonymity (Sekaran, 2003).

Postal questionnaires, however, suffer from low response rates (Oppenheim, 1992; Hussey and Hussey, 1997; Cooper and Schindler, 2001). Another disadvantage is that any doubts or misleading items cannot be clarified (Sekaran, 2003). In addition, the researcher cannot be sure that the targeted respondents have completed the questionnaire. Finally, there is no control over the order in which the questions are answered or any check on incomplete questions (Oppenheim, 1992).

However, using this method to collect the data of this research added a challenge to the researcher conducting this research in SA, due to the fact that the SA postal system is neither very efficient nor reliable. Although there has been an improvement in the postal system in the past ten years, street addresses are still not completely in place. As a result, people who live in cities rely on post office boxes for the delivery of their incoming mail, whereas those who live in rural areas depend on post office coordinators in their areas to distribute their incoming mail by hand within their

assigned areas. As a result, the entire process takes much longer in SA as promptness and punctuality are not valued as highly as they are in western environments (Yavas and Tuncalp, 1985).

The most significant obstacle to e-commerce in SA, from the perspective of public and private Saudi organizations, is the lack of individual house addresses to support the mail communication (Al-Solbi & Mayhew, 2005). Before 2005, individuals had no uniquely identifying home addresses and the post was not delivered to homes and offices (Saudi Post, 2008). Nowadays, individual house addresses may not represent a problem because Saudi Post approved postal delivery to homes and buildings in 2005 (Alfuraih, 2008). Today, every resident in the main cities in SA can contact Saudi Post and register his building for the free service provided by Saudi Post. However, while this service is still relatively new, SA is very late in providing individual addresses. Additional problems with adopting this service might be the citizens' lack of awareness of this service or the importance of mailboxes, their ignorance of the direct addresses for their houses with numbers and street names, or their mistrust of receiving their post in this way. Consequently, more efforts are needed to motivate the citizens to own house postboxes and solve the problems that they face. Thus, the above facts would have a negative effect on the response rate of this research. Finally, even if the potential respondents were intending to respond, they would require repeated reminders to motivate them to expedite their response.

4.9 Data coding and processing

This study applied a procedure for data coding and processing as suggested by literature (e.g. Newman 2003; Saunders et al., 2003; Pallant, 2006). Applying this procedure started before the data collection, and even before the pilot study. The code

of each data category was created and entered in a codebook (see Appendix E). This codebook consists of 52 items, which is matched with the questionnaire questions, to capture all the collected raw data.

Removing any possible typing errors that occurred during the coding and entering of data part of the cleaning data procedure is the next step of the data coding. As any errors at this stage could threaten the validity of measures and the study's results as advanced statistical parametric tests and in particular the employed MR analyses in this study that is sensitive to outliers (Newman 2003; Pallant, 2006). Therefore, all coding categories of data in this study were visually doubled-checked, and an exploratory data analysis was undertaken in SPSS involving frequencies and other descriptive statistics, undertaken to identify the missing data; discussed further in this chapter. It is also worth to highlight that the descriptive statistics for all constructs participating in the analyses undertaken in this thesis are provided in (see Appendix G). The missing data analyses was also important in singling out constructs as the missing values became necessary to be recoded in more aggregate categories. In the next section, dealing with the missing data is presented.

4.10 Dealing with Missing Data

Missing data is a common problem that researchers often face. Apart from non-response data (i.e. questionnaires never completed/or returned to the researcher), there are also item non-response missing data (in returned questionnaires). Item nonresponse data for individual questions could be missing in whole (i.e. complete lost item non-responses), or in part (incomplete item non-responses). Missing data are of concern as they could undermine the methodological assumptions of the statistical procedures involved in analysing survey data (Forza, 2002; Field, 2005). In particular,

missing data endanger the reliability and validity of accurate results in terms of reducing statistical power and generalization (De Leeuw et al., 2003; Croninger and Douglas, 2005). This problem is also associated with other statistical analyses besides MR (Field, 2005).

Missing data may also be due to a variety of reasons; e.g. from refusal of respondents to provide what they consider to private or confidential information for them or their organizations, due to unavailability or even non-existence of the requested information. Although one cannot know with any certainty the precise reasons for missing data, this research recognised one pattern of missing data (Missing completely at random (MCAR)) which means that the missing values of a variable are randomly distributed (not correlated with any other variable) across respondents. For MCAR data there is no bias in any statistical analysis (including regressions); they yield parameter estimates close to population values (Croninger and Douglas, 2005).

A number of ways of dealing with the problem of missing data have been identified in the literature. A deletion of the cases or variables that have missing data is the simplest way, but this may affect the sample size (Hair et al., 1998). Mean substitution is one of the approaches used for solving the problem of missing data (Hair et al., 1998). This approach replaces the missing values for a case or variable with the mean value based on all valid responses. The third method of dealing with missing values is proposed by Field (2005), who recommends that the researcher ignores these values by giving them a specific code. In this research, twenty seven cases were identified as missing data in different items, and the decision was made to replaces these missing values with the mean values based on the valid responses on each item.

4.11 Questionnaire Construction and Pre-Testing

A questionnaire should be designed according to clear criteria in order to achieve the objectives of the research. The choice of wording and the overall layout in building the questionnaire are key issues. In this research, the wording, design, layout and pre-testing were well chosen. Based on suggestions made by Oppenheim (1992), significant attention was given to the language of the questionnaire. A number of drafts were developed and evaluated in an iterative manner before the final version of questionnaire was produced. As a result, two versions of the questionnaire were generated and posted to the participants of this survey, one in English and the second in Arabic (see Appendix B).

4.11.1 Question Types and Formats

The questionnaire should translate the research objectives into specific questions; answers to such questions will provide the data for hypothesis testing. The key considerations involved in formulating questions are their content, structure, format and sequence. Therefore, questions should be chosen after substantial testing to achieve a reliable response from the chosen sample. This type of data collection method can be used for descriptive or explanatory research (Oppenheim, 1992).

A good questionnaire offers useful data about what the researcher is attempting to examine. A researcher can use two types of questions for constructing a questionnaire: the open-ended, and the fixed-response (i.e. closed-ended) types. Open-ended questions allow participants to craft their own responses in their own words while closed-ended questions offer a limited set of responses. According to Sekaran (1992), the appropriateness of using either closed-ended questions or open-ended questions depends on several considerations:

- The objective of the questionnaire: Closed-ended questions are appropriate when the study's objectives require the agreement or disagreement of participants with an explicit point of view. When the researcher seeks to learn how the respondents arrived at a particular point of view, an open-ended question is likely to be more suitable.

- The respondent's level of information about the topic in question.

- The extent to which the topic has been thought through by the respondent.

- The ease with which respondents can communicate the content of the answer or the extent to which respondents are motivated to communicate on the topic.

In this research, both types of question were used in building the questionnaire. Some open questions in the form of "others (please specify)" were used. Moreover, a few open questions were used to give respondents the opportunity to express their views in their own words regarding specific issues and to add additional insights or comments.

Closed-ended questions were used largely in the questionnaire survey. Sekaran (1992) argued that closed-ended questions are mostly preferable in large surveys. They are easy to ask and quick to answer. They reduce the variability of response, make fewer demands on interviewer's skills, are less costly to administer and are much easier to analyse as their analysis is straightforward. Two types of closed-ended questions were used in the questionnaire: category questions and scale questions. Category questions are designed so that each respondent's answer can fit only one category. Scale or rating questions were also used in this questionnaire. This type of question was used throughout the questionnaire to measure the research variables. Such scales generate ordinal data and vary in the number of categories in scales; three to five categories are

often used (David and Sutton, 2004). The most frequently used format is the Likert style point or numerical scale where statements are provided and respondents are asked to indicate how strongly they dis/agree (Oppenheim, 1992; Newman, 2003). In addition to that, different modifications on word response of Likert scales can be made, for example, good, fair, significant increase (Thomas et al., 2005, p. 207).

There is evidence that Likert scales with five and seven interval points or number of choices are helping to increase the reliability of the questionnaire (Nunnaly, 1978; Thomas et al., 2005, p. 207). However, the number of choices should be no more than nine; after this point the choices are not meaningful and confuse respondents (Newman, 2003, p. 197). For instance, Nunnaly (1978, p. 521) stated that "as the number of scale steps is increased from 2 up through 20, the increase in reliability is very rapid at first. It tends to level off at about 7, and after about 11 steps, there is little gain in reliability from increasing the number of steps". In this study, a five-point Likert scale was used throughout the questionnaire where the respondents were asked to indicate the degree of agreement or disagreement with each statement included in the questionnaire, and in another section of the questionnaire, customers were also asked to indicate if they consider other items obstical or not when using IB, by rating 5 items from "major obstacle" to "No obstacle".

The questionnaire of this study was initially developed in English and then translated in the Arabic language for use in SA. In order to enhance reliability and validity within the targeted population, the researcher ensured that every question and statement included in the questionnaire was translated effectively into both languages. This study has employed the back translation technique, as suggested by Newman

(2003), to promote lexicon or functional equivalence of the items (questions and statements) included in the questionnaire.

4.11.2 Questionnaire Pre-Testing and Pilot Work

Pre-testing and piloting a survey questionnaire is an important step in research and has practical benefits (Sekaran, 1992). It removes inconsistencies in the questionnaire and can resolve doubts about its content, structure, and design. The main idea is to make sure that the questionnaire is unambiguously understood by the respondents and that it gathers the full range of the sought data. The first stage in piloting the questionnaire involved handing the questionnaire to five colleagues undertaking PhDs in marketing within different universities in the UK. They provided many useful suggestions in terms of design, sequence, question content, question wording, clarity and the ability to understand its contents. Attention was given to their suggestions.

In the second stage of pre-testing, the questionnaire was distributed to five professors in different Universities in SA. All of them held a PhD in marketing from British or American universities. Each of them received two versions of the questionnaire, one in English and the second in Arabic. They were asked to check the translation from English into Arabic and to provide their feedback about the questionnaire in terms of design, wording, content, and measurement. Useful comments were received from them which resulted in amendments being made to the wording and scale of the questions. These suggestions were taken into consideration when generating a new draft, which was seen and checked again by three of the Saudi professors who had tested the questionnaire prior to the amendments being made. Furthermore, feedback from the researcher's supervisor was also taken into account. In the final stage of pre-testing, the questionnaire was delivered to 100 individuals selected randomly from the

sample. The respondents were asked to complete the questionnaire and provide any comments and suggestions about its contents and wording to decide if it was well written; 21 questionnaires were completed and returned to the researcher. This reflects a response rate of 21% of the total sample in the pilot study. After a review of these comments, some changes were considered in the final version of the questionnaire and, therefore, some questions were modified accordingly. The changes are as follow:

1. In question B4, the first category was less than 50,000 and the second category was 51,000-100000. This question was modified to be the first category as equal or less than 50,000 and the second category as 50,001-100000.

2. In questions B10, B11, B13, and B14, "Never" was one of the provided choices. Given that all participants should have used the internet and IB at least once, this choice was deleted and the other choices have been modified accordingly.

3. In questions B12 and B16, "I do not know" was one of the provided choices. Given that all participants should have used the internet and IB at least one time or more, this choice was deleted.

4. In question B16, "Check my share's portfolio account" was added to the choices, because it is one of the most popular IB activities in SA.

Consequently, the final questionnaire was made after taking into account the suggestions of the pre-testing stages conducted in the pilot work.

4.11.3 The Covering Letter

A well-designed covering letter is needed to accompany the questionnaire. Most marketing and business surveys include covering letters to explain the main purpose of the research. These letters can enhance the response rate (Sekaran, 1992). In this

research, the covering letter attached with the final copy of the questionnaire (see Appendix B) was well-designed to ensure that the respondents understood the objectives of the study. A covering letter should succeed in overcoming any resistance or prejudice the participant may have against the questionnaire. It should (1) identify the person(s) or organisation(s) conducting the survey, (2) clarify the purpose of research, (3) explain the significance of the survey and (4) assure the respondents that the data provided will be treated in strict confidence (Frankfort-Nachmias and Nachmias, 1996).

The letter to go with the questionnaire for this research was printed on a single page. The first paragraph of the letter explained the objective of the research. The second paragraph illustrated the significance of the research to respondents, banks and the researcher. The third paragraph confirmed to the respondents that all the information would be used only for research scientific purposes and would be treated as strictly confidential. In addition, the respondents were asked to pass the questionnaire to the appropriate person if they had been incorrectly identified. Also, respondents were asked to put the questionnaire in the enclosed envelope after filling in it. Moreover, the respondents were informed they could have a copy of the research results if they so wished. The last paragraph presented the researcher and his supervisor information.

This research recognises the necessity to protect the confidentiality and anonymity of participants, who were informed about the nature and purpose of this research in the cover letter of the questionnaire. In addition to that, and since this study intended to collect data from individuals (IB users in SA) this research was conducted in line with the Hull University Business School (HUBS) code of ethics. The primary data collection method was approved by HUBS Ethics committee prior to the

commencement of this study survey, the approval for conducting the survey was received subsequently (see Appendix G). Prior to that, the aaceptance of accessing the research data and conducting the field study has been received from the Al-Wahda Express the official publisher of the Saudi telephone directory (see Appendix K).

4.11.4 Content of the Questionnaire

Based on the feedback and suggestions received from the pilot study, the final draft of the questionnaire was designed. All variables, included in the research model, were addressed in the questionnaire together with variables relating to the descriptive objectives. Thus, the questionnaire covered all the research objectives. There were two main sections of the questionnaire; The first section is concerned with examining factors influencing the use of IB. It basically covers the first objective of this research. In this section, the variables that determine the adoption, usage and success of IB are considered, such as the satisfaction (Q: A1-A9), perceived usefulness (Q: A10-A15), perceived ease of use (Q: A16-A21), security (Q: A22-A26), awareness (Q: A27-A28), self-efficiency (Q: A29-A31), availability of the infrastructure (Q: A2B1-A2B2), resistance to change (Q: A2B3), cost (Q: A2B4), and the availability of IsB (Q: A2B5) to support the research objective in examining the extent aforementioned variables on the respondents adoption, use and success in the IB services.

The second section was designed to achieve two purposes. One was to examine the relationships of some socio-economic variables, including income, age and educational level, with the adoption, use and success of IB services. These three variables were considered in the research model under the relationship between socio-economic motives and IB services. Therefore, these questions will support the other objective of this study in identifying the demographical characteristics of the IB

adopters, users and successful ones. This section of the questionnaire includes sixteen questions to achieve the aforementioned purposes. The final page of the questionnaire deals with several aspects, such as information about the respondent's residential category, name, address, telephone number and e-mail address. It also informs the respondent that the questions have ended. However, it asks the respondent that if they would like to obtain a copy of the final findings of this research once completed, to write their address in the space provided.

4.12 Administrating the Questionnaire and Response Profile

The main survey was posted to 1000 participants in December 2009. Each participant was sent a covering letter, a copy of the two versions of the questionnaire (Arabic and English) and a prepaid envelope. The number of usable completed questionnaires after the first posting was 60, with 2 unusable. After about six weeks, a reminder letter was sent to the respondents which included information about the importance of the questionnaire (see Appendix C).

This resulted in 78 usable completed questionnaire and 4 were returned uncompleted with specific reasons for non-completion. To enhance the response rate, on 15 Feb 2010, a second reminder was sent out to respondents (see Appendix D) asking them to complete the questionnaire. As a result, another 93 responses were received including 90 usable questionnaires and 3 unusable questionnaires. Consequently, there were 228 usable responses representing a 22.8% response rate. The response profile of the survey is shown in Table 4.3 According to Saunders et al. (2000), examination of recent business surveys reveals response rates as low as 15-20 % for postal surveys.

Response profile	Main survey	1st follow-up (after 6 weeks)	2nd follow-up (after 10 weeks)	Total
Usable questionnaires	60	78	90	228
Unreachable	0	0	0	0
Unusable questionnaires	2	4	3	9
Incomplete questionnaires	0	0	0	0
Total	62	82	93	237
Total response rate				**23.7%**
Usable response rate				**22.8%**

Table 4.3: Survey response profile.

The following efforts were made to increase the response rate:

1. A covering letter accompanied the questionnaire which explained the research objectives and assured the respondent that their co-operation was the main contribution to the success of this study.

2. Encouragement was given to the respondents to answer the questionnaire.

3. The layout of the questionnaire was well designed.

4. The respondents were given the option to receive a copy of the research findings once the study had been completed.

4.13 Reliability and validity

Reliability and validity are the essential criteria for assessing the accuracy and precision of the quantitative aspects of this research. They are also essential criteria for measuring the research quality and especially the procedures used to measure the constructs of interest. Validity is concerned with the extent to which an instrument measures the right construct (i.e. the degree that reflects on real differences) among the respondents, whereas reliability is concerned with consistency and accuracy in the procedure used to measure constructs; whereas (Oppenheim, 1992; Saunders et al., 2003). In other words they are the research equivalents of observational (measurement) efficiency (reliability) and effectiveness (validity).

However, the errors measurement should be kept at the lowest possible level as these can influence data analysis and consequently the findings; which in turn could lead to incorrect inferences and misleading conclusions. Due to the fact that perfect reliability (Oppenheim, 1992) and validity (Kerlinger, 1992) are not possible to be achieved in empirical research, and measurement errors are almost inevitable, the extent to which these errors affect the findings is a function of what particular efforts and what checks or remedies have been made by the researcher to minimize the potential bias.

4.13.1 Reliability

As mentioned earlier, the reliability of a measure indicates the extent to which it is without bias (error free) and, hence, ensures consistent measurement across time and across the various items in the instrument (Punch, 2005). Reliability of a measure is an indication of the consistency of the instrument. According to Churchill (1979, p. 68) the main statistical indicator of the internal consistency method is the Cronbach's coefficient alpha. Therefore, Cronbach's alpha measurement of internal consistency was adopted, in this study, to assess the overall reliability of the measurement scale, where alpha gives an estimate of the proportion of the total variance that is not due to error (see Appendix H); this represents the reliability of the scale (Oppenheim, 1992).

The recommended minimum acceptable level of reliability "alpha" is 0.60 using the Hair et al. (1998) criterion, and greater than .50 using the Nunnally (1978) criterion. The results of Cronbach's alpha have passed the minimum level requirements, as reported in Table 4.4. The reliability of the developed scale comprising the provision of 10 particular initiatives is summarised in Table 4.4. The reported final CRA = 0.80 is acceptable, reliable, and above the minimum or permissible CRA values.

SN	Scale	No of items	Cronbach's Alpha
1	Satisfactions	9	0.780
2	Perceived Usefulness	6	0.810
3	Perceived Ease of Use	6	0.755
4	Security	5	0.840
5	Awareness	2	0.790
6	Self-Efficiency	3	0.870
7	Availability of Infrastructure	2	0.780
8	Resistance to change	1	0.796
9	High Cost	1	0.725
10	Availability of IsB	1	0.852
	Total	36	0.800

Table 4.4: Cronbach's alpha values for the research independent variables.

The reliability assessments relating to non-response bias has been also conducted in this study, as the mail survey has been criticized for non-response bias (Hendricks, 1949; Daniel, 1975). If persons who respond differ substantially from those who do not, the results do not directly allow one to say how the entire sample would have responded certainly an important step before the sample is generalized to the population (Armstrong and Overton, 1977). Non-response bias is another challenge when conducting a postal survey. In testing the bias that may be associated with non-responses, a non-response bias survey was conducted. To ensure that sample bias and nonresponse bias were not present, appropriate comparisons were made between early and late respondents (Armstrong and Overton, 1977). Early and late respondents were compared on demographical variables, using traditional t-tests, as shown in Table 4.8, following Armstrong and Overton's (1977) recommendations. Unpaired t-tests were used to compare the group means to each other. Table (4.5) indicate that the differences between the means were not statistically significant at the 0.05 level, indicating that there were no differences between the group means of the demographical variables of early and late respondents. On the basis of the above, it

should be safe to conclude that non-response bias should not be considered as a serious threat in this study and its results.

Group	Group		P.value
	Group-1	Group-3	
N	60	90	
Age	3.4517	3.4398	.665
Income	3.2467	3.2599	.979
Education level	3.1867	2.9333	.078
Occupation	2.2000	2.3556	.488

Table 4.5: T-Test two mean comparison between early and late respondents.

4.13.2 Validity

Validity can be divided into external validity and internal validity (Creswell, 2003). External validity is the researcher's ability to draw correct inferences from the sample regarding other persons, other settings and past or future situations (Creswell, 2003), i.e. the data's ability to be generalised to other persons, settings and times. Adopting a representative sample is a basic consideration for achieving external validity. It is difficult to generalise the findings unless the drawn sample is representative of the population which has been concluded earlier, in section 4.7, that survey's usable responses can be generalised across the target population. In addition to that, the response rate was 23.7%, which is a good indication that the sample was representative of the population. As mentioned earlier; mail questionnaire do not get high response rates. Denscombe (1998) indicated that it was not uncommon to get a response rate as low as 15% for postal surveys and Alreck and Settle (1985) confirmed that ''[mail] surveys with response rates over 30 percent are rare. Response rates are often only 5 or 10 percent'' (p. 45).

Internal validity is the researcher's ability to draw sound inferences from the data in an experiment (Creswell, 2003). Internal validity comprises two main aspects; content

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and construct validity. Content validity ensures that the measurement scale includes an adequate and representative set of items that represent the concept (Punch, 2005). Content validity can be determined by a careful definition of the research topic and the items included in the measurement scale (Punch, 2005). The methods used in assessment are judgemental or panel evaluations. To ensure content validity, an extensive literature review was undertaken to define and clarify the scales and measures used in this research. As a result, this study has adopted several steps to ensure and establish content (and face) validity and consequently construct validity. These steps include an extensive and comprehensive review of the literature which helped in developing the conceptual model and research key questions.

As mentioned earlier, most of the items and scales used in this research were adopted from previous empirical studies, as explained in sction 4.13.2.2, which placed an emphasis on meeting the requirements of validity and reliability, by either using previous studies with established validity and reliability of their instruments or pre-testing and pilot work has been conducted for their researches measurements. In addition to that, the questionnaire items were scrutinised and pre-tested by several doctoral students and a panel of academic experts to judge the content validity of the questionnaire after conducting a comprehensive presentation sessions about the researches objectives, hypothesis, conceptual model, variables and questionnaire. In addition to that, the questionnaire was initialy developed in English, it was translated to Arabic and then translated back to English to enhance the content validity of the questionnaire.

Construct validity testifies how well the results obtained from the use of the measure fit the theories around which the test is designed (Punch, 2005). The researcher used

the Pearson correlation coefficients between the items and the total of the scales used in the study, in order to identify problem that should be excluded from the scale. As introduced in appendix (H) correlation analysis was undertaken to assess the validity of the construct. The Pearson correlation results revealed statistically significant at level 0.01, and indicated a high degree of internal correlation between all items on the scale. Moreover, the discriminant validity has been also conducted to assess how each construct discriminate from other constructs (Chin, 1998), the result was satisfactory as illustrated in the next section (4.13.2.1). Thus, the internal validity of the constructs and scales, used in this study, has been confirmed.

4.13.2.1 Constructs Discriminant Validity

Discriminant validity is the extent to which latent variable A discriminates from other latent variables. Discriminant validity means that a latent variable is able to account for more variance in the observed variables associated with it than a) measurement error or similar external, unmeasured influences; or b) other constructs within the conceptual framework. If this is not the case, then the validity of the individual indicators and of the construct is questionable (Fornell and Larcker, 1981). The following discriminant validity test methods are presented and discussed in the next paragraphs.

- Paired Constructs Test
- MultiTrait-Multimethod Matrix (MTMM)
- Average Variance Extracted (AVE) versus Shared Variance Test

Anderson and Gerbing (1988) suggest that the parameter estimate for two factors be constrained to 1.0 (constrained model) and compared to a model where this parameter is freely estimated (unconstrained model). This test is then run for every possible

pairing of constructs in a study. If the unconstrained model, with the drop of one degree of freedom, returns a chi-square value that is at least 3.84 lower than the constrained model, then a two factor solution provides a better fit to the data, and discriminant validity between the two factors is supported. The MTMM is another method uses more than one measure of constructs (i.e., multitrait) and more than one method to measure them (i.e., multimethod) in order to assess both convergent and discriminant validity (Bollen, 1989). By collecting data on constructs using at least two separate traits and methods, it is easier to identify discriminant validity problems. The major drawbacks of this method for researchers are that it is cumbersome, requires more data collection, and suffer from interpretation issues (Bollen, 1989).

Fornell and Larcker (1981) also present a method for assessing the discriminant validity of two or more factors. Here, a researcher compares the AVE of each construct with the shared variance between constructs. If the AVE for each construct is greater than its shared variance with any other construct, discriminant validity is supported. Bove et al. (2009) noted that "discriminant validity is assessed by comparing the shared variance (squared correlation) between each pair of constructs against the average of the AVEs for these constructs."

In this research Fornell and Larcker (1981) method was utilized, and all constructs illustrated satisfactory discriminate validity, as the AVE from the constructs should be greater than the variance shared (squared correlation) between a particular construct and other constructs in the model (Chin, 1998). Table (4.6) illustrates the discriminant validity of constructs, with squared correlation among constructs (above diagonal) and the AVE (on the diagonal). This indicates that all AVE for each construct are

greater than its shared variance with any other construct, therefore discriminant validity is supported in this research.

Discriminant Validity of Constructs

Constructs	1	2	3	4	5	6	7	8	9	10
1. Satisfactions	**.764**	.361	.355	.176	.321	.147	.068	.106	.073	.070
2. Perceived Usefulness	.601	**.585**	.381	.194	.297	.227	.032	.094	.066	.061
3. Perceived Ease	.596	.617	**.734**	.206	.353	.288	.031	.099	.048	.063
4. Security	.420	.441	.454	**.649**	.198	.186	.026	.099	.067	.064
5. Awareness	.567	.545	.594	.445	**.552**	.211	.040	.122	.059	.078
6. Self-Efficiency	.383	.476	.537	.431	.459	**.549**	.073	.159	.100	.064
7. Availability of Infrast	.260	.179	.177	.161	.200	.271	**.819**	.125	.111	.148
8. Resistance to Change	.325	.307	.302	.314	.349	.399	.354	**.621**	.176	.108
9. Cost	.271	.256	.219	.258	.243	.316	.333	.420	**.712**	.200
10. Availability of IsB	.265	.247	.251	.253	.280	.253	.385	.328	.447	**.632**

Table 4.6: Constructs Discriminant Validity
Note 1: On diagonal elements (inbold) are the Average Variances Extracted (AVE). The Off diagonal elements are the correlations among constructs and squared correlations are above the diagonal. For discriminant validity, diagonal elements should be larger than the above the diagonal elements.

4.13.2.2 Construct Operationalisation and Measurement

As discussed in Chapter 2, research hypothesis development, and part of developing the questionnaire and the respective scales, measurements, and operationalisation, this research utilised the following previous studies.

1. Satisfaction construct operationalisation has been adopted from Polatoglu and Ekin (2001), as they used a five point Likert scale. In this study, respondents were asked to rate their satisfaction on nine items (A1-A9) on a 5 Likert scale ranging from (with 1 = strongly disagree, 2 = disagree, 3=neutral, 4=agree, and 5 = strongly agree).

2. Perceived usefulness, perceived ease of use, security, and awareness of the IB services constructs operationalisations have been adopted from Pikkarainen et al. (2004), as they used a five point Likert scale. In this study, respondents were asked to rate these constructs on 19 items (A10-A28) on a 5 Likert scale ranging from (with 1 = strongly disagree, 2 = disagree, 3=neutral, 4=agree, and 5 = strongly agree).

3. Self-efficiency construct operationalisation has been adopted from Wang et al. (2003), as they used 7 Likert scale. In this study, a 5 Likert scale has been utilized from "strongly disagree" to "strongly agree". The adapted scale were modified to suite the IB context.

4. Availability of infrastructure, resistance to change, and cost constructs operationalisations have been adopted from Sathye (1999). A 5 Likert scale rating 5 items from "major obstacle" to "No obstacle" has been adopted in this study.

5. Demographic constructs operationalisations have been adopted from Almogbil (2005).

The items selected for the above constructs were mainly adapted from prior studies to ensure reliability and content validity. The previous studies had established validity and reliability of their instruments, and some of the adapted scales were modified, as explained above, to fit the IB context, using a five-point Likert scale for each item. Straub et al. (2004) argued that if the adapted measures need to be modified, then it is important to apply appropriate reliability and validity measures before undertaking final data collection. In the next sections, a detailed explanation of the reliability and validity measures which have been undertaken in this research were presented.

4.13.2.3 Common Method Variance (CMV)[1]

Several studies report that CMV is a potential problem in behavioural research (e.g. Nunnally, 1978; Podsakoff et al., 2003). CMV is a problem because they are one of the main sources of measurement error. Measurement error threatens the validity of

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[1] *Method variance refers to variance that is attributable to the measurement method rather than to the construct of interest. The term method refers to the form of measurement at different levels of abstraction, such as the content of specific items, scale type, response format, and the general context (Fiske, 1982, pp. 81–84). At a more abstract level, method effects might be interpreted in terms of response biases such as halo effects, social desirability, acquiescence, leniency effects, or yea- and nay-saying. (Fiske, 1982, p. 426)*

the conclusions about the relationships between measures and is widely recognized to have both a random and a systematic component (Nunnally, 1978; Bagozzi & Yi, 1991). There are several causes of measurement error that have been discussed in the literature. Out of these causes, error due to non-response bias (discussed earlier), a badly designed questionnaire, respondent bias and processing error are found to be most common. The remaining causes of CMV and how they are addressed in the current survey are discussed in the next subsections.

I. Potential Sources of CMV

Because CMV can have potentially serious effects on research findings, it is important to understand their sources and when they are especially likely to be a problem. Therefore, some of the most likely causes of method bias and the research settings in which they are likely to pose particular problems will be identified in this section. Common method biases arise from having a common source, a common measurement context, a common item context, or from the characteristics of the items themselves. Some methods effects result from the fact that the respondent providing the measure of the predictor and criterion variable is the same person. This type of self-report bias may be said to result from any artifactual covariance between the predictor and criterion variable produced by the fact that the respondent providing the measure of these variables is the same. There is a substantial amount of theory (Osgood & Tannenbaum, 1955; Heider, 1958) and research (McGuire, 1966) suggesting that people try to maintain consistency between their cognitions and attitudes. Thus, it is likely to be particularly problematic in those situations in which respondents are asked to provide retrospective accounts of their attitudes, perceptions, and/or behaviors.

Item characteristics might be also a source of CMV. It is also possible for the manner in which items are presented to respondents to produce artifactual covariance in the observed relationships. Cronbach (1946, 1950) was probably one of the first to report the possibility that, in addition to its content, an item's form may also influence the scores obtained on a measure. Some researchers are encouraged to develop items that are as clear, concise, and specific as possible to measure the constructs they are interested in (Spector, 1992; Peterson, 2000), but it is not uncommon for some items to be fairly complex or ambiguous. Thus, the level of item ambiguity and complexity may also influence the relationships obtained between the variables of interest in a study and they might be a source of method bias. Another potential source of common method bias is scale format and anchors. It is not uncommon for researchers to measure different constructs with similar scale formats using similar scale anchors or values. Also, some researchers have attempted to reduce the potential effects of response pattern biases by incorporating negatively worded or reverse-coded items on their questionnaires (Idaszak & Drasgow, 1987; Hinkin, 1995). Thus, negatively worded items may be a source of method bias.

CMV may result from the context in which the items on a questionnaire are placed. Wainer and Keily (1987) have suggested that item context effects "refer to any influence or interpretation that a subject might ascribe to an item solely because of its relation to the other items making up an instrument" (p. 187). Salancik (1984) noted that asking questions about particular features of the work environment may make other work aspects more salient to respondents than these work aspects would have been if the questions had not been asked in the first place. Thus, it is possible for such effects to produce artifactual covariation among variables under some conditions.

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Length of the scale is another potential source of method bias as noted in Harrison et al. (1996) study that scales which contain fewer items increase respondents' accessibility to answers to previous scales, thereby increasing the likelihood that these previous responses influence answers to current scales. Furthermore, Kline et al. (2000) recommended not intermixing items from different constructs on the same questionnaire; in order to reduce CMV. This would appear to suggest that intermixing items on a questionnaire would produce artifactual covariation among the constructs.

II. Remedies and Mitigations to Minimize the CMV

The CMV can be controlled through procedural remedies and one of them is to identify what the measures of the predictor and criterion variables have in common and eliminate or minimize it through the design of the study. In this research, attention has been paid to the wording of questions during questionnaire development and after the pre-testing phase as explained in the earlier sections. Additionally, Porter (2004) claimed that survey response rate increases and Reio (2010) claimed that CMV minimises when the draft of surveys request respondents for assistance or if they need assistance. For example by including the phrase "it would really help us out", a study reported an 18% increase in survey response rate (Porter, 2004). Consequently, in this study the statement: "If you face any difficulty or have any questions please contact me on the address below." was included in the covering letter of the survey (see Appendix B). Moreover, and in order to minimize the CMV in this research; some of the variables measures have been obtained from different sources. The advantage of this procedure is that it makes it impossible for the mind-set of the source to bias the observed relationship between the predictor and criterion variable.

Another way of minimizing the CMV is to separate the measurement of the predictor and criterion variables, which can be accomplished in several ways. Create a temporal

separation by introducing a time lag between the measurement of the predictor and criterion variables. Another way is to create a psychological separation by using a cover story to make it appear that the measurement of the predictor variable is not connected with or related to the measurement of the criterion variable. Another more technique is to proximally or methodologically separate the measures by having respondents complete the measurement of the predictor variable under conditions or circumstances that are different from the ones under which they complete the measurement of the criterion variable.

There are several additional procedures that can be used to reduce method biases, especially at the response editing or reporting stage. Allow the respondents' answers to be anonymous, assure to the respondents that there are no right or wrong answers and they should answer questions as honestly as possible. In this research, more attention was placed on protecting respondents' privacy, answers confidentiality, integrity and interest while designing the instruments as highlighted in the covering letter of the survey (see Appendix B). These procedures should reduce people's evaluation apprehension and make them less likely to edit their responses to be more socially desirable, lenient, acquiescent, and consistent with how they think the researcher wants them to respond. Obviously, the primary disadvantage of response anonymity is that it cannot easily be used in conjunction with the two previously described procedural remedies. That is, if the researcher separates the source or the measurement context of the predictor and criterion variables, he or she must have some method of linking the data together. This compromises anonymity, unless a linking variable that is not related to the respondent's identity is used.

As suggested by Reio (2010), this study also placed more emphasis on editing techniques and quality assurance practices at data grooming (preliminary checking

before entering), data capture, editing and at estimation stages in order to ensure that there was no data loss, no duplication and no inaccurate weights in the estimation procedure. Several processes such as checks for duplicate responses, logic edits and range edits (valid range were entered) were carried out to minimise the error.

Although, the above remedies have been considered in this research, to control the presence of CMV, it is accepted that this thesis contains a number of measures, which might lead to CMV; it is therefore considered as alimitation in this study (see Ch. 7). Harman's single-factor test was also performed, in section 4.16.3, and result indicates the absence of CMV.

4.13.2.4 Reflective and Formative measures

In the field of marketing, Churchill (1979), Bagozzi (1980), Peter (1981), and Anderson and Gerbing (1982), paid attention to construct validity and associated measurement issues. Peter (1981, p. 133), expressed and noted that "a basic goal of social science is to provide theoretical explanations of behavior. Therefore, this goal, in marketing research, includes attempts to explain the behavior of customers, sellers, and others participants in the related activities. Because construct validity pertains to the degree of correspondence between constructs and their measures, construct validity is a necessary condition for theory development and testing. As a result, it is not clear that marketing researchers have provided little explicit attention to construct validation". Therefore, the methodological approaches of marketing studies have been improved, as the existing measure development guidelines (e.g. Devellis, 1991; Spector, 1992) focus on scale development, whereby items (e. g. observed variables) composing a scale are perceived as reflective (effect) indicators of a causal construct (i.e. latent variable). This view reflects the conventional understanding on

measurement (see Bollen and Lennox, 1991), is largely based on classical test theory and, in particular, the domain sampling model (Nunnally and Bernstein, 1994).

Another alternative measurement perspective is the use of formative (cause, causal) indicators as it involves the creation of an index rather than a scale (Bollen and Lennox, 1991). As a result, formative indicators "are observed variables that are assumed to cause a latent variable. For effect indicators the latent variable causes the observed variables. Most studies in the social sciences assume that indicators are effect indicators, as cause indicators are neglected despite their appropriateness in many instances" (Bollen, 1989, p. 65). This is the case in marketing research, as all measures available are based-implicitly or explicitly- on reflective indicators (Bearden et al., 1993; Bruner and Hensel (1992, 1996)). The following table (4.7) shows and distinguishes between the nature of reflective and formative constructs.

	Reflective	Formative	References
1	Effect indicator (Effect indicators are the more typical type of indicators that depend on the latent variable)	Causal indicator (Cause indicators are ones in which the indicator affects the latent variable)	Bollen (2007), Howell et al. (2007)
2	Indicators are manifestations of the construct	Indicators are defining characteristics of the construct	Jarvis et al. (2003)
3	Instructions forward oriented (judgment based on hypothetical actions)	Instructions backward oriented (judgment based on actual actions)	Wilcox et al. (2008)
4	Latent construct exists independent of the measures used	Latent constructs is a combination of its indicators	Borsboom et al. (2003, 2004), Coltman et al. (2008)
5	A process of deductive reasoning	A process of inductive reasoning	Baumann et al. (2010)

Table 4.7: Natures of reflective and formative constructs.
 Source: Baumann et al. (2010).

In generally and as highlighted by Baumann et al. (2010); the reflective measurement has been applied in causal models, as the case of this researchs' models, as the observed variables are chosen and measured as they are assumed to be reflective of

the prior theoretical latent construct (a process of deductive reasoning). However, formative measurements, in which the meaning of latent constructs is incidental from the configuration of the observed variables (a process of inductive reasoning). Additionally Bollen and Lennox (1991) distinguished between the two types of measurement models that assume a direction of causality from the measures to the latent construct. One is a principal component model, in which the construct is a perfect linear combination of its measures, and the other called a composite latent construct model, which posited that the construct is a linear combination of its measures, plus error. Bollen and Lennox (1991) draw the attention to the fact that the used methods for assessing the reliability and validity of a construct are not appropriate where the direction of causality is posited to flow from the measures to the constructs. This was investigated by Diamantopoulos and Winklhofer (2001), who recommended improving the procedures for developing measures and evaluating these types of constructs.

Considering all these studies were referring to the fact that some potentially serious consequences of measurement model misspecification exist, and therefore researchers need to evaluate cautiously the direction of causality between constructs and their measures. However, it is not recognized how often this type of measurement model misspecification occurs in the marketing research or about the specific criteria that should be used to differentiate between formative and reflective indicator constructs. Although Diamantopoulos and Winklhofer (2001) referred to the fact that they do not attempt to develop a comprehensive set of criteria that can be used to decide how a construct should be modeled, nor to determine how prevalent measurement model misspecification is in the field of marketing. Instead, their objective was to establish

guidelines for constructing indices based on formative indicators in much the same way that Churchill (1979) did for reflective indicator constructs.

In this research, all the measures are reflective apart from the satisfaction's construct measures which are formative. As the IB's usage and customer satisfaction are closely interrelated. Use must precede the user satisfaction in a process sense, but a positive experience with use will lead to greater user satisfaction in a causal sense. Similarly, increased user satisfaction will lead to increased IB adoption and use. The IB's customers use the system to make buying or selling decisions and to execute online banking transactions. These IB decisions and transactions will then affect individual users. The IB's customers' satisfaction of using and experience the IB's services are extremely important, but they cannot be analysed and understood without the customers' satisfaction measurements. For example, within the IB environment, the relationships of the IB with customer purchases cannot be fully understood without an evaluation of the usability of the IB's services and the relevance regarding the using decisions of the information that is provided to the IB's customers, such as save the customer's time, service cost, reliability, and availability from anywhere and anytime. As customers once start adopting IB services, they need to be satisfied and then encouraged by banks to re-use the IB service and then they need to be convinced of the benefits of banking through the internet to enjoy the success of their usage of this service.

The 1st part of the questionnaire consisted of questions measuring the satisfaction level of the customers regarding the IB services, which have been adopted from Polatoglu and Ekin (2001). Respondents were asked to rate their satisfaction on 9 statements on a Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly

Agree, including two criterion statements measuring overall satisfaction. This research treated all variables as reflective constructs considering the following:

- The minimum potential impact of the formative measures as only one construct (viz. satisfaction), out of ten used by the models tested in this research is quasi-formative. In particular only two measures out of the nine-item scale used for satisfaction were formative.
- The researche constructs have been adopted from reliable and validated studies (Sathye, 1999; Polatoglu and Ekin, 2001; Wang et al., 2003; Pikkarainen et al., 2004) that used very similar constructs and measures.
- All the reviewed formative literature were found impacting the complex models such as the multiphase model more than the single phase models such as the provided models in this study (Diamantopoulos et al., 2008; Baumann et al., 2011) .

Therefore, although this is accepted as a limitation of this study and thus discussed as an area of further research (in Ch. 7), it could be argued that the risk this poses to reliability and validity is not higher than the respective studies reported in the literature.

4.14 Validity of statistical methods of data analysis

In this section, the main issues concerning the validity of the statistical analysis undertaken in this study and the procedures used to address them are discussed. As metioned earlier in this chapter, the decision was made to adopt the positivistic paradigm based on the nature of this research to meet the objectives of the research and test its model in the light of the positivistic paradigm, a number of statistical methods were utilised in analysing the data. Given below are the justifications and rationale for using the statistical techniques in analysing the data of this study.

4.14.1 Descriptive statistics: frequencies and means

Descriptive statistics can be defined as those methods involving the collection, presentation, and characterisation of a set of data in order to describe properly the various features of that set of data (Berenson and Levine, 1999). Descriptive statistics using frequencies and means were utilised to achieve the explorative objectives of this research, to determine the sample characteristic, and to develop the main feeling about the data distribution, but more specifically, to analyse, the outputs of the descriptive statistics analysis for each variable included in the research model. The descending means were used to rank a set of the research variables according to the relative importance of each variable in the hypothesised relationship in a given sub model.

Descriptive statistics provided this researcher with indications about the distributions of the population and the sample. They also helped inform the selection of suitable inferential statistical techniques that were used in the testing of the model and the hypotheses. Similar descriptive statistics have been used extensively by previous studies in this area of research (see, for example Cheng et al., 2006; Gonzalez & Chiagouris, 2006; Kassim and Ahmed, 2006 among others).

4.14.2 Descriptive analysis of research variables

This section describes the variables of study. Table 4.8 presents the descriptive statistics for the research independent variables relating to the research hypotheses. Table 4.8 includes the mean and standard deviation, as the mean is a hypothetical value, and the standard deviation is a measure of how well the mean represents the data (Field, 2005). Small standard deviations indicate that the data points are close to the mean; large standard deviations indicate that the data points are distant from the

mean (Field, 2005). In this context, Table 4.8 shows that all the standard deviations indicate that the means are an accurate representation of the data.

Research variables	(Q #)	Mean	Std. Dev	Min	Max	Skewness	Kurtosis
Resistance to change	A2B3	2.951	1.117	1.00	5.00	-.715	-.703
Awareness	A27 - A28	3.741	0.857	1.00	5.00	-.915	.771
Self-efficiency	A29 - A31	3.559	.8152	1.00	5.00	-.646	1.297
Avail. of infrastructure	A2B1-A2B2	3.611	.9396	1.00	5.00	-.985	.762
Security	A22 to A26	2.890	1.0241	1.00	5.00	-.612	-.671
Cost	A2B4	3.771	.9007	1.00	5.00	-.212	1.112
Satisfaction (Convenience)	A7, A5, A4	3.387	.7412	1.00	5.00	.548	.359
Satisfaction (Time saving)	A6, A3, A1	3.529	.9852	1.00	5.00	.652	-.487
Satisfaction (Fulfilment)	A9, A2, A8	3.241	.6584	1.00	5.00	.741	1.846
Perc. ease of use (Easiness)	A16, A17, A20, A21	3.334	1.021	1.00	5.00	.398	.745
Perc. ease of use (Interaction)	A18 - A19	3.568	.9882	1.00	5.00	-.652	1.026
Perceived usefulness	A10 –A15	3.124	.7454	1.00	5.00	-.487	-.548
Availability of IsB	A2B5	3.689	.6325	1.00	5.00	-.681	-.369
Age	B3	3.441	.8450	1.00	5.00	.125	.547
Education	B5	3.013	.3698	1.00	5.00	-.658	-954
Income	B4	3.259	.5472	1.00	5.00	.412	-1.259

Table 4.8: Descriptive statistics for research variables (N = 228).

Table 4.8 also includes the minimum and maximum values, and the skewness[1] and kurtosis[2] values to check for the normality[3] of each variable. According to Hair et al. (1998), skewness values within the range of −1 to +1 and kurtosis values within the

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[1] *Skewness is a measure of the symmetry of a distribution. A positively skewed distribution has relatively few large values and tails off to the right, and a negatively skewed distribution has relatively few small values and tails off to the left (Hair et al., 1998).*

[2] *Kurtosis is a measure of the peakedness or flatness of a distribution when compared with a normal distribution. A positive value indicates a relatively peaked distribution, and a negative value indicates a relatively flat distribution (Hair et al., 1998).*

[3] *Normality refers to the degree to which the distribution of the sample data corresponds to a normal distribution, where normal distribution is a theoretical probability distribution in which the horizontal axis represents possible values of a variable and the vertical axis represents the probability of those values occurring. The scores on the variable are clustered around the mean in a symmetrical, unimodal pattern known as the bell-shaped or normal curve (Hair et al., 1998).*

range of –3 to +3 indicate an acceptable range for normality whereas values falling outside the range of skewness and kurtosis indicate a substantial departure from a normal distribution. Thus, Table 4.8 shows that skewness and kurtosis values for all variables fall within the acceptable range. The remaining research items charactarastics are attached in Appendix F.

4.14.3 Common Method Bias statistical Test Methods

Researchers have developed a number of statistical techniques to test and control for the effect of CMV in mono-method research designs. This section presents some techniques that have been frequently employed in marketing research, such as but not limited to the Harman single-factor test and the marker variable technique (e. g. Pavlou et al., 2007; Jarvenpaa and Majchrzak, 2008). Therefore, this section presents some of the CMV tests and also concludes with the used test method which has been utilized in this research to examine the presence of the CMV.

1. The extent of common method bias has been utilized in different studies, as Harman's one factor test test the presence of the CMV by entering the entire principal constructs into a principal components factor analysis (Podsakoff and Organ, 1986). Evidence for common method bias exists when a general construct account for the covariance among all constructs.

2. The partial highest factor from the principal component factor analysis is another method. According to Podsakoff and Organ (1986, p. 536), the factor is assumed to contain the best approximation of the CMV if it is a general factor on which all variables load. If it does not produce a significant change in variance explained in any of the dependent variables, this suggests no substantial common method bias.

3. Lindell and Whitney's (2001) employed a theoretically unrelated construct (maker variable) to adjust the correlation among the principal constructs. Introducing "MakVar" as a maker variable, and the high correlation among any of the items of the study's principal constructs and "MakVar" would be an indication of common method bias. In contrast with the Harman single-factor test, the marker variable technique (Lindell and Whitney, 2001) attempts to control for CMV by including "a measure of the assumed source of method variance as a covariate in the statistical analysis" (Podsakoff et al., 2003, p. 889).

4. Examining the correlation matrix has been introduced by Bagozzi et al. (1991), investigating any highly correlated variables are evidence of common method bias, usually results in extremely high correlations (r>0.90).

In this research, the Harman's single-factor test was performed to test for the presence of CMV (Harman, 1967; Podsakoff and Organ, 1986). All the self-reported items were entered into a principal components factor analysis with varimax rotation. According to this technique, if a single factor emerges from the factor analysis or one "general" factor accounts for most of the covariation in the variables, CMV is present. Therefore and due to the fact that all the items in the questionnaire were completed by a single respondent, common method bias might exist in this study. To test common method bias, Harman's single-factor method was used. Harman's single-factor test which assumes that all items should yield a single factor if common method bias exists was used (Podsakoff et al., 2003). Exploratory factor analysis (EFA) results showed that eight distinct factors with eigenvalues near or above 1.0 were extracted, explaining 67.0% of the total variance. The first factor explained 33.65% of the total

variance, not the majority of the explained total variance (see Appendix I). These results are consistent with the absence of CMV.

4.14.4 Inferential statistics: reliability, factor, correlation, and MR analysis

In this study, the exploratory factor analysis (EFA)[1] was used to aggregate the multiple-item question responses in order to determine the overall measure for the variable. In this context, Hair et al. (1998) indicated that EFA is the appropriate method for assessing constructs. Similarly, Field (2005) argued that EFA can be used to understand the structure of a set of variables.

EFA classifies each variable into a set of dimensions. Such a classification can contribute to a more accurate determination of the relationships and influences between the variables. Thus, an EFA was performed to operationalise these variables and to test the degree to which the items are tapping the same concept. In implementing EFA, SPSS always finds a factor solution to a set of variables (Field, 2005, 640). Finally, to test the internal consistency, Cronbach's alpha was used to measure the reliability of the variables resulting from the EFA.

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[1] *To assess the exploratory factor analysis (EFA), five commonly used assumptions were followed (Hair et al., 1998; Field, 2000): Sampling adequacy (Kaiser-Meyer-Olkin measure greater than 0.5); the minimum eigen value for each factor to be one; considering the sample size, factor loading of .40 for each item was considered as the threshold for retaining items to ensure greater confidence; the determinant of the correlation matrix (more than 0.00001); varimax rotation was used since it is a good general approach that simplifies the interpretations of factors (Field, 2000, 449). Once the number of factors has been determined, the next step is to try to interpret them. Statistical Package for Social Sciences (SPSS) shows which variables 'clump together'. From your understanding of the contents of variables (and underlying theory and past research), it is up to you to propose possible interpretations (Pallant, 2001, 154).*

In addition to the EFA, the MR was used to determine the relationship between variables and to describe the strength and direction (i.e. whether positive or negative) of the relationship between two variables (Pallant, 2001). In order to judge the strength of the relationship between the variables, (i.e. the value of R), Bryman and Cramer (2001 citing Cohen and Holliday 1982) suggested the following: 0.19 and below is very low, 0.20 to 0.39 is low, 0.40 to 0.69 is modest, 0.70 to 0.89 is high, and 0.90 to 1 is very high. In contrast, Cohen (1988) suggested that a value of approximately 0.10 represents a small correlation, 0.30 a medium correlation, and 0.50 or more represents a large correlation. Pikkarainen et al. (2004) conducted a study about the acceptance of the OB, the MR indicated that the model multiple correlation coefficient (R) was 0.352 and the coefficient determination (R^2) was 0.124 whereas the adjusted R^2 was 0.093, and the overall model was considered as statistically significant. However, the MR of Lallmahmood's (2007) research about the intention to use e-commerce indicated that the model was also significant with R (0.821), R^2 (0.674) and adjusted R^2 (0.532). The research's' adoption, use and success of IB models were found explaining 62%, 39.4% and 30%, respectively, of the SA adopters, users and successful IB customers attitudes. The researches' models have shown high, good and fair prediction powers (R^2=62%, 39.4% and 30%) compared with other models (i.e. Suh and Han, 2002 R^2=75%; Wang et al., 2003 R^2=62%; Pikkarainen et al., 2004 R^2=12.4%; Shih and Fang, 2004 R^2=66%; Lallmahmood's, 2007 R^2=67%; Hosein, 2009 R^2=32.2%)

Multicollinearity tests were undertaken in this research and were presented in detail in Chapter 6; they cause a problem for MR since they can affect the parameters of a regression model (Field, 2005). According to Hair et al. (1998), there are three recommended methods for assessing multicollinearity: (1) the presence of high

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correlation (generally 0.90 and above), (2) the tolerance values, and (3) the variance inflation factor (VIF) values. The VIF values should not exceed the generally accepted maximum level of 10 (an indication of high levels of multicollinearity) and the tolerance values should not be less than the maximum level of 0.2 (also an indication of high levels of multicollinearity). Moreover, the Durbin-Watson (DW) test was performed to test if the residuals were correlated. The test values should be considered to be between the acceptable levels (less than 1 or greater than 3 are deemed to be unacceptable) (Field, 2000).

MR analysis is a statistical technique that can be used to analyse the relationship between a dependent variable and a set of independent variables (Hair et al., 1998). The main objective of MR analysis is to use independent variables whose values are known to predict a single dependent value (Hair et al., 1998). Each dependent variable is weighted by the equation of the MR to ensure maximum prediction from the independent variables (Hair et al., 1998). The weights denote the ability to quantify precisely the relative importance of each proposed variable. Thus, MR is used to investigate the relationships of a set of independent variables with a dependent variable. On the other hand, MR applications fall into two broad classes of research problems: prediction and explanation (Hair et al., 1998). MR is used to predict the dependent variable from independent variables in order to maximise the overall predictive power of the independent variables (Hair et al., 1998). For example, time series analysis is often used in prediction. An explanation using MR involves assessing the degree and the character of the relationship between the dependent and the independent variables. The independent variables, in addition to their collective prediction of the dependent variable, may also be considered for their individual contribution to the variation and its prediction (Hair et al., 1998). In this context, MR

determines the relative importance of each independent variable. MR provides the magnitude and the direction (i.e. whether positive or negative) of each independent variable's relationship, whether positive or negative. However, it shows the nature of relationships between the dependent and the independent variables in terms of linearity. The beta coefficient is a measure to determine the relationship between the dependent and the independent variables. In statistics, standardized coefficients or beta coefficients are the estimates resulting from an analysis performed on variables that have been standardized so that they have variances of 1. This is usually done to answer the question of which of the independent variables have greater effects on the dependent variable in a MR analysis.

The flexibility of MR ensures that the researcher examines the true nature of the relationship based on the linearity of the relationships (Hair et al., 1998). It gives an insight into the interrelationship between independent variables through the correlation matrix. In this research, regression analysis was used to test the research hypotheses. Finally, it should be noted that these statistical techniques have been frequently used in business research (Hair et al., 1998).

4.15 Chapter Summary

The processes of conducting a research project were explained and discussed in this chapter. The research philosophy and design were explained and the differences between research paradigms and methodologies were discussed. The positivistic paradigm employing a cross-sectional survey methodology was utilised as an appropriate approach for conducting this research. The research population, sampling frame and data collection methods were also discussed in this chapter, followed by the justification for selecting a large sample.

The study used a random sample of 1000 individuals who had a telephone line (Population = 2.9 million), chosen from the SA telephone directory, and the postal questionnaire method was employed as the most appropriate method to collect a large amount of data. The questionnaire was constructed and pre-tested and a pilot test was conducted. In addition, and as part of development of the research's questionnaire, the scales, measurements, and construct operationalisations for the research's variables were presented and identified. Finally, this chapter concluded that this research dealt with missing data by replaceing these missing values with mean values based on the valid responses on each item.

Furthermore, specific design methods were used in constructing the questionnaire. Several steps were employed for evaluating and testing the questionnaire and, in addition, pilot work was conducted. A total of 228 usable questionnaires were received, representing a 22.8% response rate. This was considered satisfactory for conducting the statistical analysis compared with the list of studies in Table 4.4. In addition, Denscombe (1998) indicated that it was not uncommon to get a response rate as low as 15% for postal surveys and Alreck and Settle (1985) confirmed that ''[mail] surveys with response rates over 30 percent are rare, response rates are often only 5 or 10 percent'' (p. 45).

This chapter indicated that the scale reliability (internal consistency) is acceptable, reliable, and above the recommended cut-off values, as the Cronbach's alpha (CRA) value = 0.80. In addition to that, the independent sample t-tests of statistical significance indicated that non-response bias was of no serious concern to this thesis. This study adopted the (Pearson) correlation analyses to estimate the validity for the items measuring the construct; the correlation results revealed statistically significant

at level 0.01, with high degree of internal correlation between all items on the scale, thus it confirmed the validity of the constructs and scales used in this study. The discriminant validity has been also conducted to assess how each construct discriminate from other constructs; the result was found satisfactory as all AVE for each construct were found greater than its shared variance with any other construct. In addition to that, to ensure content validity in this study, an extensive literature review was undertaken to define and clarify the scales and measures used in this research. Most of the items and scales used were adopted from previous empirical studies which contributed on meeting the requirements of the validity and reliability. The potential sources of the CMV were investigated and remedies/mitigations have been taken in this study to minimize the presence of the CMV. A statistical method has been also performed, Harman's single-factor method, to test the presence of the CMV the results are consistent with the absence of CMV (see Appendix I).

The descriptive statistical analysis indicated that all standard deviations indicated that the means were accurately representing the data. In addition, the skewness and kurtosis values show that all variables fell within an acceptable range for normality. This chapter concluded with by highlighting the number of statistical methods which were utilised in analysing the data. These methods are descriptive statistics (frequencies and means), and inferential statistics, such as multicollinearity tests, factor analysis, correlations and MR. All those analysis methods were explained and discussed briefly in this chapter and will be presented in greater detail in Chapter 6. The next chapter will discuss the descriptive statistics and the proposed methods of analysis of this study.

Chapter Five

Descriptive Statistics and Discussion

5.1 Introduction

This chapter gives the socio-economic characteristics of respondents who use IB services in SA. The sample surveyed in this study (228) represented 12 out 13 provinces in SA with a range of respondent characteristics. These characteristics are presented and reviewed in this chapter, such as respondents' demographic factors and their IB usage factors. These results would help in developing a real useful comparison with the current existing country's demographic statistical data.

Another comparison analysis between the IB adopters, users, and success is presented at the end of this chapter, in terms of the demographic characteristics of each facet to enhance the knowledge and provide a more in-depth investigation of the IB adoption, use and successful implementation.

5.2 Sample Characteristics

The sample characteristics of respondents are a significant variable used by policy makers when designing marketing schemes and business plans. As mentioned previously, the research's questionnaire was distributed randomly using the SA telephone directory; the respondents were found to be distributed in 12 out of the 13 provinces in SA (see Chapter 1), as presented in Table 5.1.

No.	Area/Province	Population (%)	Respondent Frequency	Respondent (%)
1	Makkah	25.5	44	19
2	ArRiyadh	25.0	65	29
3	AsSharqiyah	15.1	49	21
4	Asir	7.0	9	4
5	AlMadinah	6.6	21	9
6	Jazan	5.0	13	6
7	AlQassim	4.5	9	4
8	Tabuk	2.9	4	2
9	Hayil	2.2	5	2
10	Najran	1.9	4	2
11	AlJawf	1.6	-	0
12	AlBahah	1.5	3	1
13	AlHodud AsShamaliyah	1.2	2	1
	Total	100%	228	100%

Table 5.1: SA 13 Actual population per provinces and the research's response rate. Source: (Saudi.gov.sa, 2012).

Most of the respondents (69%) were from three main provinces in SA, namely, ArRiyadh, Makkah, and AsSharqiyah, as the majority of the SA population (65.6%) lives in these three provinces. These areas contain the four main cities, that is, the capital city and two other main cities on the east and west coast in addition to the Muslim world's holiest city. The sample characteristics are discussed in the next two main sub-sections, which deal with demographic and IB usage characteristics.

5.2.1 Demographic Characteristics

This part describes socio-economic characteristics, gender composition, age, income, education level, occupation, ability to use a computer, access to the internet, and field of study. The following table gives an overall summary of the respondents' demographic characteristics followed by sub-sections discussing these characteristics individually.

Profile	Category	Frequency	(%)
Gender	Male	191	83.8
	Female	37	16.2
Age	20 or less	28	12.3
	21-30	51	22.4
	31-40	86	37.7
	41-50	39	17.1
	51-60	24	10.5
Income	≤ than 50,000	16	7
	50,001-100,000	33	14.5
	100,001-150,000	94	41.2
	150,001-200,000	60	26.3
	≥200,001	25	11
Education level	High School	29	12.7
	Community College	80	35.1
	Bachelor	86	37.7
	Master	28	12.3
	Doctoral	5	2.2
Occupation	Public Sector	77	33.8
	Private Sector	132	57.9
	Self-employed	3	1.3
	Military Sector	16	7
Ability to use	Not good	6	2.6
	Beginner	46	20.2
computer	Good	161	70.6
	Expert	15	6.6
Access to internet	Home	79	34.6
	Internet café	13	5.7
	Work	136	59.6
Field of study	Business	42	18.4
	Engineering	16	7
	Education	32	14
	Medical	3	1.3
	Islamic studies	10	4.4
	Law	9	3.9
	Computer science	7	3.1
	Not graduated	109	47.8

Table 5.2: Summary of respondents' demographics.

5.2.1.1 Gender

The survey findings show that the gender structure is generally unbalanced. Table 5.2 explains that 83.8% were male and 16.2% were female. The big gap between these ratios refers mainly to the obstacle in accessing females, the strict separation between the genders, and the cultural emphasis on privacy for women in SA; females are usually difficult to reach for primary data collection purposes. The following Figure (5.1) presents comparison between the SA actual gender rates and this study respondents' gender rates.
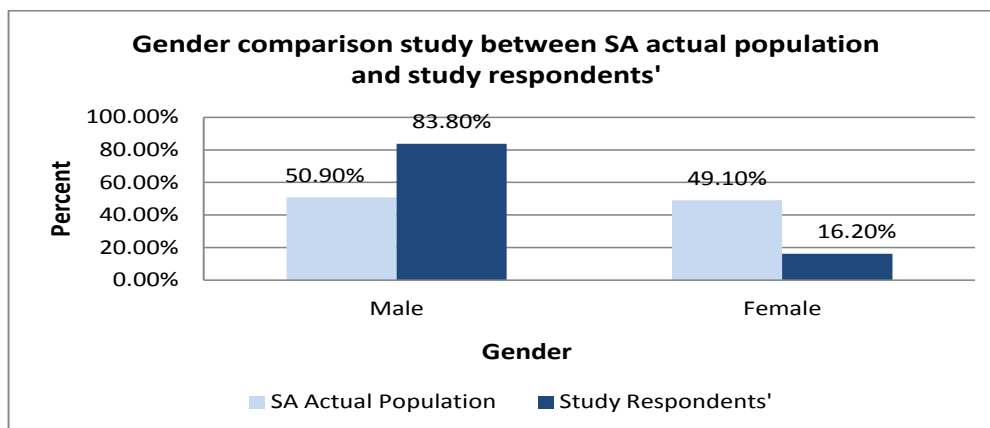
Figure 5.1: Comparison between the SA actual gender and the study respondents' gender.

Figure (5.1) indicate that the SA actual overall ratio of males to females is about 50.9% males to 49.1% females (CDSI, 2010). The difference between both categories in the research's survey refers to an increase in the number of males in the community and due to barriers to female participation in SA, as highlighted in Chapter 1. However, this result is in line with the findings of other studies (Al-Gahtani et al., 2007). Al-Gahtani et al. (2007) found in their study that 82% of their study respondents were male, and 18% of the respondents were females. Thus, these results are accepted generally.

5.2.1.2 Age

As indicated in Table 5.2, Figure 5.2 summarises the information gathered concerning the age of the respondents. The majority (37.7%) of the surveyed respondents were in the age range 31-40 years old. About 89.5% of the respondents were less than 50 years old, which is economiclly active age group and in the early stage of the life cycle, while 10.5% of the respondents were more than 50 years old. The concentration of respondents in the age groups between 21-40 years (59.2% of the sample) demonstrates that many of them use IB services.

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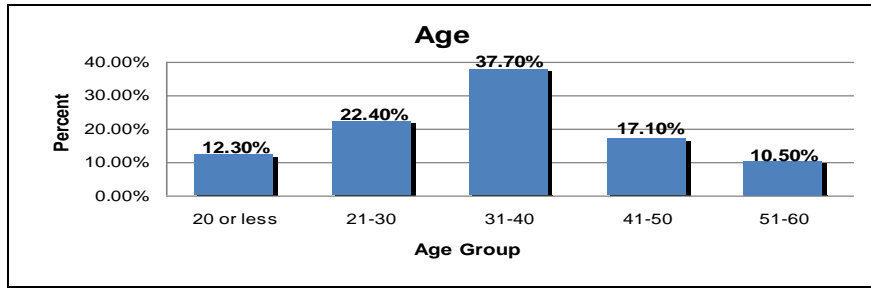
Figure 5.2: Respondents' age.

Reference to Table 5.2 and according to (CDSI, 2007), the age group of equal or less than 20 years accounts for 48.2% of the population of SA, whereas 41.22% are in the aged between 21 years to equal or less than 50 years old. Figure (5.3) present the variation between the research findings and CDSI findings for the country national profile, and that is due to the fact that the age group (less than 20) do not have bank accounts. In addition to that, the younger respondents participate less frequently in surveys because they have typically limited job opportunities (source of income) and/or are busy in school.
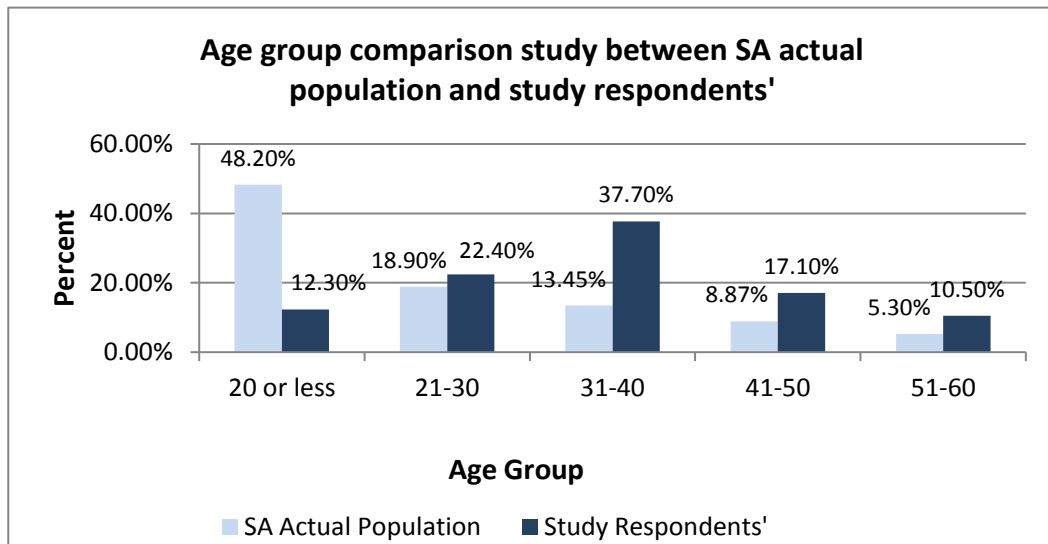
Figure 5.3: Comparison between the SA actual population ages and the study respondents' ages
Source: Research findings and (CDSI, 2007).

5.2.1.3 Respondents' income

Income can be considered as one of the fundamental socio-economic characteristics of the sample. Analysing income level could throw light on the behavioural trends of

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respondents and could assist in making recommendations. In assessing respondents'
income, Table 5.2 and Figure 5.4 show that 21.5% of respondents were found to have
low incomes, 67.5% had medium incomes and only 11% of respondents had high
incomes.

However, and as highlighted in chapter 3, the number of Saudi nationals who earn
less than USD 2 a day was 1.63% of the population, or approximately 300,000, and
400,000 families (around 19% of the population) were found spending less than SR
3,800 or USD 1,000 a month (Ramady, 2010), which is considerably low income. In
addition to that and as also illustrated in chapter 3, the SA national's average income
per capita were found 22,000 USD, which is considered as a medium income level for
the majority of the SA population. As a result, these findings are in parallel with this
research findings as the majority (89%) of the respondent were between low and
medium levels of income.
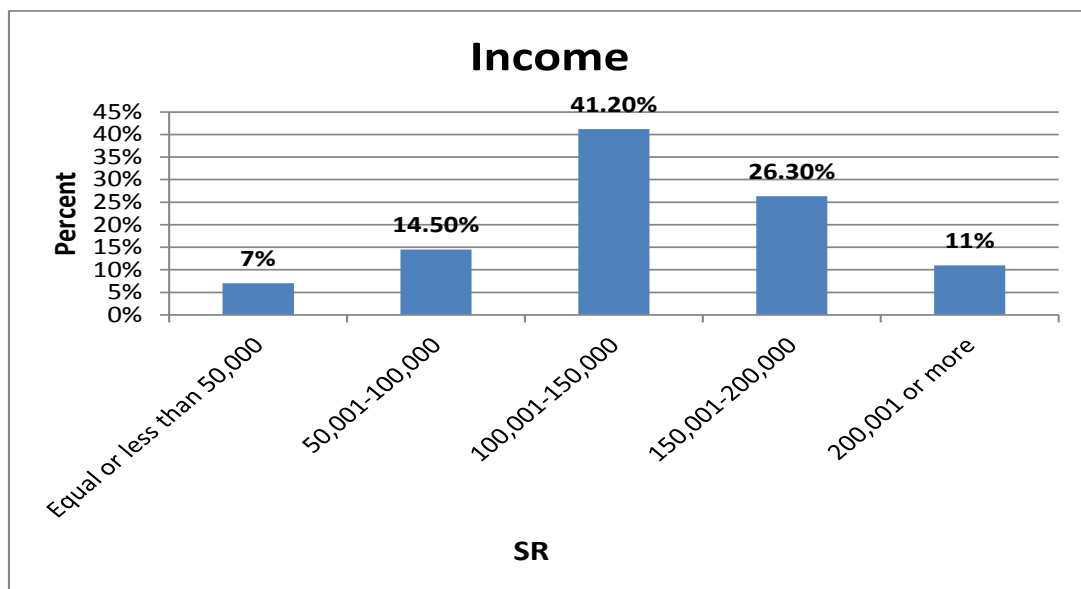
Figure 5.4: Respondents' Income.

5.2.1.4 Educational level

Table 5.2 and Figure 5.5 reveal that the majority (37.7%) of the respondents had a bachelor degree, with 14.5% having post graduate degree, 35.1% having attended community college, and 12.7% having attended only high school.
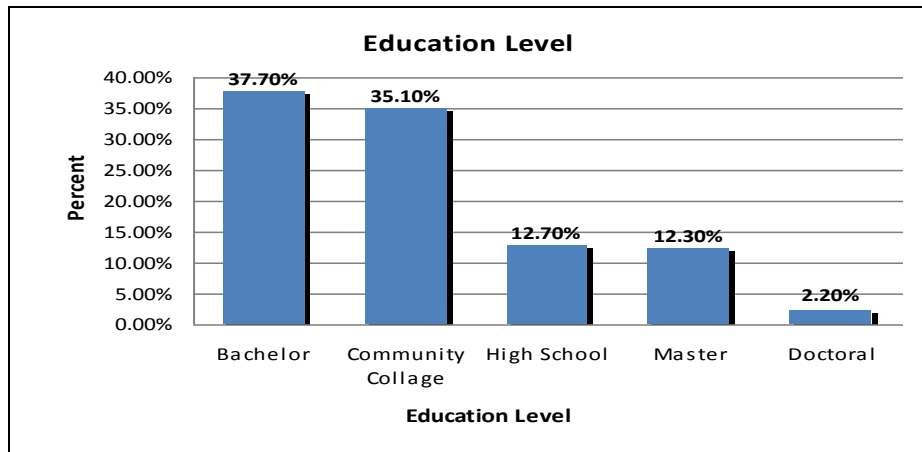
Figure 5.5: Respondents' educational level.

As illustrated bellow Figure (5.6), CDSI (2007) found that 14.7% of the Saudi Arabian population have High school, 7.2% have bachelor degrees, 2.6% have a community college qualification, 0.29% has Master degree and 0.1% of them have Doctoral degree.
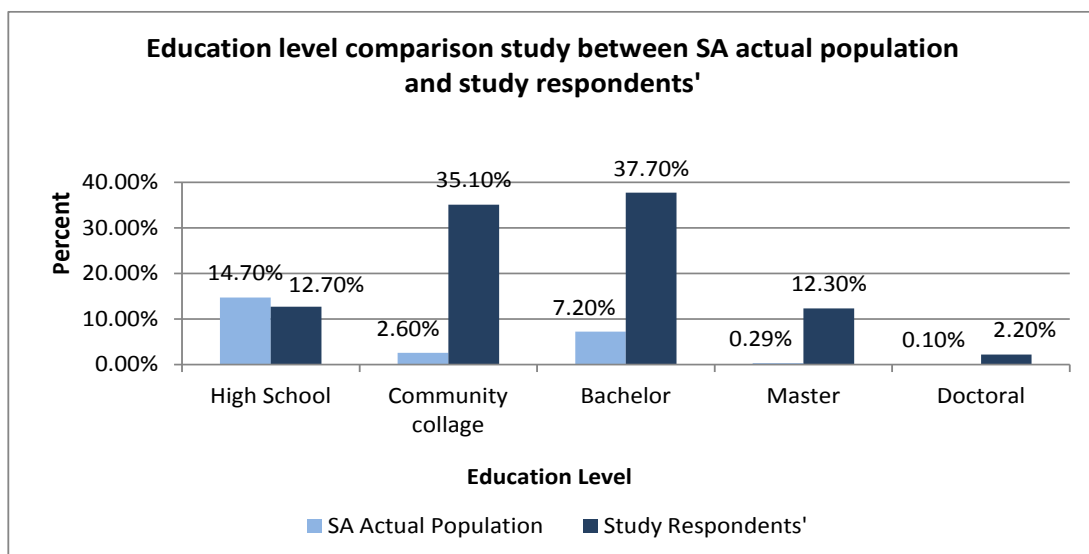
Figure 5.6: Education levels comparison between the SA actual population and study respondents.
Source: Research findings and (CDSI, 2007).

Figure (5.6) present a comparison between the research's findings and the CDSI findings of the country national profile, and it shows a variation between both findings and that is due to the fact that all the respondents in this research were able to read and write (educated) to communicate when using IB services, whereas the CDSI research had been applied to the entire Saudi Arabian population, where the probability of having non-educated people is high. This suggests that people who use IB are substantially well educated and this means that if banks, governments and other agencies want wider adoption of the IB, they need to make it easier, and more fixable. In SA, the adoption of tele-banking has been found positively associated with educational level (Al-Ashban and Burney, 2001), and other studies found that customers who are educated, more likely to use IB (e.g. Sathye, 1999; Karjaluoto et al., 2002; Mattila et al., 2003).

Moreover, Figure (5.7) illustrate that most respondents had achieved reasonable levels of education, but it has a high variation between male and female. As mentioned earlier, this is due to the social and cultural difficulties to reach female for primary data collection.

Respondent's education level comparison study between SA male and female
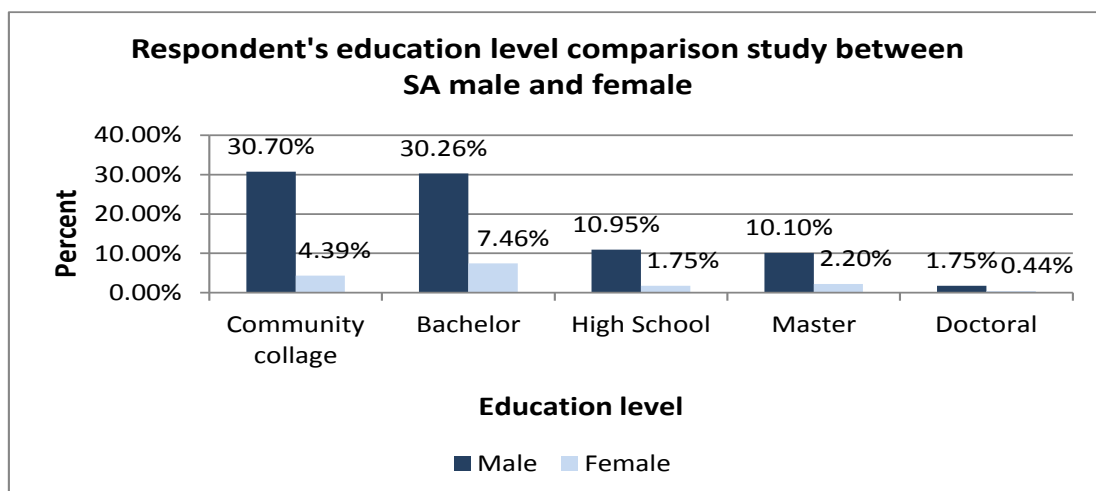
Figure 5.7: Respondent's education levels comparison between Male and Female.

In general, the research respondents have reasonable levels of education as it should have equipped them with the ability to discuss their problems and to give clear opinions about IB services. However, the educational level is important as it tends to influence perceptions concerning the quality and most significantly the adoption of IB services.

5.2.1.5 Occupation

Table 5.2 and Figure 5.8 give details of the occupations of respondents. Respondents' occupations could be divided into four active groups. The first group is represented by respondents who worked in the government sector (33.8%). They had skills with various backgrounds and were employed fundamentally within the formal sector of the economy, such as education, management, accounting and medical services. The second group is represented by respondents who worked in the private sector (57.9%). This group was largely professional with high levels of skills and is exposed on the latest technology more than the other sectors.
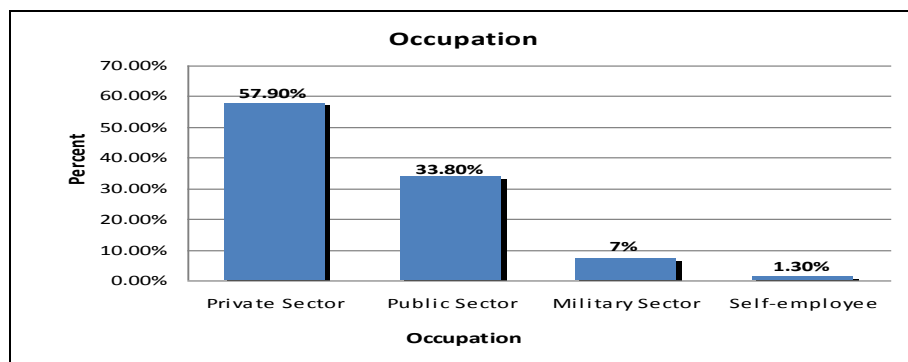
Figure 5.8: Respondents' occupations.

The third group is represented by respondents who were self-employed. It is also interesting to note that 1.3% of respondents were self-employed, such as traders, drivers, gardeners, repairers, builders, carpenters, tailors, mechanics, and launderers. This group is in the informal sector; people in this category are unlikely to have medical insurance or social security. The fourth group is represented by respondents

who worked in the military sector (7%). This group was basically professionals with a high level of skills in certain jobs.

According to the GCC employment statistical reports (2008), 35% of the entire population of Saudi Arabian workers work in the government sector whereas 65% work in the private sector. Due to the confidentiality and sensitivity of the military sector information, the GCC reports did not consider the military information and therefore the researcher was not able to access the relevant data. The research figures are almost in line with GCC employment statistic figures. Theses similarities are due the facts that the majority of employment sector (Government/ Private) in SA, are having Bank accounts, as their employers deposit their salaries directly in their account. This has encouraged the SA employees to have IB account with their banks.

Figure 5.9 shows that there are a high variation between male and female in terms of their occupation, and this is due to the limitation of women participation during the data collection as illustrated earlier in this chapter. These results and variations are in line with our findings in chapter one, as we highlighted that there are several barriers and obstacles in female participation (listed in Table 1.1) in the public life in SA.
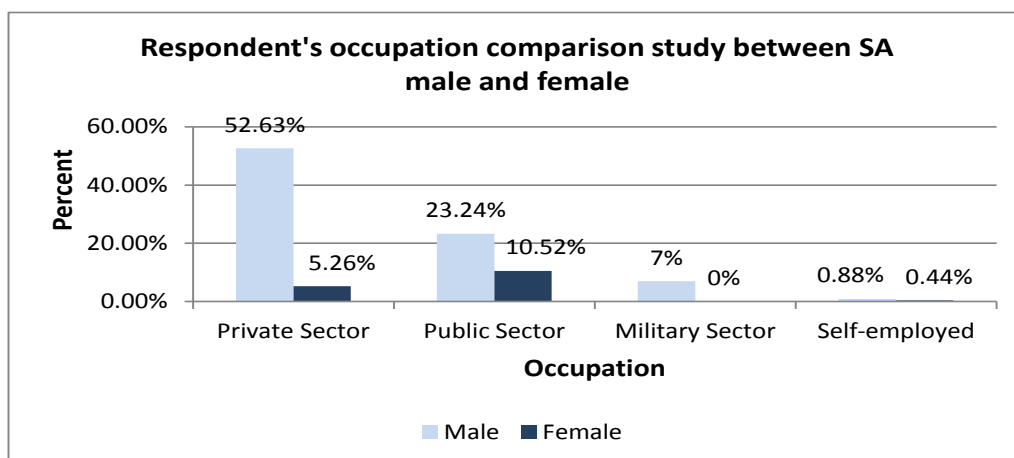
Figure 5.9: Respondent's occupation comparison between SA male and female.

5.2.1.6 Ability to use a computer

An investigation into the ability to use a computer requires an understanding of the levels of individuals' capabilities regarding computer use. The researches findings show that many (70.6%) of the respondents had a good ability to use a computer. Table 5.3 shows that 20.2% of respondents were found to have a moderate ability to use a computer, 6.6% of respondents had a high ability to use a computer, and 2.6% of respondents had a limited ability to use a computer. For those respondents who considered themselves as beginners or had limited ability to use a computer, it is expected that this will minimise their usage and will impact the frequency of using computers. In addition to that, this study revealed that most of the respondents considered themselves able to use a computer, which is expected to reflect positively on their computer usage.

Ability to use computer					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not good	6	2.6	2.6	2.6
	Beginner	46	20.2	20.2	22.8
	Good	161	70.6	70.6	93.4
	Expert	15	6.6	6.6	100.0
	Total	228	100.0	100.0	

Table 5.3: Ability of respondents to use a computer.
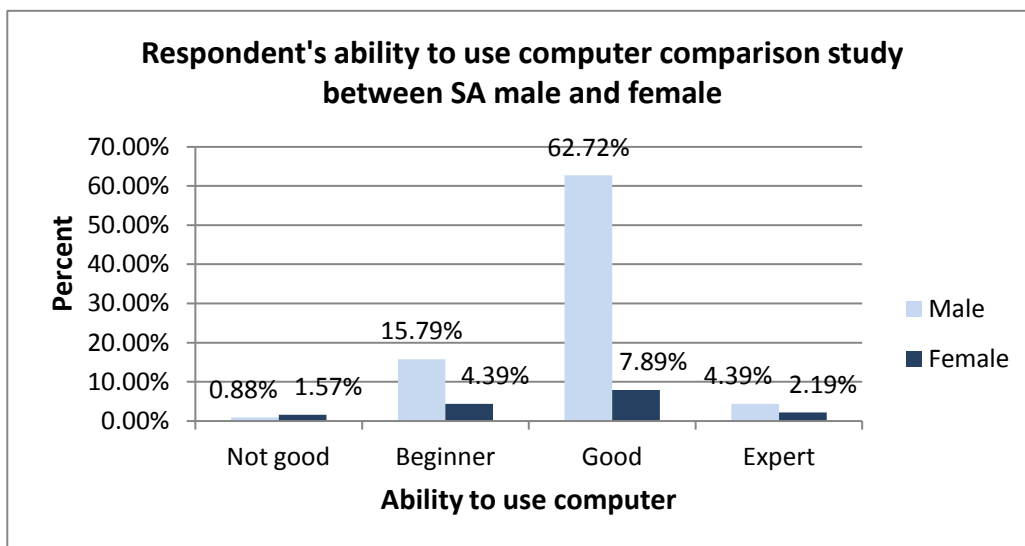
Figure 5.10: Respondent ability to use a computer, comparison between male and female.

5.2.1.7 Access to the internet

According to Table 5.2 and Figure 5.12, people had access to the internet through three major modes. The first mode was accessing the internet through their work; 59.6% of respondents accessed the internet through their work, 34.6% through their homes, and 5.7% through internet cafes. Probably, people prefer to access the internet through their work because it is free and, thus, they save the cost of monthly or annual subscriptions. In addition to that, the employees who work in SA spend at least third of their day time in their work; this also supported the findings of this research.

In 2007, CDSI reported that 46% of the Saudi Arabian families owned a computer and 41% of them had access to the internet at home which is equivalent to 37% of the SA population. On the other hand, internet penetration has increased continuously from 55% in 2007 to 73% in 2009 in the working environment in SA (CITC, 2009). As it increased in the corporate sector, from 65% in 2007 to 73% in 2009 among government offices, moved from 37% in 2007 to 63% in 2009 in the health sector, and reached to 93% of the educational institutions (CITC, 2009). This has increased the usage of the internet among the employees in their working environment in SA. These figures support this research finding as the majority (59%) of the study respondents has been found using the internet from their work.
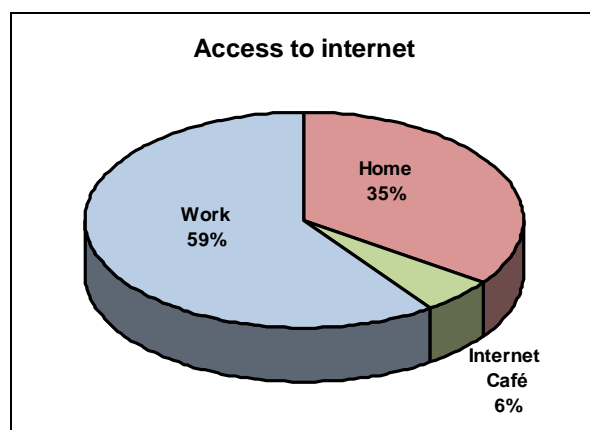
Figure 5.11: Respondents' access to the internet (%).

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In addition to that, Figure (5.12) shows that the majority of the male respondents access to internet from work, whereas the majority of the female respondents access to internet from home. This is because of most of the respondents females' commitments are at home and males' commitments are outside their home. Moreover and due to the fact that most of the respondents (84%) are male, this explains why the majority of the respondents of this studies access to internet from their work.
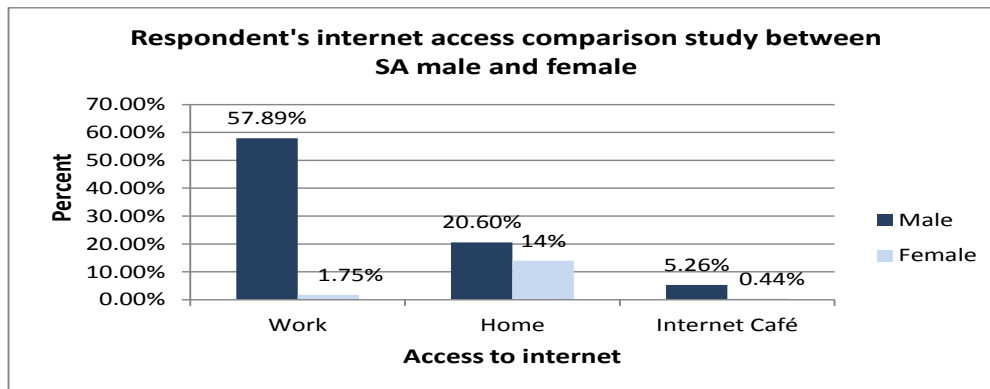
Figure 5.12: Respondent's access to the internet, comparison between SA male and female

5.2.1.8 Field of study

The field of study is considered to be an important feature for the usage of IB; it has a powerful relation with the expansion of IB services as the usage of IB is influenced by study fields. Table 5.2 and Figure 5.13 show that the majority of respondents studied business (18.4%) and education (14.1%). The table also illustrates that 7% of respondents studied engineering, 3.9% law, 4.4% Islamic studies, 3.1% computer science, and 47.8% of the respondents did not have a degree.

According to CDSI (2004), out of the Saudi Arabian population (of people older than 17 years), 58% held high school and secondary school degrees. In line with the findings study; the majority of SA area of study were education and business with 16% studied education, 11.7% business and 2.6% engineering (CDSI, 2004). In SA, the selection of the field depends basically on the overall percentage of the final

examination at the high school stage, the availability of job opportunities after graduation, and socio and cultural factors. These results suggest that people are more interested in improving their socio-economic conditions and that this influences their usage of IB.
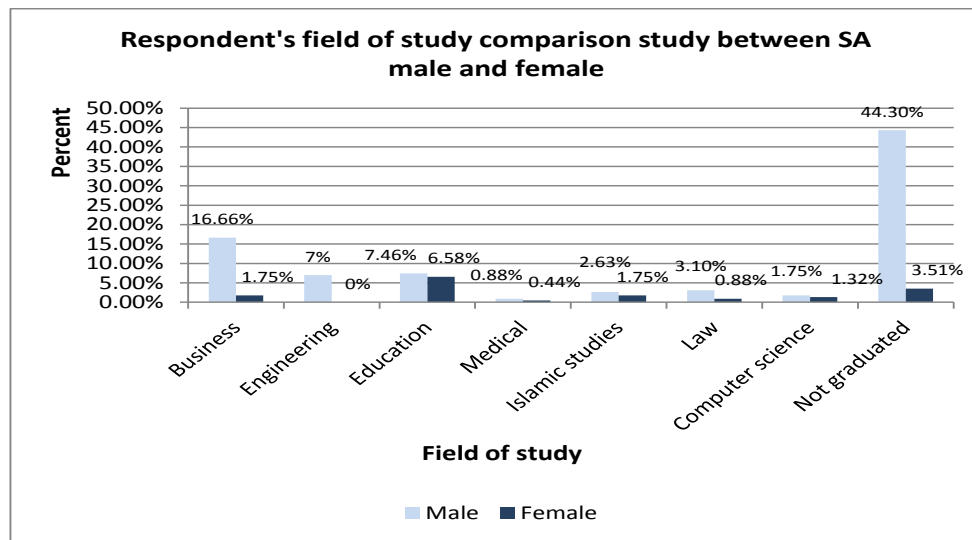
Figure 5.13: Respondents' fields of study, comparison between SA male and female.

Figure 5.13 shows that the majority of the respondents (48.8%) are not college graduates. In addition to that, the majority of the male respondent's fields of study are business (16.66%) then education (7.46%), whereas the majority of the female respondent's fields of study are education (6.58%) first and then business and Islamic studies equally with a percentage of (1.75%) for each of them. These findings are in parallel to the actual government statistics figures (CDSI, 2004).

5.2.2 Respondents' IB Usage Characteristics

This section reviews and presents the IB usage characteristics, such as usage periods of IB, monthly access to the internet and IB, and the most popular banks and will conclude with the different requested IB services. Table 5.4 shows an overall summary of respondents' IB usage characteristics followed by sub-sections presenting these characteristics individually.

Profile	Category	Freq.	%
Usage period of internet	Less than 1 month	7.0	03.10
	1-12 months	20	08.80
	1-3 years	30	13.20
	3-5 years	61	26.80
	More than 5 years	110	48.20
Access to internet monthly	1-5 times	4	01.80
	6-10 times	17	07.50
	11-20 times	38	16.70
	21-30 times	126	55.30
	More than 31 times	43	18.90
Banks	Al-Bank Al-Saudi Al-Fransi	6	02.60
	National Commercial Bank	56	24.60
	Saudi Investment Bank	9	03.90
	Saudi British Bank	10	04.40
	Arab National Bank	43	18.90
	Bank Al-Bilad	4	01.80
	Al-Rajhi Bank	87	38.20
	Bank Al-Jazirah	4	01.80
	Riyadh Bank	2	00.90
	Saudi Hollandi Bank	4	01.80
	Saudi American Bank	3	01.30
Usage period of IB	Less than 1 month	11	04.80
	1-12 months	25	11.00
	1-3 years	24	10.50
	3-5 years	135	59.20
	More than 5 years	33	14.50
Access to IB monthly	1-5 times	45	19.70
	6-10 times	109	47.80
	11-20 times	31	13.60
	21-30 times	21	09.20
	More than 31 times	22	09.60
Access to IB in the future	1-12 months	8	03.50
	1-3 years	13	05.70
	3-5 years	41	18.00
	More than 5 years	166	72.80
Reasons for using IB	Check account balances	194	85.10
	Transfer money between accounts	125	54.80
	View images of your checks	148	64.90
	Obtain interest rate on deposit product	169	74.10
	Request copies of past statements	202	88.60
	Order traveller's, cashier's, and regular cheques	87	38.20
	View transaction history	187	82.00
	Payment of bills	128	56.10
	Purchase of goods or services	74	32.50
	Apply for loan	86	37.70
	Check my share's portfolio account	118	51.80

Table 5.4: Respondents' IB usage characteristics.

Table 5.4 shows a comparison analysis among the internet and IB adopters and users

in terms of period of use (adopters), and frequency of usage (users) and too frequent

users (successful users) who use the IB services widely. In terms of the period of use,

it was found that the majority (48.2%) of the respondents had been using the internet

for more than 5 years, whereas 74% of them are accessing the internet more or equal 21 times monthly. This study also reveals that users who had been using IB for one year and less were 15.8%. This group of respondents were found less than 30 years old, moderate income, educated, the majority of them were male and were using the internet in the last years. Whereas 75% of the respondents were using the IB for more than 3 years, and users who had been using IB for more than 5 years accounted for 14.5%. These findings suggested that there is a moderate usage of the internet and IB in SA. Table (5.4) also reveal that almost 23% of the IB users were using the IB from 11 to 30 times a month. However, 10% of the IB users were found using the IB services for more than 5 years. The group of respondents who were using the IB services from 11 to 30 times were found middle aged, educated, receiving moderate income, the majority of them were male and frequent internet users (21 to 30 times a month) Moreover, this study also found a wide usage of the Banking services by the customers, over the internet, as more than 5 services were found used intensively (65% and above). This study found that the majority (46%) of the IB users were found using 5 services and more. This group of respondent were found middle aged, high income, educated, the majority of them were male and have been found using internet more than 21 times a month. In the next sub section, a detailed explanation of table (5.4) items will presented and discussed.

5.2.2.1 Usage period of the internet

The results summarised in Table 5.5 show that 48.2% of respondents had been using the internet for more than 5 years, 26.8% had been using the internet for between 3 and 5 years, 13.2% for between 1 and 3 years, 8.8% for between 1 and 12 months, and 3.1% had been using it for less than one month. It is important to note that many people considered themselves to be familiar with the internet. The attitudes of these

people toward length of usage of internet were more or less similar to those of internet users in other countries.

Usage period of internet				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 month	7	3.1	3.1	3.1
	1-12 months	20	8.8	8.8	11.8
	1-3 years	30	13.2	13.2	25.0
	3-5 years	61	26.8	26.8	51.8
	More than 5 years	110	48.2	48.2	100.0
	Total	228	100.0	100.0	

Table 5.5: Usage period of internet by respondents.

5.2.2.2 Access to the internet monthly

People access the internet at different times. Table 5.6 indicates that a higher proportion of respondents (55.3%) were found to be using the internet 21-30 times monthly. The findings reveal that 18.9% of respondents were using the internet more than 31 times monthly, 16.7% were using the internet 11-20 times every month, 7.5% were using the internet 6-10 times monthly, and only 1.4% 1-5 times monthly. These results suggest that 74.2% of people use the internet more than 20 times monthly, which means that people are attracted to deal with the internet.

Access to internet monthly				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 times	4	1.8	1.8	1.8
	6-10 times	17	7.5	7.5	9.2
	11-20 times	38	16.7	16.7	25.9
	21-30 times	126	55.3	55.3	81.1
	More than 31 times	43	18.9	18.9	100.0
	Total	228	100.0	100.0	

Table 5.6: Frequency and percent of access to internet monthly by respondents.

5.2.2.3 Banks

In analysing Table 5.7, the results indicate that there are three major banks, Al Rajhi Bank, NCB, and Arab National Bank, and these had attracted 81.6% of the respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Al-Bank Al-Saudi Al-Fransi	6	2.6	2.6	2.6
	National Commercial Bank	56	24.6	24.6	27.2
	Saudi Investment Bank	9	3.9	3.9	31.1
	Saudi British Bank	10	4.4	4.4	35.5
	Arab National Bank	43	18.9	18.9	54.4
	Bank Al-Bilad	4	1.8	1.8	56.1
	Al-Rajhi Bank	87	38.2	38.2	94.3
	Bank Al-Jazirh	4	1.8	1.8	96.1
	Riyadh Bank	2	.9	.9	96.9
	Saudi Hollandi Bank	4	1.8	1.8	98.7
	Saudi American Bank	3	1.3	1.3	100.0
	Total	228	100.0	100.0	

Which bank you with

Table 5.7: Respondent distribution across the 11 banks.

As SA represents the heart of the Islamic world, most people have a preference for local Islamic banks rather than traditional commercial banks. This is because Islamic rules forbid dealing with interest (*Riba*). As defined in Chapter 3, *Riba* is exchanging cash with cash, with one party paying back extra either immediately or later. This type of transaction is forbidden in Islam; the prohibition also applies to putting money in the bank and receiving interest. Therefore, 81.6% of respondents preferred the Islamic banks, namely, Al Rajhi Bank, NCB, and Arab National Bank, since these banks are based on Islamic financial principles.
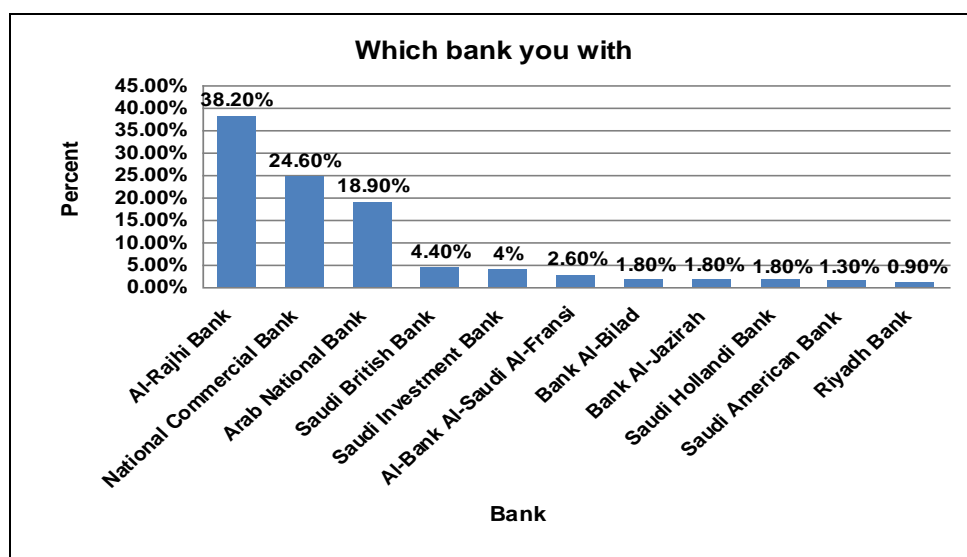
Figure 5.14: Percents of respondents that belong for each bank.

5.2.2.4 Usage period of IB (Adoption)

The usage of IB usually occurs over a number of time periods, according to the availability of different IB services and if they are meeting the customers' needs. As presented in the earlier chapters (Chapter 2); the start or initial use of the IB services which results to a smaller period of experience in using IB is considered a predictor for adoption (Al-Ashban and Burney, 2001; Al-Gahtani et al., 2007). In this study; the adoption was measured by the periode of using the IB services of one year or less. Therefore, the results of this study (Table 5.8) indicate that 16% of the respondents are adopters as they were adopting the IB services for 1 year or less. In this study, the majority of respondents (59.2%) had used IB for 3-5 years. Table 5.8 reveals that 14.5 % of respondents had used IB for more than 5 years, and 21.5% for users who use the IB services from 1 and 3 years.

Usage period of IB		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	Less than 1 month	11	4.8	4.8	4.8
	1-12 months	25	11.0	11.0	15.8
	1-3 years	24	10.5	10.5	26.3
	3-5 years	135	59.2	59.2	85.5
	More than 5 years	33	14.5	14.5	100.0
	Total	228	100.0	100.0	

Table 5.8: Usage period of IB by respondents.

These results revealed that the usage periods of IB in this study is relatively long compared to the history of IB in SA. Also, this suggests that numerous financial transactions are implemented via IB. Overall, and due to the fact that many people were using the IB services for more than one year, this has contributed to increase the usage frequency of the IB asdiscussed in the following section.

5.2.2.5 Access to IB monthly (Use)

IB access in SA can be categorised according to different rates. Table 5.9 indicates that some of the respondents (19.7%) could be considered as light users, as they were using IB services from 1-5 times monthly. The findings also reveal that 70.6% of respondents (moderate users) were using IB services 6-30 times every month and 10% of them (heavy users) were using IB services more than 31 times every month. As highlighted in chapter 4, this subsection has been suggested to be a measure for IB usage. In this study, results (Table 5.9) indicate that the frequency of using IB services from 6 to 31 times a month which predicts the use of IB. Thus, Table 5.9 indicates that 71% of the respondents are considered as IB users.

Access to IB monthly				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 times	45	19.7	19.7	19.7
	6-10 times	109	47.8	47.8	67.5
	11-20 times	31	13.6	13.6	81.1
	21-30 times	21	9.2	9.2	90.4
	More than 31 times	22	9.6	9.6	100.0
	Total	228	100.0	100.0	

Table 5.9: Respondents' access to IB monthly.

5.2.2.6 Access to IB in the future

It is almost impossible to specify the extent of the future usage of IB as it depends on individuals' behaviour and the security of information within the banks. The results reveal that 72.8% of the respondents who were using IB services intended to use IB in the future for a period of more than 5 years. Table 5.10 also shows that 18% of respondents aimed to use IB services in the future for a period of 3 to 5 years, while 5.7% of the IB users intended using the service in the future for a period of 1 to 3 years, with 3.5% of them aiming to use it for the next year only. These findings indicate that the respondents were satisfied with the IB services provided by SA banks.

Thinking of using IB in the next period				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-12 months	8	3.5	3.5	3.5
	1-3 years	13	5.7	5.7	9.2
	3-5 years	41	18.0	18.0	27.2
	More than 5 years	166	72.8	72.8	100.0
	Total	228	100.0	100.0	

Table 5.10: Thinking of using IB in the next period.

Regarding this, IB was perceived by the users as quite a useful tool for managing their financial matters. Ease of use and other quality factors were some of the factors considered acceptable by the IB users. Most of the respondents demanded faster download access to IB. Improvements should be made in terms of providing better accessibility and then satisfying the IB users' needs for the successful implementation of IB services in SA.

5.2.2.7 Reasons for using IB (Success)

To understand the reasons that contribute to IB use, respondents were asked about these reasons. All of them gave more than one reason and, thus, the frequencies in Table 5.11 are greater than the size of sample.

Reasons	Frequency	Percentage (%)
Request copies of past statements	202	88.6
Check account balances	194	85.1
View transaction history	187	82.0
Obtain interest rate on deposit product	169	74.1
View images of your cheques	148	64.9
Payment of bills	128	56.1
Transfer money between accounts	125	54.8
Check my share's portfolio account	118	51.8
Order traveller's, cashier's, and regular cheques	87	38.2
Apply for loan	86	37.7
Purchase of goods or services	74	32.5

Table 5.11: Reasons for using IB.

A suggested in chapter 4, the customer's satisfaction (agree and strongly agree) and the number of the used IB services (more than 5 services) are measures for the success of the IB services. The following crosstabulation, Table (5.12) indicate that customers who are using more than 5 IB services and are satisfied (satisfy and strongly satisfy) from the provided IB service represents 10% of the respondents. This type of users is enjoying the success of their IB implementation.

No. of IB account services * Satisfaction of the IB services? Crosstabulation

Count

	No. of IB account services	Satisfaction of the IB Services?					Total
		Strongly disagree	Disagree	Uncertain	Agree	Strongly Agree	
Use IB Account to do number of Services	1 - 2	4	3	5	9	3	24
	3 - 5	19	25	39	65	25	173
	5 <	0	2	7	13	9	31
Total		23	30	51	87	37	228

Table 5.12: Crosstabulation between number of the used IB services and Satisfaction

5.2.3 Demographic Characteristics of Adoption, Use & Success

In the following paragraphs, Figure 5.15, a comparasion analysis between the different research facets; Adoption, Use and Success based on the demographics charactaristics of the respondents are presented.
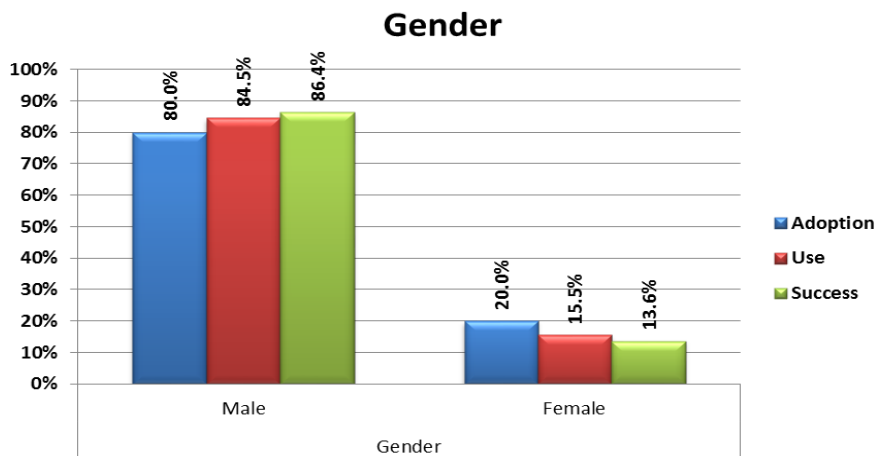
Figure 5.15: Gender percentage distribution among Adption, Use and Success

In term of the rspondents gender, this study indicated that 83.8% were male and 16.2% were female, and Figure 5.15 revealed that the percentage of the females is decreasing when moving gradually from adoption to use and then success as the percentage of the female IB adopters is 20%, 15.5% for the female IB users and 13.6% of them are enjoing the success of their IB implementation. On the other hand, Male percentages distribution was the opposite as the percentage of the male IB adopters is 80%, 84.5% for the users and 86.4 for those male who are enjoing their IB success. This means that males IB customers in SA are more satisfied and frequent users more than females.
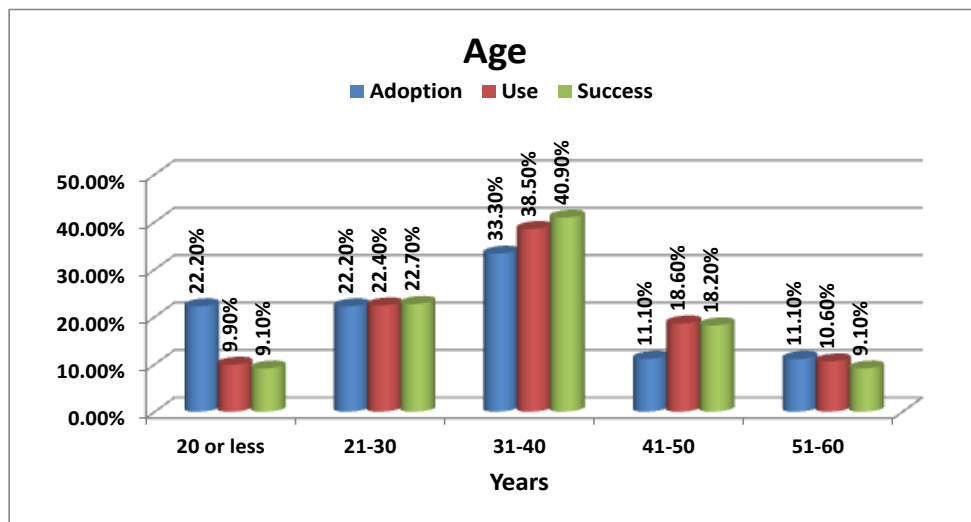
Figure 5.16: Age percentage distribution among Adption, Use and Success

In term of the rspondents Age distribution, this study indicated that the majority of the respondents (59.2%) were middle aged, focusing between 21-40 years. Figure 5.16 did not indicate any significant differences from the overall age percentage distribution findings as the IB adoption; use and success customers were consentrating between 21-40 years.
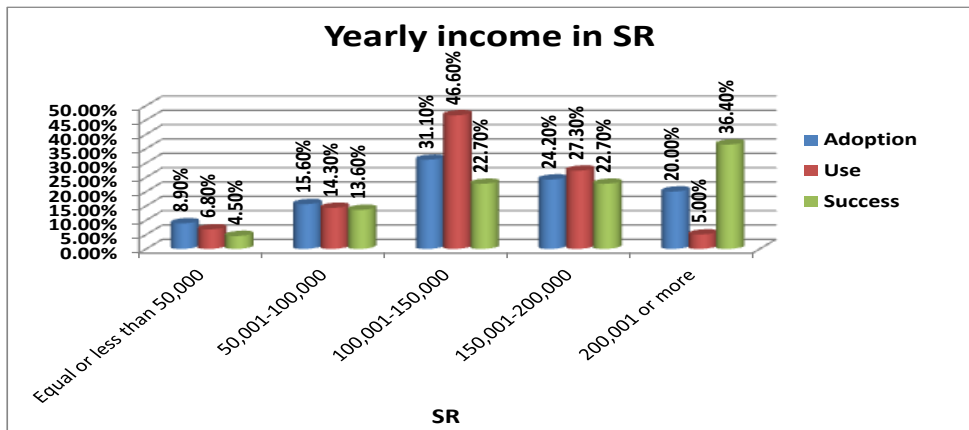
Figure 5.17: Yearly incom percentage distribution among Adption, Use and Success

Although this study identified that that the majority (41.2%) of the respondents were having yearly income between SR 100,001 to 150,000, but Figure 5.17 revealed that income levels were having an important relationship with the success of the IB in SA. Table (5.17) showed clearly that there is increase in the percentage of the success of the IB when there is increase of the income levels. This section concludes that the higher income levels of the IB customers; the higer the percentage of the IB success will be. On the other hand, the adoption and use of IB did not show significant differencies with the overall income levels in this study as showen in Figure (5.17), as both IB adoption and use customers were found having midel income levels.
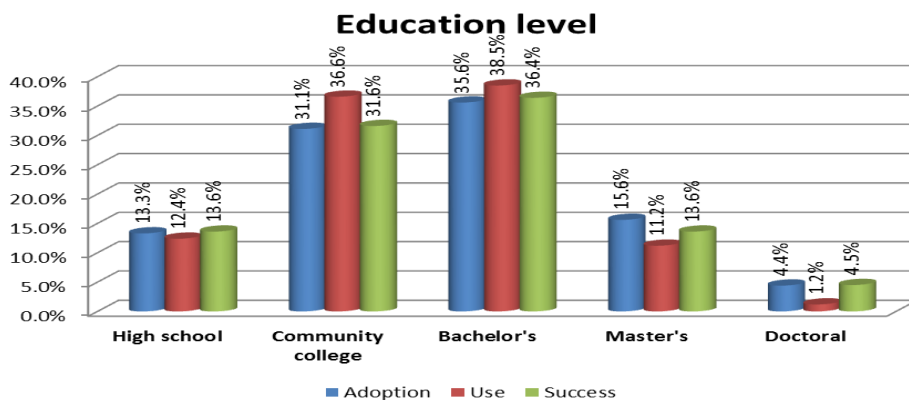
Figure 5.18: Education levels percentage distribution among Adption, Use and Success

As illustrated in Table 5.2 and Figure 5.5 of this chapter, this study found that the more than half (52.2%) of the respondents had bachelor degree or post graduate

degree. This group of respondents are divided between adopters, users and successful IB customers. Figure 5.18 indicated that 54.5 % of the successful IB customers in this study were found having bachelor degree or postgraduate degree; whreas 50.9% among the IB users were having either bachelor degree or postgraduate degree, and adopters were found having 55.6% among them having the sme degrees. Although, these figures indicated that the sample of this study was showing high education levels of the respondents, but the education levels were not found an important factor in indicating the adopters, from users or even the successful IB customers, as all of them were highly educated.

5.3 Chapter Summary

This chapter presented the sample characteristics of respondents (228) who were using IB services in SA. The descriptive analysis of the respondents found that the majority of the respondents were male (84%), as due to the limited participation of the females in the public life in SA has also impacted their participation in this study. The variation between both categories in the research's survey refers to an increase in the number of males in the community and due to barriers to female participation in SA, as highlighted in Chapter 1.

Different than the country national profile; the result of this research found that 12.3% of the respondents were found to be younger than 20 years old and 32.35% for age group between 21 to 40 years, whereas the country national profile indicate 48.2% for 20 years or less and 60.1 for age group between 21 to 40 years of the total population of SA. This variation is due to the fact that age group (less than 20) of the country population do not normally have bank accounts and also they limited job opportunities (source of income) and/or are busy in school.

Different than the country national profile, the descriptive analysis of this study also found that the majority of the respondents were highly educated, as more than 50% of the respondents had either a bachelor degree or a postgraduate degree, which contradict with the national profile as 7.5% of the population were having bachelor degree, 4.3% having community college, and 2.2% were having master degrees. In addition to that, more than 75% of the respondents were found considering themselves good or expert at using a computer. The high variation between the respondent educations level and SA population education level is due to the fact due to the fact that all the respondents in this research were able to read and write (educated) to communicate when using IB services, however the Saudi Arabian population, where the probability of having non-educated people is high. In adtion to that the higher icome levels were found having a positive relation with the success of the IB in SA.

Finally, the majority of the respondents (more than 80%) had a bank account with either AlRajhi Bank, NCB, or Arab National out of a selection of 11 Saudi banks, as those banks main strength is in providing IsB services as highlighted in chapter two. The result of the descriptive analysis found that around 75% of the respondents had been using IB services for more than 3 years, and 33% of them were accessing their IB account more than 11 times monthly, which indicate a good usage level of the IB in SA. In addition to that, 72.8% of the respondents are intending to use IB in the future for a period of more than 5 years, which also indicate that the provided IB services in SA are satisfactory.

Chapter Six

Inferential Statistics and Discussion

6.1 Introduction

The main purpose of this chapter is to cover the research's inferential statistics analysis and the testing of the research's hypotheses. In addition, the results of the factor analysis of the research variables are presented and discussed. This chapter also presents the findings relating to the testing of the hypotheses relating to the relationship between the contingent variables and the adoption, use and success of IB services. This chapter concludes by presenting the research's adjusted models and by highlighting the main findings and providing a detailed description of each one.

6.2 Testing of Research Hypotheses

6.2.1 Factor Analysis

As mentioned in the previous chapter, factors analysis is used for classifying and identifying groups of variables. It has been stated that multiple-item questions (based on 5-point scales) were extensively used in this research to measure the contingent variables which may influence the adoption, use, and success of IB services. A detailed discussion of the results of the factor analysis and the reliability of the variables used in this research is presented in the next sub-sections.

6.2.1.1 Satisfaction of IB Services

Based on the results of factor analysis (see Table 6.1), the variable of satisfaction of IB services was divided into three dimensions. Therefore, it was decided to separate items A7, A5, and A4 into one group, which measured the *convenience* of using the IB services. The second dimension, which included three items (A6, A3, A1), measured the *time-saving* dimension of IB services. The third dimension, which also

include three items (A9, A2, A8), measured the *fulfilment* dimension of IB services. All loadings were greater than .70. In addition, Cronbach's alpha for convenience, time saving, and fulfilment were 0.78, 0.73 and 0.82 respectively indicating acceptable levels of reliability (Hair et al., 1998).

Table 6.1: Exploratory factor analysis for satisfaction of IB services.

Items	Convenience	Time Saving	Fulfilment
A7. IB services offer self-services	.908		
A5. IB services are reliable effective strongly	.873		
A4. The transactions have low or no cost	.852		
A6. The transactions are done quickly		.929	
A3. IB services provide time saving		.965	
A1. Available 7 days and 24 hours		.810	
A9. Satisfied all my Islamic banking needs			.889
A2. I can access my IB account from anywhere			.863
A8. Satisfied all my banking needs			.762

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
Rotation converged in 2 iterations.

6.2.1.2 Perceived usefulness of IB services

Table 6.2 illustrates the results of the factor analysis; these results confirm that the variable of perceived usefulness of IB services was gathered in one dimension. In addition, the Cronbach's alpha for the perceived usefulness of IB services was 0.81, indicating an acceptable level of reliability (Hair et al., 1998).

Table 6.2: Exploratory factor analysis for perceived usefulness of the IB services.

Items	Component 1
A10. Using IB services enables me to utilize banking services more quickly	.827
A12. Using IB services for my banking services increases my productivity	.819
A14. Using IB services makes it easier for me to utilise banking services	.778
A13. Using IB services enhances my effectiveness of utilising banking services	.736
A11. Using IB services improves my performance utilisation banking services	.719
A15. Overall, IB is useful for me to utilise banking services	.702

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
Rotation converged in 3 iterations.

6.2.1.3 Perceived ease of use of IB services

Based on the results of the factor analysis (see Table 6.3), the variable of perceived ease of use of IB services was divided into two dimensions. Therefore, it was decided

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to separate items A16, A17, A20, and A21 into one type of perceived ease of use of

IB services, which measured the ease of use of IB services. The second dimension,

which included two items (A18 and A19), attempted to measure the interaction with

IB services. The Cronbach's alpha for easiness and interaction was 0.76 and 0.75

respectively, indicating acceptable levels of reliability (Hair et al., 1998).

Table 6.3: Exploratory factor analysis for perceived ease of use of the IB services.

Items	Easiness	Interaction
A17. I find it easy to do what I want to do in IB.	.941	
A21. Overall, I find IB services easy to use.	.911	
A20. It is easy for me to become skilful in the use of IB services.	.838	
A16. Learning to use IB services is easy for me	.698	
A18. My interaction with the use of IB services clear and understandable.		.982
A19 I find IB services to be flexible to interact with		.730

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
Rotation converged in 2 iterations.

6.2.1.4 Security of IB services

The results of the factor analysis in Table 6.4 indicate that the variable of security of

IB services was gathered in one dimension. The Cronbach's alpha for the security of

IB services was 0.84, indicating an acceptable level of reliability (Hair et al., 1998).

Table 6.4: Exploratory factor analysis for security of the IB services.

Items	Component 1
A22. Using IB services is financially secure	.758
A23. I trust the ability of IB services to protect my privacy	.680
A25. I trust in IB services as a bank	.680
A 24. I trust in the technology that IB services	.664
A26. Matters of security have no influence on using IB services	.462

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
1 component extracted.

6.2.1.5 Awareness

The results of factor analysis shown in Table 6.5 indicate that the variable of

awareness of IB services was gathered in one dimension. In addition, the Cronbach's

alpha for awareness of IB services was 0.79, indicating an acceptable level of reliability (Hair et al., 1998).

Table 6.5: Exploratory factor analysis for awareness.

Items	Component 1
A28. I have received enough information about the benefits of IB services.	.743
A27. I have generally received enough information about IB.	.743

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
1 component extracted.

6.2.1.6 Self-efficiency

In Table 6.6, the findings of the factor analysis show that the variable of self-efficiency in using IB services was gathered in one dimension. The Cronbach's alpha for the Self-effeciency of IB services was 0.87, indicating an acceptable level of reliability (Hair et al., 1998).

Table 6.6: Exploratory factor analysis for self-efficiency.

Items	Component 1
A29. I can use IB even if there is no one around to show me how to do it	.463
A30. I can use IB with only the online help function for assistance	.491
A31. I could use IB even if the system were changed	.482

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
1 component extracted.

6.2.1.7 Availability of infrastructure

In Table 6.7, the findings of the factor analysis show that the variable of availability of infrastructure of IB services was gathered in one dimension. Moreover, the Cronbach's alpha for the availability of infrastructure of IB services was 0.78, indicating an acceptable level of reliability (Hair et al., 1998).

Table 6.7: Exploratory factor analysis for availability of infrastructure

Items	Component 1
A2B1. Access to computer	.905
A2B2. Access to internet	.905

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
1 component extracted.

6.3 Testing the hypotheses: factors relating to IB adoption

The hypotheses of this section investigate the relationships between the independent variables (AWARENESS, RESISTANCE TO CHANGE, SELF-EFFICIENCY, INFRASTRCTURE, EASINESS, INTERACTION, COST, SATISFACTION [CONVENIENCE], SATISFACTION [TIME SAVING], SATISFACTION [FULFILMENT], PERCIEVED EASE OF USE [EASINESS], PERCIEVED EASE OF USE [INTERACTION], PERCIEVED USEFULNESS AVAILABILITY OF IsB, AGE, EDUCATION and INCOME) and (ADOPTION). These hypotheses were tested using MR. MR analysis was conducted in order to test the research hypotheses. It identifies how much of the variance in the dependent variable will be explained when several independent variables are theorised to influence it simultaneously. Thus, a MR analysis is conducted, by which the independent (predictor) variables are jointly regressed against the dependent (outcome) variable in an effort to explain the variance in it.

In Table 6.8, the value of R for this model is 0.786, which is an indication that the model provides a good explanation of the observed values of the outcome variable. R^2 is 0.618, which means that the 2 variables included as predictors in the model account for 61.8% of the variation in the adoption of IB services. The adjusted R^2 gives an idea of how well the model generalises and, ideally, it is better if the value of adjusted R^2 is close to the value of R^2. In the case of this model, the value of adjusted R^2 is 0.595, which is very close to R^2.

Table 6.8: Factors influencing adoption of IB services.

Independent variables	Unstandardised coefficients		Standardised coefficients	t-value	Sig.	Tolerance	VIF
	B	Std. E	Beta				
(Constant: ADOPTION)	0.645	0.212	-	3.290	0.012	-	-
AWARENESS	0.385	0.075	0.590	9.877	0.002	0.849	1.177
RESISTANCE	-0.236	0.057	-0.225	-3.978	0.002	0.849	1.177
SELF-EFFICIENCY	0.365	0.122	0.280	3.455	0.020	0.399	2.509
INFRASTRCTURE	0.039	0.101	0.034	0.404	0.740	0.439	2.277
SECURITY	-0.014	0.064	-0.014	-0.443	0.840	0.902	1.108
COST	-0.298	0.083	-0.265	-3.961	0.020	0.699	1.430
SATISFACTION (CONVENIENCE)	0.002	0.000	0.218	8.022	0.020	0.882	1.134
SATISFACTION (TIME SAVING)	0.033	0.040	0.037	1.102	0.450	0.381	2.627
SATISFACTION (FULFILMENT)	0.117	0.042	0.099	3.030	0.010	0.597	1.674
PERCIEVED EASE OF USE (EASINESS)	0.196	0.052	0.170	4.090	0.031	0.348	2.876
PERCIEVED EASE OF USE (INTERACTION)	0.199	0.046	0.146	4.770	0.031	0.629	1.590
USEFULNESS	0.088	0.037	0.054	1.002	0.319	0.566	1.766
IsB AVAILABILITY	0.097	0.031	0.113	3.440	0.008	0.891	1.122
AGE	0.081	0.073	0.049	1.015	0.340	0.701	2.638
EDUCATION	0.072	0.055	0.046	0.980	0.546	0.453	1.985
INCOME	0.111	0.050	0.093	3.155	0.010	0.601	2.359

R = 0.786   R^2 = 0.618   Adjusted R^2 = 0.595   [F = 75.508 Sig.   0.000]   Durbin-Watson = 1.433

It can be seen from Table 6.8 that the F-ratio is 75.508, which is significant (P< 0.05). This indicates that the improvement due to fitting the regression model is much greater than the inaccuracy within the model (Field, 2000).

Reference to the three tests for multicollinearity (see Table 6.8) showed no high correlation values; the VIF showed no values that exceed the generally accepted maximum level of 10 (an indication of high levels of multicollinearity) and the

tolerance values showed no values less than the maximum level of 0.2 (also an indication of high levels of multicollinearity). Thus, no support was found for the existence of a multicollinearity problem.

Finally, the DW test was performed to test if the residuals were correlated. The test indicated a value of 1.433, which is considered to be between the acceptable levels (less than 1 or greater than 3 are deemed to be unacceptable) (Field, 2000). In reference to the regression model test results, Table (6.8), the following hypothesises have been analysed, discussed and presented.

H1: Awareness of IB services will have a positive relationship with adoption of IB services.

The model has confirmed the significant contribution of awareness in explaining IB services adoption. It was shown in Table 6.8 that the results of MR in relation to hypothesis 1 reveal that awareness (AWARENESS) has a significant relation with the IB service adoption (ADOPTION) with a beta of 0.590 (t-value = 9.877). Thus, the findings of the regression model indicate that research hypothesis 1, which predicts a positive direct relationship between the awareness and IB service adoption, is supported at the 0.05 significance level. Therefore, this hypothesis is fully accepted.

Awareness basically refers to the degree of familiarity people have with IB. In hypothesis 1, it has been shown that the awareness level has a positive relationship with IB service adoption. Sathye (1999) found that the degree of IB service adoption is influenced by levels of awareness. The study conducted by Singer et al. (2001) confirmed these regression results in which IB service adoption in western countries resulted from high levels of awareness.

The earlier results, however, agree with the empirical findings provided by Rotchanakitumnuai and Speece (2003), in which IB service adoption was found to be influenced largely by awareness, implying that recent media coverage has had an important role to play in raising awareness in western countries. The empirical work provided by Maenpaa et al. (2007), in which they examined the relationship of the users' knowledge with the IB service adoption, found that IB service adoption is related to awareness.

The aforementioned results also agree with the argument of Laforet and Li (2005), in which lack of adoption of IB services is often related to the amount of available information and knowledge. As a result, it can be concluded that awareness has a relationship with the extent of IB service adoption within the study area.

H2: Resistance to change in banking channels will have a negative relationship with IB adoption.

The statistics relating to research hypothesis 2 reveal that resistance to change (RESISTANCE) has a significant relationship with IB service adoption (ADOPTION), with a beta of -0.225 (t-value = -3.978). Thus, the findings of the regression model indicate that research hypothesis 2, which predicts a negative direct relationship between resistance to change and IB service adoption, is supported at the 0.05 significance level. Therefore, the hypothesis is fully accepted.

The above result indicates that resistance to change in banking channels has a negative relation with the IB service adoption. It has been argued that today's global competitive banks require an improved quality of banking channels with a focus on the customers. These conditions require a banking enterprise to concentrate more on continuous improvements in terms of their activities. An important issue relating to

improvements is banking channels, which are considered to be an important component of banking practices in the quest to simplify the acceptance of IB services, and interaction with the continuous upkeep of the quality of IB services (Polatoglu and Ekin, 2001).

Resistance to change in banking channels is a prominent issue that many banks are confronting (Alagheband, 2006). It has been argued that improvement initiatives have influenced the inclusion of banking performance. In this context, Sathye (1999) provided evidence from Australia that the adoption of IB services was matched with the resistance to change. As part of his study in developed countries, Al-Somali et al. (2008) also found that resistance to any change in the normal banking channels affected the adoption of IB services negatively. In the empirical work by Daniel (1999), it was found that the new banking applications were strongly associated with resistance to change in the UK. Based on the above arguments and findings, it can be concluded that resistance to change the banking channels plays a major role in the adoption of IB services.

H3a: Self-efficiency will have a positive relationship with the adoption of IB services.

As shown in Table 6.8, the statistics relating to hypothesis 3a reveal that self-efficiency in using IB services has a significant positive relation with IB service adoption, with a beta of 0.280 (t-value = 3.455) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 3a, which predicts a positive direct relationship between self-efficiency and the adoption of IB service, is supported at the 0.05 significance level. Therefore, the hypothesis is fully accepted.

The above direct results imply that self-efficiency in using IB services has a positive relation with adoption of IB services. Bandura (1977) defined self-efficiency as one's belief or judgement in what one can do with the skill one possesses within a particular domain. The result indicates that the respondents' self-efficiency in adopting IB services should be complemented by banks' efficiency in order to increase the usage of IB services (Pituch and Lee, 2006). This result may be justified based on the idea that self-efficiency is expected to increase banks' flexibility to do what they deem appropriate to meet the specified goals, and in turn, increase their capacities (Wang et al., 2003).

H4a: Availability of IB infrastructure will have a positive relationship with the adoption of IB services.

As shown in Table 6.8, the statistics relating to hypothesis 4a reveal that the availability of infrastructure has no significant effect on IB service adoption, with a beta of 0.034 (t-value = 0.404). Thus, the findings of the regression model indicate that hypothesis 4a, which predicts a direct positive relationship between the availability of infrastructure and the adoption and use of IB services, were not supported at the 0.05 significance level. Therefore, hypothesis 4a is fully rejected.

The above direct results do not support the direct relationship between the availability of infrastructure and IB service adoption in SA. Interpretation of this contradictory result is not easy, taking into consideration that previous empirical studies (Daniel, 1999; Sathye, 1999) have confirmed the positive relationship between the availability of infrastructure and IB service adoption. In contrast, other empirical studies (Pikkarainen et al., 2004) have found a relationship between the availability of infrastructure and IB service adoption.

H5a: High security will have a positive relationship with the adoption of IB services.

As shown in Table 6.8, the statistics relating to hypothesis 5a reveal that the security of IB services has no significant effect on IB service adoption, with a beta of -.014 (t-value = -0.443). Thus, the findings of the regression model indicate that hypothesis 5a, which predicts a direct negative relationship between the security of IB services and IB service adoption was not supported at the 0.05 significance level. Therefore, hypothesis is fully rejected.

The research findings do not support the direct relationship between high security and IB service adoption. Similarly, Karjaluoto et al. (2002) showed that security concerns are not among the greatest obstacles to adopting IB. In contrast with the research's' findings, Lee (2009) found that adopting the OB is adversely affected mainly by the security/privacy risk, as well as financial risk". This contradiction has been supported by another recent study conducted by Hua (2009) regarding OB acceptance in China. Hua (2009) showed that security is the most important factor influencing user's adoption.

The positive and non-significant result that emerged may be justified based on the fact that today, security differs from one country to another and from one bank to another. This may create differences in people's perspectives from one country to another. In SA, the government has established a very restricted internet law and legislation with a filtering system in order to protect the culture and financial systems of Saudi Arabian customers and the different Islamic values. With regards to that, Hermida (2002), reported that there were 2,000 blocked sites by the Saudi government and,

according to O'Connell (2008), this reached 400,000 sites in 2008, and this might resulted to minimize the customer's security fears when adopting the IB.

H6a: High costs will have a negative relationship with the adoption of IB.

Table 6.8 shows the statistics relating to hypothesis 6a. The results reveal that the high cost of IB services has a significant negative relation with IB service adoption, with a beta of -0.265 (t-value = -3.961) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 6a, which predicts a negative direct relationship between the high cost of IB services and IB service adoption is supported at the 0.05 significance level. Therefore, the hypothesis is fully accepted.

The regression result suggests that cost has a negative relation with IB service adoption. The literature on the cost of IB service adoption and IB use supports these results in which the adoption of IB services is associated with cost strategy (Sathye, 1999). It has been argued that cost choices negatively affect the adoption of IB services (Daniel, 1999). On the other hand, the above result confirms that a low cost strategy attracts people to the adoption of IB services. Therefore, IB service adoption should complement the cost of activities (Sathye, 1999).

H7a: Satisfaction will have a positive relationship with the adoption of IB.

Customer satisfaction is defined by Solomon (2010), as the overall customer's feelings about a product/ service after they bought it. Kotler and Keller (2009) have also defined customer satisfaction as a person's feelings of pleasure or disappointment that result from comparing a product's perceived performance to their expectations. The user satisfaction can be seen sum of user's feeling and attitudes toward several factors that affect the usage situation (Bailey et al., 1983). From the customer's perspective, IB facilities represent an effective approach to managing personal

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finances, as they are accessible 24 hours a day and 365 days a year from any location and without the need to visit the bank (Rotchanakitumnuai and Speece, 2003). Based on the results of the factor analysis (see Table 6.1), the variable of satisfaction of IB services is divided into three components: the first is the convenience of IB services, second is time saving when using IB services and the third is fulfilment of customer's needs with IB services. Therefore, this hypothesis is divided into three sub-hypotheses: 7.1a, 7.2a and 7.3a.

H7.1a: Convenience will have a positive relationship with the adoption of IB.

Table 6.8 shows the statistics relating to hypothesis 7.1a. The results reveal that the convenience of IB services has a significant positive relation with IB service adoption, with a beta of 0.218 (t-value = 8.022) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 7.1a, which predicts a positive direct relationship between the convenience of IB services with IB service adoption is supported at the 0.05 significance level. Thus, the hypothesis is accepted.

Pew (2003) defined convenience in terms of lifestyle, workplace/housebound use, not having to travel, personal safety, and not having to wait. Depending on the context, studies demonstrate different approaches to end-user satisfaction research. Szymanski and Hise (2000) supported the research findings and revealed that convenience, site design and product information have the most important relationship with satisfaction respectively when adopting IB.

H7.2a: Time saving will have a positive relationship with the adoption of IB.

Table 6.8 shows the statistics relating to hypothesis 7.2a. The results reveal that saving time by using IB services has no a significant positive relation with IB service

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adoption, with a beta of 0.037 (t-value = 1.102). Thus, the findings of the regression model indicate that research hypothesis H7.2a, which predicts a positive direct relationship between saving time and IB service adoption is not supported at the 0.05 significance level. Therefore, the sub-hypothesis is rejected.

Interpreting the contradictory results is somewhat difficult, taking into consideration that earlier studies confirmed the positive relationship between time saving in IB services and the adoption of IB services (Polatoglu and Ekin, 2001). In parallel with findings of this study, an empirical study conducted by (Khan, 2004) revealed that time saving in IB services has no relation with the adoption of IB services.

H7.3a: Fulfilment will have a positive relationship with the adoption of IB.

Table 6.8 shows the statistics relating to hypothesis 7.3a. The results reveal that fulfilment with IB services has a significant positive relation with IB service adoption, with a beta of 0.099 (t-value = 3.030) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis H7.3a, which predicts a positive direct relationship between customers' needs fulfilment with IB services adoption, is supported at 0.05 significance level. Thus, the sub-hypothesis is accepted.

The above results indicate that customers' needs fulfilment with IB services has a positive effect on the IB adoption. Customer's needs fulfilment with IB services involves a philosophy emphasising excellence through continuous improvements in IB services (Polatoglu and Ekin, 2001). It has been argued in the literature that banking systems should be designed according to the characteristics of clients to fulfil his needs when adopting the IB (Amin, 2007; Lee, 2009).

From the previous results of sub-hypotheses (7.1b, 7.2b, and 7.3b), it can be generally concluded that the satisfaction of IB services has a positive effect on the IB services adoption. Therefore, hypothesis 7a is partially accepted.

H8a: Perceived ease of use will have a positive relationship with the adoption of IB.

Perceived ease of use was defined by Davis (1989) as the degree to which a person believes that using a particular system would be free of effort. Due to that and based on the results of the factor analysis (see Table 6.3), the variable of perceived ease of use of IB services is divided into two components: the first is ease of use of IB services, and the second is interaction with IB. Therefore, this hypothesis should be divided into two sub-hypotheses: H8.1a and H8.2a.

H8.1a: Ease of use of IB services will have a positive relationship with the adoption of IB.

According to Table 6.8, the statistics relating to hypothesis 8.1a reveal that ease of use of IB services has a significant positive effect on IB service adoption, with a beta of 0.170 (t-value = 4.090) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 8.1a, which predicts a positive direct relationship between ease of use of IB services and IB service adoption is supported at the 0.05 significance level. Therefore, the sub-hypothesis is accepted.

In line with this study finding, Cooper (1997) revealed that "ease of adoption" as one of the three important characteristics from the customer's perspective for adoption of innovative service. Daniel (1999) identifies "ease of use" as one of the factors for customer acceptance in her study of e-banking in the UK and Ireland. In Australia, if customers are not adopting IB, it could be because the Internet sites are not easy to

operate (Sathye, 1999). In addition to that, Wang et al. (2003) in Taiwan extended TAM model and found evidence that perceived ease of use had a significant positive effect on people's intention to adopt IB.

H8.2a: Interaction will have a positive relationship with the adoption of IB.

Table 6.8 shows the statistics relating to hypothesis 8.2a. The results reveal that interaction with IB services has a significant positive relation with IB service adoption, with a beta of 0.146 (t-value = 4.770) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 8.2b, which predicts a positive direct relationship between interaction with IB services and IB service adoption, is supported at the 0.05 significance level. Therefore, the sub-hypothesis is accepted.

The literature supports the idea that interaction with IB services is associated with a greater adoption of IB services. Interaction with IB services relates to the ability to achieve and sustain a continuous improvement through customer satisfaction (Guozheng et al., 2007). Empirical work by Polatoglu and Ekin (2001) supported the proposition that, one of the important initiatives that encourages the adoption of IB services; is interaction with IB services. Moreover, Casalo et al. (2008) found that IB customers are more likely to adopt an IB if prior web site interactions were satisfactory. From the regression results of the two sub-hypotheses (8.1a and 8.2a), it can be generally concluded that perceived ease of use IB services has a positive effect on the adoption of IB services. Therefore, hypothesis 8a is fully accepted.

H9a: Perceived usefulness will have a positive relationship with the adoption of IB.

According to Table 6.8, which relate to hypothesis 9a, the findings show that perceived usefulness of IB services has no significant positive relation with IB service adoption, with a beta of 0.054 (t-value = 1.002). Thus, the findings of the regression model indicate that research hypothesis 9a, which predicts a positive direct relationship between perceived usefulness of IB services with IB service adoption is not supported at the 0.05 significance level. Therefore, the hypothesis is fully rejected.

The literature on IB services contradicts the regression result. A possible explanation for the non-significant relationship is that the investment in IB systems might be more costly when it cannot be clearly demonstrated to the customers. With regards to that, the aforementioned results contradict with the findings that emerged in the study of Al-Somali et al. (2008), in which the intensity of the perceived usefulness dimensions were found to affect the extent of the adoption of IB services.

H10a: The availability of IsB will have a positive relationship with the adoption of IB services.

Table 6.8 illustrate the statistics relating to hypothesis 10a. The results show that the availability of IsB of IB services has a significant positive relation with IB service adoption, with a beta of 0.113 (t-value = 3.440) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 10a, which predicts a positive direct relationship between the availability of IsB of IB services and IB service adoption, IB use, and IB success, is supported at the 0.05 significance level. Therefore, the hypothesis is fully accepted.

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The literature on IB supports the above result in which the adoption of IB services are significantly associated with larger Islamic banks in SA. It has been argued that the possible reason for the positive relationship between the availability of IsB in IB services and IB adoption is the larger Islamic banks have relatively more resources to use IB systems (Zainuddin et al., 2004).

H11a: Old age will have a negative positive relationship with the adoption of IB.

According to Table 6.8, which relate to hypothesis 11a, the findings show that age has no significant relation with IB service adoption, with a beta of 0.049 (t-value = 1.015). Thus, the findings of the regression model indicate that research hypothesis 11a, which predicts a negative direct relationship between age and IB service adoption is not supported at the 0.05 significance level. Therefore, the hypothesis is rejected.

The findings of the regression model imply that age has no significant relation with IB service adoption. It was argued in the literature that the extent of adoption of IB is relatively different from one age group to another (Akinci et al., 2004). The result in of this study is supported by Al-Somali et al. (2008), who found also that age has no effect on the adoption of IB. Therefore, it can be concluded that the adoption of IB services in Saudi banks is not related to age groups therefore this hypothesis is rejected.

H12a: High educational level will have a positive relationship with the adoption of IB services.

According to Table 6.8, which relate to hypothesis 12a, the findings show that education has no significant relation with IB service adoption, with a beta of 0.046 (t-value = 0.980). Thus, the findings of the regression model indicate that research

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hypothesis 12a, which predicts a positive direct relationship between education and IB service adoption is not supported at the 0.05 significance level. Therefore, the hypothesis is rejected.

The literature on IB services contradicts the above results in which the level of education is necessary for coping with the adoption of IB. Empirically, Alagheband (2006) found educational level had a positive relation with the adoption of IB services. It has been argued that education is crucial not only to track the banking performance but that education increases a customer's satisfaction and innovation, which is essential to achieve an increase in the adoption of IB services (Al-Somali et al., 2008). In addition to that, other researchers revealed that customers' education levels were found positively play a vital role in their adoption of the other channels of the e-banking services (Al-Ashban and Burney, 2001; Poon, 2008). Therefore, the hypothesis is rejected.

H13a: High income of the users will have a positive relationship with the adoption IB services.

According to Table 6.8 which relate to hypothesis 13a, the findings show that income has a significant relation with IB service adoption, with a beta of 0.093 (t-value = 3.155). Thus, the finding of the regression model indicate that research hypothesis 13a, which predicts a positive direct relationship between income and IB service adoption is supported at the 0.05 significance level. Therefore, the hypothesis is accepted.

These results imply that income level in SA leads to high degrees of IB service adoption. The literature on income supports these results in which the adoption of IB services are often associated with the level of income (Alagheband, 2006). In line

with the finding of this study, and empirical findings reported by Lai and Li (2005) indicate that there is a relationship between level of income and continuous IB services, which supports the regression result. Thus, this hypothesis is fully accepted.

In reference to the previous paragraph analysis and the regression model test results, presented in Table 6.8, the following research Adoption model has been developed and concluded as shown in Figure (6.1).
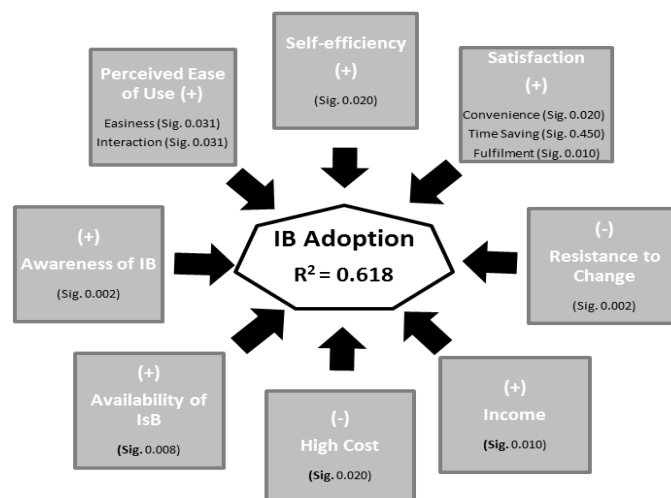
Figure 6.1: The relations between the statistical significant factors and the IB adoption.

6.4 Testing the hypotheses: factors relating to the IB use

The hypotheses of this section investigate the relationships between the independent variables (SELF-EFFICIENCY, INFRASTRCTURE, EASINESS, INTERACTION, COST, SATISFACTION [CONVENIENCE], SATISFACTION [TIME SAVING], SATISFACTION [FULFILMENT], PERCIEVED EASE OF USE [EASINESS], PERCIEVED EASE OF USE [INTERACTION], PERCIEVED USEFULNESS AVAILABILITY OF IsB, AGE, EDUCATION, INCOME, AND ADOPTION) and the dependent variables (USE). These hypotheses were tested using MR. Table 6.9 shows the results of the MR of these hypotheses in detail.

Independent variables	Unstandardised coefficients		Standardised coefficients	t-value	Sig.	Tolerance	VIF
	B	Std. E	Beta				
(Constant: USE)	0.555	0.157	-	3.372	0.015	-	-
SELF-EFFICIENCY	0.453	0.156	0.268	3.309	0.031	.399	2.509
INFRASTRCTURE	0.097	0.129	0.065	1.065	0.687	.439	2.277
SECURITY	-0.131	0.083	-0.011	-1.887	0.216	.902	1.108
COST	-0.248	0.107	-0.172	-2.554	0.031	.699	1.430
SATISFACTION (CONVENIENCE)	0.057	0.058	0.230	6.780	0.001	0.882	1.134
SATISFACTION (TIME SAVING)	0.081	0.030	0.111	4.455	0.020	0.381	2.627
SATISFACTION (FULFILMENT)	0.116	0.037	0.106	3.155	0.031	0.597	1.674
PERCIEVED EASE OF USE (EASINESS)	0.177	0.022	0.095	3.280	0.031	0.348	2.876
PERCIEVED EASE OF USE (INTERACTION)	0.169	0.043	0.157	4.227	0.000	0.629	1.590
USEFULNESS	0.131	0.029	0.044	0.713	0.910	0.566	1.766
IsB AVAILABILITY	0.091	0.039	0.141	4.409	0.001	0.891	1.122
AGE	0.107	0.037	0.047	0.780	0.840	0.701	2.638
EDUCATION	0.122	0.044	0.055	0.980	0.550	0.453	1.985
INCOME	0.160	0.039	0.145	3.854	0.010	0.601	2.359
ADOPTION	0.350	0.057	0.264	7.475	0.001	0.382	1.076

R = 0.628 R^2 = 0.394   Adjusted R^2 = 0.387   [F = 65.252 Sig.   0.000]   Durbin-Watson = 1.653

Table 6.9: Factors influencing IB services use

In Table 6.9, the value of R for this model is 0.628, which is an indication that the model provides a good explanation of the observed values of the outcome variable. As the value of R^2 means that the 4 variables included as predictors in the model account for 39.4% of the variation in the adoption of IB services. The adjusted R^2, which is 0.387, is close to the value R^2.

It can be seen from Table 6.9 that the F-ratio, which is 65.252, is significant (P< 0.05). According to the tolerance values and VIC values, no support was found for the existence of any multicollinearity problem. Finally, the DW test indicated a value of

1.653, which is considered to be between the acceptable levels. Therefore, this study's sample appears to conform what is expected for a fairly accurate model. In the following, the tested hypothesises have been analysed, discussed and presented in the next paragraphs.

H3b: Self-efficiency will have a positive relationship with the use of IB services.

As shown in Table 6.9 the statistics relating to hypothesis 3b show that self-efficiency in using IB services has a significant positive relation with IB use with a beta of 0.268 (t-value = 3.309) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 3b, which predicts a positive direct relationship between self-efficiency in using IB services and the IB use, is supported at the 0.05 significance level. Therefore, the hypothesis is fully accepted.

This finding suggests that self-efficiency in using IB services has a positive relation with IB use. Users generally expressed confidence in their ability to use the internet - a confidence acquired from multiple positive experiences and acquired familiarity with the internet channel (Lichtenstein and Williamson, 2006). Other researchers (Venkatesh and Davis, 1996; Wang et al., 2003; Lassar et al., 2005) supported this finding and suggested that individuals with high computer self-efficiency are expected to be able to use computer systems more regularly because they feel "comfortable" about computers, in contrast with those with a low "strength" of self-efficiency.

H4b: Availability of IB infrastructure will have a positive relationship with the use of IB services.

As shown in Table 6.9, the statistics relating to hypothesis 4b show that the availability of infrastructure has no significant relation with IB use, with a beta of 0.065 (t-value = 1.065). Thus, the findings of the regression model indicate that

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hypothesis 4b, which predicts a direct positive relationship between the availability of infrastructure and the adoption and use of IB services, were not supported at the 0.05 significance level. Therefore, this hypothesis is fully rejected.

This finding does not support the direct relationship between the availability of infrastructure and IB service use. This result was not expected since it contradicts the literature, which places an emphasis on the relationship between the availability of infrastructure and IB service use (Sathye, 1999). However, the above result may be justified based on Nath et al.'s (2001) argument that not all infrastructure measurements are applicable to IB services use. In general, the results that emerged from testing the hypothesis has shown unexpected findings; thus, it can be noted that this result is consistent with Sathye's (1999) argument that the effect of the availability of infrastructure on IB service use is controversial and unclear.

H5b: High security will have a positive relationship with the use of IB services.

As shown in Table 6.9, the statistics relating to hypothesis 5b shows that the security of IB services has no a significant relation with IB use, with a beta of -0.011 (t-value = -1.887). Thus, the findings of the regression model indicate that hypothesis 5b, which predicts a direct negative relationship between the security of IB services and both IB service adoption and IB use, were not supported at the 0.05 significance level. Therefore, the hypothesis is fully rejected.

This result does not support the direct relationship between high security and the IB use. In contradiction with the finding of this study, Yousafzai et al. (2003) highlighted the positive importance of security and privacy as two distinct analytical concepts, when using the IB services. Moreover, the e-commerce usage has been found significantly influenced by customer's perception about the level of security control

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that website has. Salisbury et al. (2001) also found that perceived security is a much stronger determinant when using the online purchasing than the perceived ease of use and usefulness of the website. Likewise, Miyazaki and Fernandez (2001) showed that the rate of using the online product purchase is closely related to the perceived security control possessed by a website.

Interpreting this contradiction; it might be due to the fact that Saudi customers' use the internet mostly for conservative tasks such as communication; therefore, the security concerns do not affect the customers' attitudes when using IB services (Shafi, 2002). In addition to that, Mahdi (2011) revealed how Saudi banks' customers had very high trust in using the e-banking services and strongly believed that e-banking services are more secure.

H6b: High costs will have a negative relationship with the use of IB services.

Table 6.9 shows the statistics relating to hypothesis 6b. The result shows that high cost of IB services has a significant negative relation with IB use, with a beta of -0.172 (t-value = -2.554) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 6b, which predicts a negative direct relationship between the high cost of IB services and IB use is supported at the 0.05 significance level. Therefore, the hypothesis is fully accepted.

The above direct results imply that cost has a negative relation with IB service use. The literature on the cost of IB service use supports this result and agrees with the view of Polatoglu and Ekin (2001) that the cost strategy has to be adjusted to the business strategy, and a low cost strategy also encourages people to use IB services. In this context, the Wallis Report (1997) concluded that customers use new technology if it is reasonably priced. It has also been argued that many banks monitor

the efficiency and effectiveness of IB service use as a means of advancing competitiveness and managing cost (Cooper, 1997).

H7b: Satisfaction will have a positive relationship with the use of IB services.

Based on the results of the factor analysis (see Table 6.1), the variable of satisfaction of IB services is divided into three components: the first is the convenience of IB services, second is time saving when using IB services and the third is fulfilment of customer's needs with IB services. Therefore, this hypothesis is divided into three sub-hypotheses: H7.1b, H7.2b and H7.3b.

H7.1b: Convenience will have a positive relationship with the use of IB services.

Table 6.9 shows the statistics relating to hypothesis 7.1b. The result indicates that the convenience of IB services has a significant positive relation with IB use, with a beta of 0.230 (t-value = 6.780) at the 0.05 significance level. Thus, the findings of the regression model indicate that research sub-hypothesis 7.1b, which predicts a positive direct relationship between the convenience of IB services with the use of IB service, is supported at the 0.05 significance level. Therefore, the sub-hypothesis is accepted.

The results of this study show that the convenience of IB services contributes to the use of IB services. This finding is consistent with Polatoglu and Ekin's (2001) argument that the convenience of IB services contributes to the use of IB services, and with the findings of the study by Pikkarainen et al. (2004), in which he indicated that the convenience of IB services contributes to the usage and success of IB services.

H7.2b: Time saving will have a positive relationship with the use of IB services.

Table 6.9 shows the statistics relating to hypothesis 7.2b. The findings reveal that time saving in IB services has a significant positive relation with IB use, with a beta of

0.111 (t-value = 4.455) at the 0.05 significance level. Thus, the findings of the regression model indicate that research sub-hypothesis 7.2b, which predicts a positive direct relationship between saving time by using IB services with the use IB service, is supported at the 0.05 significance level. Therefore, the sub-hypothesis is accepted.

Surprisingly, the regression results showed inverse and non-significant results for time saving in IB services regarding the adoption of IB services, while time saving in IB services was found to have a positive and significant relation with the extent of the usage of IB services. Thus, sub-hypothesis 7.2b was supported for the effect of time saving in the use of IB services. The regression results imply that time saving in IB services has a positive relation with the usage of the IB services. In common with this study, previous empirical studies have found that time saving in IB services was a significant variable. For instance, Kassim (2006) reported that time saving in IB services is positively associated with the use of IB services. In addition to that, recent literature supported the research findings that time saving in IB services increases the usage rates of IB services (Adesina and Ayo, 2010).

H7.3b: Fulfilment will have a positive relationship with the use of IB services.

Table 6.9 shows the statistics relating to hypothesis 7.3b. The results reveal that customers' needs fulfilment with IB services has a significant positive effect on IB use, with a beta of 0.106 (t-value = 3.155) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 7.3b, which predicts a positive direct relationship between customers' needs fulfilment with IB services and IB service use is supported at the 0.05 significance level. Therefore, the sub-hypothesis is accepted.

The regression results indicate that customers' needs fulfilment with IB services has a positive relation with the extent of the IB usage. In the empirical work by Pikkarainen et al. (2004), customer's needs fulfilment with IB services was strongly associated with the use and success of IB services. Thus, it can be concluded that customer's needs fulfilment with IB services plays a major role in using more IB services (DeLone & McLean, 2003).

From the previous results of sub-hypotheses (H7.1b, H7.2b, and H7.3b), it can be generally concluded that the satisfaction of IB services has a positive effect on the use of IB services. Therefore, hypothesis 7b can be considered fully accepted.

H8b: Perceived ease of use will have a positive relationship with the use of IB.

As highlighted earlier and based on the results of the factor analysis (see Table 6.3), the variable of perceived ease of use of IB services is divided into two components: the first is ease of use of IB services, and the second is interaction with IB. Therefore, this hypothesis should be divided into two sub-hypotheses: H8.1b and H8.2b.

H8.1b: Easiness of IB services will have a positive relationship with the use of IB.

According to Table 6.9, the statistics relating to hypothesis 8.1b show that easiness of IB services has a significant positive effect on IB use, with a beta of 0.095 (t-value = 3.280) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 8.1b, which predicts a positive direct relationship between ease of use of IB services and IB use is supported at the 0.05 significance level. Therefore, the sub-hypothesis is accepted**.**

In the empirical work, conducted by Agarwal and Karahanna (2000) argued that the easiness of IB services associated with the use and success of IB services. Also, the

longer an individual has been using IB, the more likely he is to find it easy to use and then will lead to the IB services success (Prompattanapakdee, 2009). Similarly, the easier it is for a user to interact with a system, the more likely it is that he or she will find it useful.

H8.2b: Interaction will have a positive relationship with the use of IB services.

Table 6.9 shows the statistics relating to hypothesis 8.2b. The regression results reveal that interaction with IB services has a significant positive effect on IB use with a beta of 0.157 (t-value = 4.227) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 8.2b, which predicts a positive direct relationship between interaction with IB services and the use of IB service is supported at the 0.05 significance level. Therefore, the sub-hypothesis is accepted.

The literature on IB supports the above result, in which interaction with IB services has a positive relation with the extent of IB service adoption. It has been argued that today's banking environment can be characterised by intensified competition, market changes and high customer demand. These conditions require a bank to focus more on customers' continuous interaction with IB services (Kassim, 2006). The interaction with IB services concept is consistent with the increasing use of IB services (Guozheng et al., 2007). In general, it can be concluded from the two sub-hypothesis (H8.1b and H8.2b) that perceived ease of use IB services has a positive effect on the usage of IB services and therefore hypothesis H8b is fully accepted.

H9b: Perceived usefulness will have a positive relationship with the use of IB.

According to Table 6.9, which relate to hypothesis 9b, the findings show that perceived usefulness of IB services has no significant positive effect on IB use, with a beta of 0.044 (t-value = 0.713) at the 0.05 significance level. Thus, the findings of the

regression model indicate that research hypothesis 9b, which predicts a positive direct relationship between perceived usefulness of IB services with IB service use is not supported at the 0.05 significance level. Therefore, this hypothesis is rejected.

Surprisingly, the literature on IB services contradicts the above result. In this context, Pikkarainen et al. (2004) argued that IB services are used more when the level of perceived usefulness of IB services is high. Furthermore, this result is not consistent with the empirical work by Lai and Li (2005), who found that banks implementing the IB services as they perceived the usefulness of the service. Interpreting this contradictory result is not an easy task, given that earlier studies confirmed the relationship between perceived usefulness of IB services and use of IB services (Agarwal and Karahanna, 2000; Venkatesh and Davis, 2000).

H10b: The availability of IsB will have a positive relationship with the use of IB.

Table 6.9 illustrates the statistics relating to hypothesis 10b. The result reveals that the availability of IsB of IB services has a significant positive relation with IB use, with a beta of 0.141 (t-value = 4.409) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 10b, which predicts a positive direct relationship between the availability of IsB of IB services and IB service use is supported at the 0.05 significance level. Therefore, the hypothesis is accepted.

As this result is significant with a positive direction, it can be concluded that Islamic banks have more abilities and capabilities to deal with IB services in SA. Thus, it can be concluded that Islamic banks are likely to make more use of IB services. With regards to that, the aforementioned result is similar to the findings that emerged in the study of Metwally (1996) and that of Al-Sultan (1999).

H11b: Old age will have a negative relationship with the use of IB services.

According to Table 6.9, which is related to hypothesis 11b, the findings show that age has no significant effect on IB use, with a beta of 0.047 (t-value = 0.780) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 11b, which predicts a negative direct relationship between age and IB service IB use is not supported at the 0.05 significance level. Therefore, the hypothesis is rejected.

The findings of the regression result found that the age of the IB customers have no significant relation with the extent of IB usage. This finding is in a conflict with the literature as the use of IB services is associated with the age of customers. Therefore, it can be concluded that the extent of use of IB services in Saudi banks is also not related to age. The aforementioned result is in line with Akinci et al.'s (2004) findings in Turkey which shows that middle-aged consumers are more likely than younger or older consumers to use IB. Moreover, it should be noted that the aforementioned results partially contradict the findings that emerged in the other e-banking studies of Al-Ashban and Burney (2001) and Karjaluoto et al. (2002) in which different age groups were found to affect the extent of the use of IB services.

H12b: High educational level will have a positive relationship with the use of IB.

According to Table 6.9 which is related to hypothesis 12b, the finding show that education has no significant effect on IB use, with a beta of 0.055 (t-value = 0.980) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 12b, which predicts a positive direct relationship between education and IB service use is not supported at the 0.05 significance level. Therefore, the hypothesis is rejected.

The literature on IB services contradicts with the regression result of this study as Polatoglu and Ekin (2001) and Howcroft et al. (2002) higher educated customers are positively related to the usage of the e-banking. Moreover, other literature found that customers who are educated are more likely to use IB (e.g. Sathye, 1999; Mattila et al., 2003).

H13b: High income of the users will have a positive relationship with the use IB.

According to Table 6.9 finding, which is related to hypothesis 13b, shows that income has a significant effect on IB use, with a beta of 0.145 (t-value = 3.854) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 13b, which predicts a positive direct relationship between income and IB service adoption, IB use, and IB success, is supported at the 0.05 significance level. Therefore, the hypothesis is fully accepted.

These results imply that individuals' decisions with respect to IB services usage are significantly influenced by the level of income. Eastin (2002) confirms that income has a large relation with people's decision to use or not to use of the IB services. According to Al-Somali et al. (2008), as a result of a lack of income, people in developing countries encounter problems in accessing the internet. Based on these results and this argument, it can be concluded that high income has led to the high degree of IB services use in SA, which support this regression result.

H14: Adoption of IB services will have a positive relationship with the use of IB.

According to Table 6.9, which relate to hypothesis 14, the findings show that the adoption of IB services has a significant relation with the use IB, with a beta of 0.264 (t-value = 7.475). Thus, the findings of the simple regression model indicate that research hypothesis H14, which predicts a positive direct relationship between the

adoption of IB services and the use of IB is supported at the 0.05 significance level. Therefore, the hypothesis is accepted.

The regression result is supported by literature as customers' experience when adopting the IB is positively associated with usage of the IB (Al-Ashban and Burney, 2001; Al-Gahtani et al., 2007). The greater adoption of IB leads to a more usage of IB (e.g. Sathye, 1999; Al-Gahtani et al., 2007). Literature was found supporting the regression findings and therefore the hypothesis can be accepted.

From the previous paragraphs and in reference to the Use regression model test results, presented in Table (6.9), the following research Use model has been concluded as shown in Figure (6.2).
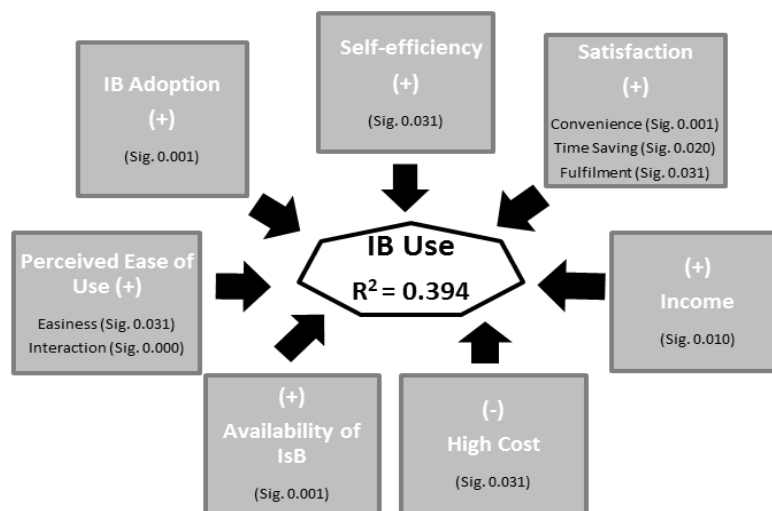
Figure 6.2: The relations between the statistical significant factors and the IB use.

6.5 Testing the hypotheses: factors relating to IB success

The hypotheses of this section investigate the relationships between the independent variables (SATISFACTION [CONVENIENCE], SATISFACTION [TIME SAVING], SATISFACTION [FULFILMENT], PERCIEVED EASE OF USE [EASINESS], PERCIEVED EASE OF USE [INTERACTION], PERCIEVED USEFULNESS

AVAILABILITY OF IsB, AGE, EDUCATION, INCOME and USE) and dependent variables (SUCCESS). These hypotheses were tested using MR. Table 6.10 shows the results of the MR of these hypotheses in detail.

Independent variables	Unstandardised coefficients		Standardised coefficients	t-value	Sig.	Tolerance	VIF
	B	Std. E	Beta				
(Constant: SUCCESS)	0.501	0.101	-	3.207	0.020	-	-
SATISFACTION (CONVENIENCE)	0.065	0.093	0.277	8.450	0.002	0.882	1.134
SATISFACTION (TIME SAVING)	0.077	0.069	0.131	3.870	0.020	0.381	2.627
SATISFACTION (FULFILMENT)	0.121	0.029	0.108	2.990	0.010	0.597	1.674
PERCIEVED EASE OF USE (EASINESS)	0.184	0.041	0.047	0.855	0.910	0.348	2.876
PERCIEVED EASE OF USE (INTERACTION)	0.178	0.031	0.154	4.550	0.002	0.629	1.590
USEFULNESS	0.126	0.057	0.040	0.122	0.891	0.566	1.766
IsB AVAILABILITY	0.077	0.027	0.133	4.208	0.008	0.891	1.122
AGE	0.117	0.058	0.035	0.115	0.740	0.701	2.638
EDUCATION	0.109	0.031	0.029	1.110	0.698	0.453	1.985
INCOME	0.186	0.020	0.163	4.561	0.008	0.601	2.359
Use	0.374	0.045	0.291	8.934	0.015	0.780	1.283

R = 0.546   R^2 = 0.298   Adjusted R^2 = 0.294   [F = 37.472 Sig.   0.000]   Durbin-Watson = 1.706

Table 6.10: Factors influencing IB service success.

Table 6.10 indicates that the value of R for this model is 0.546, which is an indication that the model provides a good explanation of the observed values of the outcome variable. R^2 means that the 10 variables included as predictors in the model account for 29.8% of the variation in the adoption of IB services. The adjusted R^2, which is 0.294, is close to the value R^2.

It can be noted from Table 6.10 that the F-ratio, which is 37.472, is significant (P<
0.05). According to the tolerance values and the VIC values, no support was found for
the existence of any multicollinearity problems. Finally, the DW test indicated a value
of 1.706, which is considered to be between the acceptable levels. Thus, this study's
sample appears to conform what is expected for a fairly accurate model. Therefore,
the following research tested hypotheses have been analysed, discussed and presented
in the next paragraphs.

H7c: Satisfaction will have a positive relationship with the success of IB services.

Based on the results of the factor analysis (see Table 6.1), the variable of satisfaction
of IB services is divided into three components: the first is the convenience of IB
services, second is time saving when using IB services and the third is fulfillment of
customer's needs with IB services. Therefore, this hypothesis is divided into three
sub-hypotheses: H7.1c, H7.2c and H7.3c.

**H7.1c: Convenience will have a positive relationship with the success of IB
services.**

Table 6.10 shows the statistics relating to hypothesis 7.1c. The results reveal that the
convenience of IB services has a significant positive relation with IB success, with a
beta of 0.277 (t-value = 8.450) at the 0.05 significance level. Thus, the findings of the
regression model indicate that research hypothesis 7.1c, which predicts a positive
direct relationship between the convenience of IB services with IB service success is
supported at the 0.05 significance level. Therefore, the hypothesis is accepted.

The results of this study show that the convenience of IB services contributes to the
success of IB services. This finding is consistent with literature (Pikkarainen et al.,
2004; Al-Gahtani et al., 2007) argument that the convenience of IB services

contributes to a more usage and success of IB services. It has been argued that today's globally competitive banks require an improvement in their service quality with a focus on the customers. These conditions require a banking enterprise to concentrate more on continuous improvements in terms of their activities to be convenient to their IB customers' to be competitive and successful (Guozheng et al., 2007).

H7.2c: Time saving will have a positive relationship with the success of IB.

Table 6.10 shows the statistics relating to hypothesis H7.2c. The result shows that time saving in IB services has a significant positive effect on IB success, with a beta of 0.131 (t-value = 3.870) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis H7.2c, which predicts a positive direct relationship between saving time by using IB services with IB service success is supported at the 0.05 significance level. Therefore, the sub-hypothesis is accepted.

The regression result found that time saving in IB services has a positive effect on the success of IB services. In line with the findings of this study, previous literature have found that time saving in IB services was a significant variable. Other researchers supported this research finding (Nicholas, 1997; Karjaluoto et al., 2002; Lee et al., 2005; Mangin et al., 2011), and reported that time saving in e-banking services is positively associated with the success of IB services. It has been also argued in the literature that time saving when use IS increases the success of that system (DeLone & McLean, 2003).

H7.3c: Fulfilment will have a positive relationship with the success of IB services.

Table 6.10 shows the statistics relating to hypothesis 7.3c. The results reveal that fulfilment with IB services has a significant positive relation with IB success, with a beta of 0.108 (t-value = 2.990) at the 0.05 significance level. Thus, the findings of the

regression model indicate that research hypothesis H7.3c, which predicts a positive direct relationship between customers needs fulfilment with IB services and IB service success, is supported at the 0.05 significance level. Therefore, the sub-hypothesis is fully accepted.

The regression model indicates that customers' needs fulfilment with IB services has a positive relation with the success of IB services. This is consistent with literature findings (Weill et al., 1999; Wixom et al., 2001; Rai et al., 2002). Another research conducted by Pikkarainen et al. (2004), found that IB services fulfilment was strongly associated with the use and success of IB services. Therefore, this suggests that IB services fulfilment has major role in the success of the IB services (DeLone & McLean, 2003).

From the previous results of sub-hypotheses (H7.1c, H7.2c, and H7.3c), it can be generally concluded that the satisfaction of IB services has a positive effect on the success of IB services. With regards to that, DeLone and McLean (2003) revealed that "Use" must precede "user satisfaction", as positive experience with "use" will lead to greater "user satisfaction" which will then lead to the success of IB services. In another word, users' satisfactions will be impacted after frequent usage, not initial adoption, by positive feelings towards the success or negative feelings towards failure. So, it can be concluded that customers' satisfactions is expected to have a positive relation with IB usage and success.

H8c: Perceived ease of use will have a positive relationship with the success of IB.

Based on the results of the factor analysis (see Table 6.3), the variable of perceived ease of use of IB services is divided into two components: the first is ease of use of IB

services, and the second is interaction with IB. Therefore, this hypothesis should be divided into two sub-hypotheses: H8.1c and H8.2c.

H8.1c: Easiness of IB services will have a positive effects on the success of IB.

According to Table 6.10, the statistics relating to hypothesis 8.1c reveal that satisfaction with IB services has no significant positive relation with IB success, with a beta of 0.047 (t-value = .855). Thus, the findings of the regression model indicate that research hypothesis H8.1, which predicts a positive direct relationship between ease of use of IB services and IB service adoption, IB use, and IB success, is partly supported at the 0.05 significance level. Therefore, the sub-hypothesis is rejected.

The regression model found that there are no results to indicate that ease of use of IB services has no significant relation with the success of IB services. In this context, Agarwal and Karahanna (2000) argued that the ease of use of IB services can systemise the management control system to cope with the changes in activities that relate to customer needs. Probably, the reason behind this is that the experience of Saudi banks in IB services is a new and there is a need for additional time to evaluate the relationship between ease of use of IB services and success. Literature contradict with the regression result of this study, as Prompattanapakdee (2009) found that the longer an individual has been using IB, the more likely they are to find it easy to use. Similarly, the easier it is for a user to interact with a system, the more likely it is that he or she will find it useful and will lead to success (DeLone & McLean, 2003).

H8.2c: Interaction will have a positive relationship with the success of IB.
Table 6.10 shows the statistics relating to hypothesis 8.2c. The results reveal that satisfaction with IB services has a significant positive relation with IB success, with a beta of 0.154 (t-value = 4.550) at the 0.05 significance level. Thus, the findings of the

regression model indicate that research hypothesis 8c, which predicts a positive direct relationship between interaction with IB services and IB service success is supported at the 0.05 significance level. Therefore, the sub-hypothesis is accepted.

The literature is consistent with the idea that interaction with IB services is associated with a greater use and success of IB services. Interaction with IB services relates to the ability to achieve and sustain a continuous improvement through customer satisfaction (Guozheng et al., 2007). The literature on IB supports the above result, in which interaction with IB services has a positive relation with the extent of IB service use. It has been argued that today's banking environment can be characterised by intensified competition, market changes and high customer demand. These conditions require a bank to focus more on customers' continuous interaction with IB services (Kassim, 2006).

The interaction with IB services concept is consistent with the increasing use and success of IB services (Guozheng et al., 2007). Empirical work by Polatoglu and Ekin (2001) supported the proposition that one of the important initiatives that encourage the usage of IB services is interaction with IB services. From the regression model results of the sub-hypotheses (8.1c and 8.2c), hypothesis 8c is considered partially accepted. It can be concluded that perceived ease of use of IB services has a positive effect on the success of IB services.

H9c: Perceived usefulness will have a positive relationship with the success of IB.

According to Table 6.10, which relate to hypothesis 9c, the findings show that perceived usefulness of IB services has no significant positive relation with IB success, with a beta of 0.040 (t-value = 1.022) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 9c, which predicts a

positive direct relationship between perceived usefulness of IB services with IB service success, is not supported at the 0.05 significance level. Therefore, the hypothesis is fully rejected.

The literature on IB services contradicts with the model regression result. In this context, perceived usefulness has a very important relation with customer interactions, as it is an-other key success factor of e-bank, because e-bank is built for the provision and extension of banking services (Guozheng et al., 2007). Explaining this contradictory result is quite difficult, given that previous studies confirmed the relationship between perceived usefulness of IB services and the success of IB services (Venkatesh and Davis, 2000; Suh and Han, 2002; DeLone & McLean, 2003). In addition to that, Mangin et al. (2011) found that the influence of the 'perceived usefulness' on IB customers towards the successful implementation of IB. A possible explanation for the non-significant relationship is that the investment in IB systems in SA might be because of the lack of awareness of IB services, lack of communication between Banks and IB customers or because the internet and IB services charges are expensive for the Saudi IB customers.

H10c: The availability of IsB will have a positive relationship with the success of IB services.

Table 6.10 illustrates the statistics relating to hypothesis 10c. The result shows that the availability of IsB of IB services has a significant positive relation with IB success, with a beta of 0.133 (t-value = 4.208) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 10, which predicts a positive direct relationship between the availability of IsB of IB services and IB

service success, is supported at the 0.05 significance level. Therefore, the hypothesis is fully accepted.

The literature supports the regression model result in which the success of IB services are significantly associated with the availability of IsB services, as customers prefer IsB services (Elbeck et al., 2010). Other studies concluded that customers' preference for IsB services is remarkably culturally sensitive and shall be related to the success of banks marketing strategy (Naser et al., 1999; Arasly et al., 2005; Jabnoun and Khalifa, 2005; Amin and Isa, 2008). The model regression result is consistent with the findings that emerged in the study of Metwally (1996) and that of Al-Sultan (1999). As this result is significant with a positive direction, it can be concluded that the availability of the IsB services are likely to make more use of IB services. Therefore, the hypothesis is accepted.

H11c: Old age will have a negative relationship with the success of IB services.

According to Table 6.10, which relate to hypothesis 11c, the findings show that age has no significant positive relation with IB success, with a beta of 0.035 (t-value = 0.115) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 11c, which predicts a negative direct relationship between age and IB service success, is not supported at the 0.05 significance level. Therefore, the hypothesis is rejected.

The regression model results found that age has no significant relation with the success of the IB services. Similarly, Akinci et al.'s (2004) found that middle-aged consumers are more likely than younger or older consumers to use IB. The finding of this study is in a conflict with the other literature who found that the usage and success of the IB services is associated negatively with the age of customers (Al-

Gahtani et al., 2007). Tele-banking usage is negatively associated with age (Al-Ashban and Burney, 2001). In addition to that several studies found that customers who are younger more likely to use IB (e.g. Sathye, 1999; Karjaluoto et al., 2002; Mattila et al., 2003). As a result, the findings of the regression model also revealed that age has no significant relation, thus it can be concluded that the success of IB services is not associated with age groups. Therefore, the hypothesis is fully rejected.

H12c: High educational level will have a positive relationship with the success of IB services.

According to Table 6.10, which relate to hypothesis 12c, the findings show that education has no significant relation with IB success, with a beta of 0.029 (t-value = 0.110) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 12c, which predicts a positive direct relationship between education and IB service success is not supported at the 0.05 significance level. Therefore, the hypothesis is fully rejected.

The literature is not consistent with the regression results in which the level of education is necessary for coping with the success of IB. Liao & Cheung (2002) found that the educational levels of customers' financial performance is associated with success of IB services. Thus, the educational level of customers is a necessary step for IB to succeed in coping with the intensity of banking competition (Karjaluoto et al., 2002).

H13c: High income of the users will have a positive relationship with the success IB services.

According to Table 6.10, which relate to hypothesis 13c, the findings show that income has a significant relation with IB success, with a beta of 0.163 (t-value =

4.561) at the 0.05 significance level. Thus, the findings of the regression model indicate that research hypothesis 13c, which predicts a positive direct relationship between income and IB service success is supported at the 0.05 significance level. Therefore, the hypothesis is accepted.

These results imply that individuals' decisions with respect to IB services success are significantly influenced by the level of income. Eastin (2002) confirms that income has a strong relation with people's decision to use or not to use of the IB services. Al-Somali et al. (2008), found that the lack of income, people in developing countries face difficulties in accessing the internet. As the more customers' interact with a system, the more likely he or she will find it beneficial and will lead to success (DeLone & McLean, 2003). Based on these results and this argument, it can be concluded that high income has led to the high degree of IB services use in SA, which support this regression result. Therefore, this hypothesis is fully accepted.

H15: Use of IB services will have a positive relationship with on IB success.

According to Table 6.10, which relates to hypothesis 15, the findings show that the use of IB services has a significant relation with the success of IB services, with a beta of 0.291 (t-value = 8.934). Thus, the findings of the MR model indicate that research hypothesis 15, which predicts a positive direct relationship between the use of IB services and the adoption of IB services, is supported at the 0.05 significance level. Therefore, the hypothesis is accepted.

Literature support the regression result, as it has been argued that the greater usage of IB services has influenced the inclusion of more performance measures within banking systems. In this context, Eriksson et al. (2005) provided evidence from banks in Estonia that the frequency of use of IB services was matched with the efficiency of

IB services. In the empirical work by Emmanouilides and Hammond (2000) and by Al-Gahtani (2001), the frequency of use of internet services was strongly associated with the success of using internet services. Gerrard and Cunningham (2003) commented in their study that the relative success of IB is derived from the frequency of IB usage. Thus, it can be concluded that the use of IB services plays a major role in the success of IB services. Therefore, the hypothesis is fully accepted.

From the previous paragraphs and in reference to the Success regression model test results, presented in Table (6.10), the following research IB Success model has been concluded as shown in Figure (6.3).
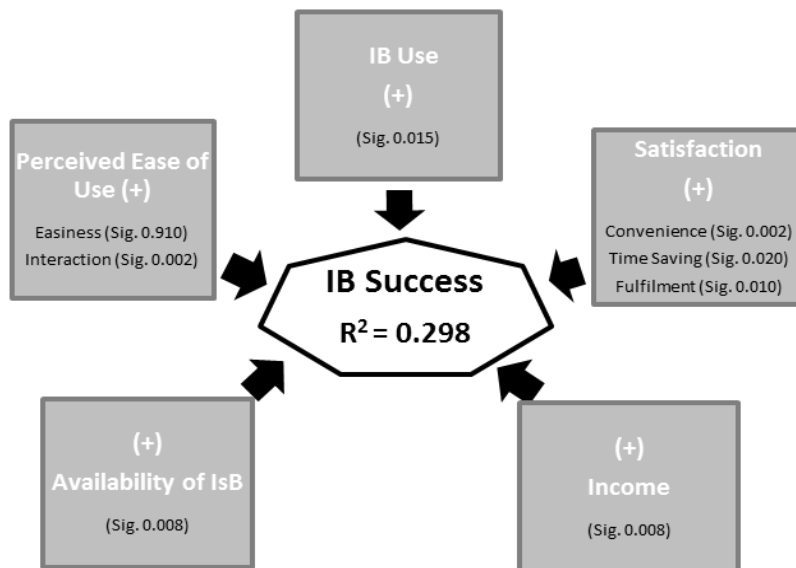
Figure 6.3: The relations between the statistical significant factors and the IB Success.

6.6 Findings and Discussion

In this sub-section, the research analysis findings are highlighted and discussed. The conceptual model that is used to guide this research is shown in Chapter 2, Figure 2.15. The research's conceptual model proposed three main facets and several linkages with different independent variables, which were represented by several hypotheses in Chapter 2. This chapter tested these hypotheses, used MR analysis, and the results of these tests are summarised in the following Table 6.11.

H#	IB Facets			Result
	Adoption	**Use**	**Success**	
1	Awareness (+)			**Accepted**
2	Resistance to change (-)			**Accepted**
3	Self-efficiency (+)			**Accepted**
4	Availability of IB infrastructure (+)			**Rejected**
5	High security (+)			**Rejected**
6	High costs (-)			**Accepted**
7	Satisfaction (+)			**Accepted**
8	Perceived ease of use (+)			**Accepted**
9	Perceived usefulness (+)			**Rejected**
10	Availability of IsB (+)			**Accepted**
11	Old Age (-)			**Rejected**
12	High Education (+)			**Rejected**
13	High Income (+)			**Accepted**
14	Adoption of IB services has a positive relationship with the use of IB.			**Accepted**
15	Usage of IB services has a positive relationship with IB success.			**Accepted**

Table 6.11: Results of the research hypotheses test.

Table 6.11 shows that 5 out of the 15 research hypotheses are rejected, and 10 of them are accepted, as discussed in the previous sub-sections of this chapter. The research models addressed three main areas: adoption, use, and success of IB services. To meet the research objectives and to answer the research's' questions; this section summarises the factors which have a relation with the customers' attitudes towards the adoption, the usage and the success of IB services in SA, relying upon the results of the hypotheses, since not all factors were found to influence the three facets and

some factors were found to affect each facet differently. Hence, Figures 6.1, 6.2 and 6.3 show the adjusted models developed by this research based on the model regression results and the analyses of the primary data.

Independent Variables	Adoption		Use		Success	
	Sig.	*Beta*	*Sig.*	*Beta*	*Sig.*	*Beta*
AWARENESS	0.002	0.590				
RESISTANCE	0.002	-0.225				
SELF-EFFICIENCY	0.020	0.280	0.031	0.268		
INFRASTRCTURE						
SECURITY						
COST	0.020	-0.265	0.031	-0.172		
SATISFACTION (CONVENIENCE)	0.020	0.218	0.001	0.230	0.002	0.277
SATISFACTION (TIME SAVING)			0.020	0.111	0.020	0.131
SATISFACTION (FULFILMENT)	0.010	0.099	0.031	0.106	0.010	0.108
PERCIEVED EASE OF USE (EASINESS)	0.031	0.170	0.031	0.095		
PERCIEVED EASE OF USE (INTERACTION)	0.031	0.146	0.000	0.157	0.002	0.154
USEFULNESS						
IsB AVAILABILITY	0.008	0.113	0.001	0.141	0.008	0.133
AGE						
EDUCATION						
INCOME	0.010	0.093	0.010	0.145	0.008	0.163
ADOPTION			0.001	0.264		
Use					0.015	0.291
R2	**0.618**		**0.394**		**0.298**	

Table 6.12: Variables Sig. and Beta values, comparision between IB adoption, use & success.

This study contributed to the marketing research by advancing the knowledge and extending, scientifically, previous model and theories, such as the TAM model theory and DeLone and McLean (2003) IS success theory, by examining a wide range of variables which have not been investigated before (e. g. Availability of IsB). This study also responds to calls from several recent studies, e.g. by Brooksbank and Taylor (2002), Al-Sabbagh and Molla (2004), Akamavi (2005), Cheng et al. (2006), and Alsajjan and Dennis (2010), to examine the extent to which these variables are

significant to the initial (Adoption), moderate (use) and long-term use (Success) of IB services.

Results confirm that the different factors relate to IB adoption, use, and success, as they are varied and have different levels of relationships. The research's' adoption, use, and success of IB models were found explaining 62%, 39.4% and 30%, respectively, of the SA adopters, users and successful IB customers attitudes. IB acceptance studies should employ the researchers' models to predict users' behaviours, as applicable during adoption, use or success, because of the comprehensiveness of these models as they have examined a good number of the behavioural factors, and due to the fact that its parsimonious form capturing techno and social beliefs. In addition to that, the researches' models have shown high, good and faire prediction powers (R^2=62%, 39.4% and 30%,) compared with other models (i.e. Suh and Han, 2002 R^2=75%; Wang et al., 2003 R^2=62%; Pikkarainen et al., 2004 R^2=12.4%; Shih and Fang, 2004 R^2=66%; Lallmahmood's, 2007 R^2=67%; Hosein, 2009 R^2=32.2%;). In the following paragraphs, the research's findings of the different factors relations with the three main facets (adoption, use and success) of IB are presented below.

In this research, the attempts to use IB services or even the experience of using them is considered a predictor for adoption (Al-Ashban and Burney, 2001), whereas greater usage of IB (frequency of using IB) (e.g. Sathye, 1999; Al-Ashban and Burney, 2001) is considered a predictor for IB usage. A number of factors have been suggested by different researchers as being necessary for the success of new products or services (Solomon, 1996; Lockett and Littler, 1997; Hawkins et al., 1998; DeLone and

McLean, 2003). There are a number of factors which, if they are satisfactory, will ensure a successful competitive performance for the organisation (Rockart, 1979).

Table (6.12) indicates that the adoption of IB services is strongly related to the awareness level of people in the Saudi community. This finding is in line with Kotler and Keller (2009), who suggested that new products and services go through a five-stage adoption process: awareness, interest, evaluation, trial, and finally, adoption. In addition to that, Table (6.12) also shows that resistance to change in the banking channels has a direct negative effect on IB service adoption. Strong resistance to change has led to a decreased demand for IB services. Thus, people prefer not to adopt IB services. Resistance to change is part of social norms that effect on intention to adopt IB. The result is confirmed with the study by Taylor and Todd (1995), Venkatesh and Morris (2000) and Amin et al. (2007), found social norms to be an important factor for adoption of IB.

This study found that self-efficiency is an essential principle used in the adoption and use of IB services. As the relationship between self-efficiency and the adoption as well as the usage of IB services suggests that self-efficiency contributes to an increase in the adoption and use of IB services. Several studies are consistent with the research findings, as different researchers (Venkatesh and Davis, 1996; Wang et al., 2003) suggested that individuals with high computer self-efficiency are expected to be able to use computer systems more regularly because they feel "comfortable" about using computers, in contrast with those with a low "strength" of self-efficiency. The levels of self-efficiency of people when using IB services represent a challenge for banks. However, the challenge oscillates between attempts to secure the financial system and efforts to make the usage and adoption of IB services easier in order to maintain the

special interests of banks. In this research, many of the respondents were educated and they had the skills to deal with computers. Such skills provide the potential for the adoption and usage of IB services with high levels of self-efficiency. The logic behind this is consistent with the results, which confirmed that self-efficiency has a positive relation with the adoption and use of IB services. This suggests that current levels of self-efficiency will increase the usage of IB services.

This study also found that cost is considered as an important factor which relates with the adoption and use of IB services. High cost leads to a lack of adoption and usage of IB services. Thus, cost has an important role in influencing the extent of the adoption and usage of IB services (Sathye, 1999; Karjaluoto et al., 2002; Gonzalez et al., 2004). The increase in cost leads to a decrease in the levels of adoption and usage of IB services. Therefore, the findings point out that high cost has a negative relation with the adoption and use of IB services. CITC (2010) conducted field and online surveys investigated rating the internet broadband services prices provided to households. The majority (79%) of the respondents rated the service as expensive to very expensive, which is expected to have negative relationship.

This study also revealed that satisfaction of IB services is closely related to their adoption, use, and success (Polatoglu and Ekin, 2001; Pikkarainen et al., 2004). From the customer's perspective, IB facilities provide a convenient and effective approach to the management of personal finances, because, as mentioned previously, they are accessible 24 hours a day and 365 days a year from any location and without the need to visit the bank (Rotchanakitumnuai and Speece, 2003). The concept of convenience refers to an effective banking system, saving time and increasing people's satisfaction with IB services. Thus, an effective system of IB services will save the customer's

time and money, increase the customers satisfaction and should result in more adoption, use and high success. "Use" must precede "user satisfaction", as positive experience with "use" will lead to greater "user satisfaction" which will then lead to the success of IB services (DeLone and McLean, 2003). Similarly, increased "user satisfaction" will lead to increased "intention to use" and thus to "use". An effective system often leads to people's satisfaction with IB services' IS. The customer satisfaction of IB services in SA depends on several elements, including the availability of infrastructure, information and skilled human resources in using a computer. Hence, the satisfaction of IB services relates positively to their adoption, use and success. This relationship was shown in the results, as the satisfaction of IB services has a positive relation with their adoption, use, and success.

Perceived ease of use of IB services also has a relationship with the adoption, use and success of IB services. In SA, banks have the ability to make their services easier to use. Perceived ease of use of IB services leads to an increase in use of IB services. Therefore, it is reasonable to consider that perceived ease of use of IB services is positively related to the level of adoption, usage and success of IB services. This research revealed that the longer an individual is using IB, the more likely he or she is to find it easy to use (Prompattanapakdee, 2009). Similarly, the easier it is for a user to interact with a system, the more likely it is that he or she will find it useful. There is substantial empirical support for this view (Chau, 2001; Amin, 2007; Rigopoulos & Askounis, 2007; Lee, 2009). It affects the consumers' intentions to use IB.

A high quality service is one that is easy for the customers to adopt and use. Ease of use will depend on the web content and web design of the bank's website; this will determine the usability or the user friendliness. Also, researchers (Eriksson et al.,

2005; Al-maghrabi & Dennis, 2010; Alsajjan & Dennis, 2010; Al-Majali & Nik Mat, 2011) found that the usability and accessibility of IB will determine the bank's success. Banks need to ensure that their online services are easy for customers to use to encourage their acceptance. Customers need to feel comfortable with the technology before being able to adopt it. Thus, this relationship, which was shown in the results as perceived ease of use of IB services, has a positive relation with the adoption, use and success of IB services.

One of the main contribution to knowledge, this research found that there are a significant relationship between the availability of IsB and the adoption, use, and success of IB services. The adoption, use, and success of IB services are expected to be high when the Islamic banks are available online in SA, because the other commercial and investment banks are not enough for people. Hence, Islamic banks can enable people to adopt and use IB services. In other words, the availability of IsB has a function to enable people to respond effectively to IB services. This relationship is consistent with the findings of other studies (Metwally, 1996; Al-Sultan, 1999; Zainuddin et al., 2004), since the availability of IsB and applying its standards has a positive relation with the adoption, use, and success of IB services.

This study also found that income affects most of the components that contribute to the adoption, use, and success of IB services, such as computer ownership, connection to the internet and quality of services (Jayawardhena and Foley, 2000; Karjaluoto et al., 2002). In SA, incomes are often between medium and high. Therefore, this study found that the level of income is positively related to the adoption, use, and success of IB services. Hence, the results show that income has a positive relation with the adoption, use and success of IB services.

A longer adoption of IB services indicates the need for IB services. Under this need, the adoption of IB services creates more frequency of use and the use of a wide range of services (e.g. Sathye, 1999; Al-Ashban and Burney, 2001). The frequent use of an IS has been understood in many studies as signifying user acceptance of the IS (Davis et al., 1989; Davis, 1993). Therefore, this study suggested that the continuous adoption of IB services remains an easy matter due to the wide range of services used which, in turn, allows more frequency of use of IB services; thus, the adoption of IB services remains high. Moreover, with the revolution of the SA stock market and e-payment system and e-government, the possibility of the frequent usage of IB has become greater than before. Therefore, this relationship was shown in the results as adoption having a positive relation with the frequency of use and range of IB services.

Surprisingly, the research's findings show that the security of IB services has no significant relation with IB adoption and use. Thus, the findings of the regression model indicated a direct negative relationship between the security of IB services, and IB service adoption and IB use. This finding is in contrast with other studies as security has been identified as a key customer concern in other IB adoption studies (e.g. Black et al., 2002; Siu and Mou, 2005; Poon, 2008; Adesina and Ayo, 2010). The research findings revealed, after investigating the Saudi environment, that the familiarity and awareness of the IB risks and dangers were not enough to mitigate them. As a result, Saudis generally do not complain when they fall victim to internet cybercrimes (Humaidan, 2010). In addition, Shafi (2002) found that Saudi businesses use the internet mostly for conservative tasks.

6.7 Chapter Summary

In summary, this chapter presented the results of inferential statistics, such as multicollinearity tests, factor analysis, correlations and MR. All those methods of analysing the findings were explained and discussed briefly and a comparative argument from the literature was presented.

Factor analysis was used in this research to classify each variable into a set of dimensions. Such classification can contribute to a more accurate determination of the relationships and influences between the variables (Field, 2005). The Cronbach's alpha was used in this research to test the internal consistency and to measure the reliability of the variables resulting from the factor analysis. The results of Cronbach's alpha test were presented in this chapter and all loadings were greater than .70, which indicates acceptable levels of reliability (Hair et al., 1998).

Multicollinearity tests were undertaken also, and the results were presented in detail, as they might cause a problem for MR since it can affect the parameters of a regression model (Field, 2005). In addition, the DW test was performed to test if the residuals were correlated. The test values were found to be between acceptable levels (less than 1 or greater than 3 are deemed to be unacceptable) (Field, 2000).

MR analysis was used in this research to test the research hypotheses. This type of analysis was used to analyse the relationship between a dependent variable and a set of independent variables (Hair et al., 1998). The main objective of MR analysis is to use independent variables whose values are known to predict the single dependent value (Hair et al., 1998). The results of the analysis were presented in this chapter and revealed that 5 out of the 15 research hypotheses were rejected, and 10 of them were accepted.

Finally, this chapter concluded that awareness of and resistance to change are affecting only the adoption of IB services, whereas self-efficiency and high cost are affecting the adoption and use of IB services. It was also concluded that perceived ease of use, satisfaction, availability of IsB services and income were very important factors as they affect all facets (adoption, use and success) of IB services. In the following chapter, the main conclusion and research findings will be discussed; in addition, the different implications will be highlighted and finally recommendations for future research will be made.

Chapter Seven

Conclusion and Implications

7.1 Introduction

IB is clearly and attractively and potentially rich research context (see Sathye, 1999; Shanmugam & Guru, 2000; Al-Ashbin & Burney, 2001; Jun & Cai, 2001; Polatoglu & Ekin, 2001; Black et al., 2002; Gerrard & Cunningham, 2003; Ndubisi & Sinti, 2005; Lam & Burton, 2006), but there is limited empirical work which captures the nature and essence of Internet adoption, use and success, especially in the banking sector in SA, nor analyse of success factors to help form a strategic agenda. The upshot of this thesis deemed to provide a theoretical contribution rests in a scholar's ability to produce thinking that is original in its insight and useful in its application. Therefore and in order to facilitate the discussion in this chapter, Corley and Gioia's (2011) theoretical contribution model has been utilized to characterise the research's contribution, as introduced in Chapter 1. In their view, the originality[1] and utility[2] dimensions usually are treated as working together to produce varying levels of theoretical contribution.

This research contributed to knowledge in several aspects and mainly its key strength is extending the marketing literature by investigating the factors that have relations with the IB utilizations. This research also sought to provide a better understanding of the adoption, use, and success of IB services. In particular, an effort has been made to provide a better understanding of how IB services are provided by banks. In addition, this study utilised marketing theory to develop a theoretical framework to examine the

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[1] *Originality can be categorized as either (1) advancing understanding incrementally or (2) advancing understanding in a way that provides some form of revelation (Corley and Gioia, 2011).*

[2] *Utility parses into (1) practically useful and (2) scientifically useful (Corley and Gioia, 2011).*

contingent relationships between the adoption, the use, and the success of IB services and a set of different factors, such as awareness, resistance to change, self-efficiency, perceived ease of use, perceived usefulness, security, cost, availability of infrastructure, availability of IsB, income, age, and education.

In addition, this study utilised, redefined, and expanded the previous research and literature in the marketing of IB services. In particular, the examination of the literature indicated that the determinants of the adoption of IB services varied across studies. For example, Chung and Paynter (2002) and Pikkarainen et al. (2004) measured the extent of IB service use through a self-rating questionnaire about the elements of IB service. Other studies (e.g. Sathye, 1999; Wungwanitchakornm, 2002; Al-Sabbagh and Molla, 2004; Chan and Lu, 2004; Cheng et al., 2006) defined the extent of IB service use as multi-perspective sets of both adoption and use measures. The reliability of the statements in the literature that were based on such research was found to be rather limited. Thus, developing a valid comprehensive theoretical model that is empirically tested should be of benefit to practitioners, academics, and researchers wishing to investigate these areas further.

This study builds on the works of the aforementioned studies in terms of developing a wider, more accurate, and more comprehensive models of IB adoption, use and success. In particular, three facets have been utilised to determine the actual extent of IB service use, as a new service in the SA market. The first facet was used to identify the concept of the adoption of IB service and the factors influencing it. The second facet was designed to determine the actual usage of IB service, which was influenced by several factors. The third facet was utilised to ensure that the success perspectives are really used in banks. Finally, this study is one of the first to incorporate several

contingent variables in one model and investigate their effect on the adoption, use, and success of IB services. Therefore, it could be argued that this study has successfully met its three main research objectives (introduced in Ch. 1):

1. To establish how the SA IB market differs from IB markets in other countries.

2. To investigate the relations between different factors (e. g. demographics) and IB services, from the customers' point view, in developed and developing economies.

3. To capture the most relevant factors that relate, from customers point view, with the IB market in SA.

4. To understand the main differences between the different facets (adoption, use and success) of IB services

5. To understand the relations between the customers' attitudes and the   a) adoption, b) use, and c) success of IB services in SA.

6. To establish well developed theoretically and tested empirically models of the aforementioned facets.

7. To recommend some innovative ideas, solutions and improvements, which can contribute to the enhancement and development of the adoption, use, and success of IB services in SA, based on the successful tested models.

In order to meet the above research objectives, the study utilised, redefined and then expanded the previous work presented in fields of IB and marketing by several authors (e. g. Sathye, 1999; Chung and Paynter, 2002; Wungwanitchakornm, 2002; Al-Sabbagh and Molla, 2004; Chan and Lu, 2004; Pikkarainen et al., 2004; Cheng et al., 2006). A questionnaire survey was conducted to quantify the factors of interest and to test the hypothesised relationships between the independent variables and the dependent variables, as depicted in the research model.

The study utilised descriptive and advanced multivariate statistical techniques. MR analysis, correlation analysis and factor analysis were used, enabling SPSS software

version 17 to test the research hypotheses. A summary of the major findings emerging from the descriptive statistics and advanced multivariate analysis is presented and the major implications of this research for both academic and planning practices are presented in this chapter. The limitations of this research are outlined followed by suggested future research directions. Having discussed the regression results in the chapter 6; it is of benefit for the research to discuss the internal and external validity.

7.2 Discussion and summary of main findings

7.2.1 Market status of IB services in SA

There is considerable variation among SA banks in the adoption, use, and success of IB services. The empirical findings reveal that the range of IB services is moderate in SA. Significantly, the level of use of IB service differs across customers. The empirical findings also reveal that this variation can be linked to factors related to the respondents (e.g. awareness, income, skills, perceived ease of use and cost). Thus, it can be concluded that there are differences among banks' marketing strategies of IB services which affect their customers' attitudes differently. The empirical findings also show that people preferred the banks offering IsB services. The Islamic rules which forbid dealing with commercial banks have contributed to the success of IB services for the banks offering IsB more than for conventional banks. Therefore, the extent of IB service use in conventional banks is quite low compared with those banks which offer IsB services. This result indicated that three major banks, namely, Al Rajhi Bank, NCB, and Arab National Bank, have attracted 81.6% of the respondents because of the availability of IsB services at those banks.

It can be concluded that IB in SA continues to be an important aspect of the banks evaluation. However, the type of IB service used by customers depends on banks'

marketing strategies, which may also need continuous evaluation, as the types of IB services selected by customers with a high level of income will differ from those selected by customers with a lower income. The findings of this study indicate that income is a common factor that would affect customers' attitudes towards the adoption, use and success of IB services. This supports the notion that the evaluation of IB services is linked to banks' strategies. However, it should be noted that in this study, respondents were not asked how their banks actually link their strategies to people's perspective or how they establish the connections between the needs of banks and people. Therefore, these two results shall be treated with some caution.

7.2.2 IB adoption: The Key Relations

The findings of this study established that among all the factors investigated, there are eight factors affecting the adoption of IB services. It should be noted that all the results presented in Chapter 6 were confirmed through the direct relationships between the independent variables, including awareness of IB services, resistance to change, self-efficiency, perceived of ease of use, high cost, availability of IsB, income, and the dependent variable (i.e. the adoption of IB services) as presented in Figure (6.1).

Resistance to change has been found to have a relationship with the adoption as it maybe related to dissatisfy with the information and guidance offered by the bank and/or only psychological resistance to IB. Facing this need should be associated with preparing to change from the present ways of operating. In addition to that awareness has been found to have a relationship with the adoption of IB, as banks should increase the awareness, decrease the resistance to change, and lower the cost of IB services, as these factors were found to affect the new adopters of IB services

significantly (Sathye, 1999). Regarding this, high income was found to affect the adoption of IB services positively; therefore, the banks should target customers with a higher income by motivating them to utilize IB services and giving them special IB accounts, where they can adopt IB services with a high level of support. Satisfaction, ease of use of IB services, the availability of IsB services and self-efficiency were found to affect the adoption of IB services positively. Therefore, bankers shall enhance their IB services to meet customer needs.

7.2.3 IB Use: The Key Relations

As illustrated in Figure 6.2, the major findings indicate that greater self-efficiency in using IB services contributes to the use of IB services in Saudi banks. However, one of the main challenges facing the use of IB services is the higher cost of the internet and IB services in SA as highlighted in chapter 3. The regression analysis results also indicate the same findings, as a strong negative relation with the usage of the IB services might be resulted if no attention been given to the cost factor. Satisfaction, perceived ease of use, the availability of IsB and the income were found having a positive relationship with the usage of the IB services. Bankers should improve their relationships with their IB customers by improving their services and provide satisfactory services, and then maintain customer loyalty.

Banks need to continually improve the provided services to ensure that IB does not diminish the relationship with their customers (Gonzalez et al., 2004). If banks wish to survive in the online home-banking age, they have to earn customer loyalty through product features and service excellence rather than allowing loyalty to stem from customer inertia (Daniel, 1999). Customers utilize IB because it offers convenience, saves time, and maintains privacy. In addition to that, eight out of ten e-bankers in the

U.S. ranked satisfaction and saving time as important; four out of ten e-bankers said it was very important to bank without the need to talk to anyone (George, 2002).

Adoption has been also found in chapter 6 as one of the strongest factors that relates with the customers' attitudes towards the usage of IB services. When an individual begins to adopt the IB services, they will be motivated to continue their use, but if the individual continues to place a high value on personal relationships, then this will have a negative effect on their intention to use the services (Prompattanapakdee, 2009). Thus, the duration of the experience with the technology has been found to capture the customer's intention to use the technology (Safeena et al., 2011).

The new adopters of the IB service are expected to be light users and very critical users where they will stay and become the medium and heavy user or they might leave adopting IB due to negative feelings. Pre-emptive actions should be taken by the banking sector in order to increase the retention of IB users. For the new users who are expected to be light user, incentives should also be emphasized. The light user can become a non-user when they are no longer using the IB. As a result, this research proposes the implementation of IB quality as integral constituents to maintain and increase the IB users' retention to become regular users (Raman et al., 2008). The adoption of IB can be increased by the attractive incentives and encouragement. Human beings are likely to be motivated and influenced by incentives. Based on the survey, adoption of IB is showing a great deal in the development with 72% of the respondents having adopted IB (Raman et al., 2008).

Figure (6.2) shows that one of the most important factors contributing to the use of IB is the current adoption of IB services. It was argued that the frequency of services used in most banks is related to the adoption of IB services. The research model

suggests that the adoption process is influenced by several factors, such as increasing the customers' awareness, decreasing the resistance to change, convenience with the provided service and the ability to deal easily with the service. These factors were found to provide opportunities for maximizing the frequency and range of services used by customers. Agarwal and Prasad (1997) studied both initial system usage and the intentions of future use and found that different factors affected initial use versus future use of the WWW. Similarly, Karahanna et al. (1999) found that factors associated with "intention to use" windows differed between potential adopters and continuing users. These two empirical studies demonstrate that early use and continued use can differ.

7.2.4 IB Success: The Key Relations

The research results reveal that the satisfaction (convenience) of IB services has a significant positive effect on the success of IB services. The satisfaction (convenience) of IB services stems from the quality of the services. High standards in the quality of service in Saudi banks are indicative of the satisfaction (convenience) of IB services. This suggests that the proper Internet connection, in particular speed, in SA had encouraged people to adopt and use of IB services. In addition to that, the type of IB services is consistent with the local socio-cultural context, since the SA is controlled Internet by the government through blocking access material that violates religion or encroaches on local culture. Figure (6.3) shows the different factors affecting the success of IB services.

The findings of this research reveal that the perceived ease of use of IB services affects positively the success of IB services. These results align with several studies (Eriksson et al., 2005; Al-maghrabi and Dennis, 2010; Alsajjan and Dennis, 2010; Al-

Majali & Nik Mat, 2011). This suggests that IB services should be simplified when people try to use them. However, IB services are a changeable process and this, in turn, leads to the reassessment and amendment of the services to make them easier to use. Banks were found to be more flexible and better able to utilise the technological changes in order to make IB services easier to use in Saudi. Mattila (2001) concedes that customer satisfaction is a key to success in IB and banks will use different media to customize products and services to fit customers' specific needs in the future. Thus, the perceived ease of use of IB services has had a strong relation with the IB success.

Many people who live in SA are Muslim, and Islamic rules forbid dealing with commercial banks due to the interest (*Riba*). Such a religious principle helps the Islamic banks be more competitive in providing their services. However, the availability of the IsB of IB services reflects the fact that the Islamic banks provide high standards in their IB services. Therefore, the availability of the IsB services within the IB services was found to have a significant positive effect on the success of IB services. The findings also show that income level has a significant relation with the success of IB services. In general, the level of income in SA is high compared with the other developing and Arab countries. Medium and high incomes have led to a rising demand for IB services. This result suggests that people are able to afford a computer and to have an internet service. As a result, income level plays an important role in the success of IB services.

In a study about IB in Islamic countries, Guru et al. (2003) showed that the majority of Islamic countries are still in the early stages of developing IB. Only some Islamic banks in the Middle East have well-developed IB websites for the satisfaction of their customers. Bailey et al. (1983) state that several factors affect the user satisfaction and

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it can be seen as a bi-dimensional attitude. The user satisfaction can be seen sum of user's feeling and attitudes toward several factors that affect the usage situation (Bailey et al., 1983). In general, it has been reported that IB saves time and money and has a positive relation with customer satisfaction towards the usage and success of IB (Mattila, 2001; Karjaluoto et al., 2002).

The research findings revealed that IB success was supported by increasing the customers' satisfactions, and the frequency of using of IB services. Figure 6.3 show that the use of IB services has a significant positive relation with the success of IB services. The results suggest that the IB system is effective. These is because of customers' satisfaction from the IB services, such as saving the customer's time and fulfil their needs, in addition to the availability of technical capabilities, information and databases, and easy-to-use IB services. These elements would contribute in increasing the frequency of the use the IB services, which will be reflected in maximising the success of the IB services. As a result, the frequency of using the IB services was found having a significant relation with the success of the IB services. DeLone and McLean (2003) stated that system usage is clearly a key variable in understanding IS success. Information quality and customers high satisfactions have proven to be strongly associated with system use and success (Weill et al., 1999; Wixom et al., 2001 and Rai et al., 2002) and especially in the context of e-commerce systems (Liu et al., 2000; D'Ambra et al., 2001; Molla et al., 2001; Teo and Choo, 2001; Palmer, 2002).

Despite the dissimilarity between the factors which relate with the adoption, use and success of IB services in SA and western countries such as Australia and the UK in terms of availability of IB infrastructure, security level, perceived usefulness, cost,

age of user and education levels, they are similar to each other in terms of the awareness, self-efficiency, satisfaction, perceived ease of use of IB services and income levels. Both of these areas have succeeded in managing IB services, where they able to develop real IB services. However, despite this similarity, there are variations between them regarding the management of IB services. This is because of the differences in the socio-economic and cultural context. In SA, the management of IB services is largely linked to the Islamic banks, and therefore, the Islamic model focuses on the development of IB services more than do other banks, while in western countries, the management of IB services is basically linked to the commercial banks.

Having thus sufficiently discussed the MR results as far as the relationships between the independent variables with the dependent variables are concerned (including their temporal variation and signs) attention can now be focused on Table 7.1 which is discussed next. In particular the answers the results suggest and how these measure up to the literature. That is, the external validity. However, before proceeding to discuss issues of external validity it may be of benefit to briefly summarise the track record of this research in terms of internal validity. As further to the discussed validity matters which have been presented in Chapter 4, internal validity acts as the hallmark of the quality of the produced results.

7.3 Internal validity

The internal validity refers to the extent to which the results of a study can be attributed to the variables rather than the research design (Jackman, 1985; Bergh et al., 2004). In order to assess that internal validity is high; one needs to demonstrate that a number of well-known threats to internal validity (e.g. selection, instrumentation, history, causal) did not create a flaw that is producing the reported

results. The relevant threats are discussed below along with the ways they have been addressed in this research. Selection threats stem from respondents being selected randomly on the basis of one or more characteristics influencing the results. Before proceeding examining the way this threat was addressed in this research, it needs to be made explicit, that the research results are not claimed to be transferable outside its targeted population; the IB users in SA. Although the results may still be valid elsewhere no effort has been placed in this research to measure the error or limits to such a generalisation; this is thus suggested as an area of further research.

Instrumentation threats stem from changes in the data sources, metrics, or coders. In this research the same instrument was used with all respondents. The quality of the language translation into Arabic was checked and found satisfactory, as a courtesy both the English and the Arabic translation were posted to all respondents in SA. Local metrics (e.g. for currency) were used to gather the 'raw' data which were subsequently recoded on the same scale (i.e. instrumentation threats controlled by adapting to measure differences) by this research in the manner discussed in section 4.13. A codebook (see Appendix E) was developed to minimize variation during data entry/coding and the same single coder was used for all data. As discussed in section 4.14, the EFA was undertaken in SPSS to aggregate the multiple-item question responses in order to determine the overall measure for the variable classifies each variable into a set of dimensions. Such a classification can contribute to a more accurate determination of the relationships and influences between the variables. Thus, EFA was performed to operationalise these variables and to test the degree to which the items are tapping the same concept. Harman's single-factor test was also performed to test for the presence of CMV. All the self-reported items were entered into a principal components factor analysis with varimax rotation. According to EFA

results; eight distinct factors with eigenvalues near or above 1.0 were extracted, explaining 67.0% of the total variance. The first factor explained 33.65% of the total variance, not the majority of the explained total variance (see Appendix I). These results are consistent with the absence of CMV. The discriminant validity test of all constructs has been also conducted and found satisfactory. It revealed that the measures correlations between the measures of each two construct are very low and the two sets of measures each are related to different constructs, and as such discriminated from each other. Finally the diagnostic univariate tests of normality (KS and SW non-significant results with value of more than 0.05) indicated a normal distribution of scores for all the independent and dependent variables; that is, the assumptions of normality were not violated. Similarly the four diagnostic tests for the MR analyses [of a) normality b) multicollinearity (VIF above 3.3 or so), and c) autocorrelation (DW above 2)] indicated there was no violation of its assumptions.

History threats can be briefly defined as events that occur between measurement periods that influence the results. These were addressed by collecting data from all respondents in one go. Although there were early and late respondents the amount of time that could lapse between responding to the main survey and its last wave was a maximum of 10 weeks. This 10 week window is unlikely to have affected the data gathered as of the data referred to previous years (see Table 4.5). Nonetheless, to dispel any concerns quantitative analysis of the early and late respondents was undertaken (discussed in section 4.13.1). The analysis did not indicate any major concerns. This can be taken to suggest that any additional event influences (i.e. not controlled for) are unlikely to be statistically significant.

Causal threats briefly defined as stemming from the temporality of the dependent and independent variables. Before proceeding to examine the way this threat was addressed in this research it needs to be made explicit that this research is a one-direction investigation. That is, the investigated effects are limited to those from the independent to the dependent variable direction. This is not to claim that there are or there are no any effects in the opposite direction but to clarify that they were not investigated; appearing thus as an area of further research. Nonetheless, the research results are claimed to be valid for this single direction of causality (hence the one-tailed test significance tests for the models).

7.4 External Validity

This section answers the key research questions based on the empirical material presented in the findings chapter (Ch. 6) along with how they measure up to the evidence reported in the literature. The evidence reported in the literature was reviewed in chapter two and three; which also identified its gaps and grey areas that will be re-encountered in this section. Unavoidably for some of the answers of this research there will be no comparable evidence in the current literature. These answers should thus be construed as original contributions to the literature, filling the aforementioned gaps, and illuminating the grey areas. Moreover, some of the evidence reported in the literature is comparable only nominally due to its sampling, operationalisation differences/difficulties, and analytical shortcomings. Nonetheless it provides a sufficient external referent for positioning the answers to the questions of this research. It should also be reminded that the answers to the key research questions include both 'positive' and 'negative' parts (summarised in Table 6.12); both of which figure in the discussion below.

Different factors are at play in the adoption, use and success of IB services. Factors contributing to the adoption, use and success of IB services were formulated as hypotheses, which were tested using MR analysis. These results suggest that these independent variables have different effects on the extent of the adoption, use and success of IB services. Table 7.1 indicates the adoption of IB service is influenced by eight variables including awareness, resistance to change, self efficiency, high cost, perceived ease of use, convenience, availability of IsB services and income. The table also presents that the use of IB services is influenced by seven variables comprising self efficiency, high cost, perceived ease of use, satisfaction, availability of IsB services income and adoption. However, the table shows that the success of IB services is influenced by five variables including perceived ease of use, satisfaction, availability of IsB services income and use.

Facets / Factors	Adoption	Use	Success
Awareness	X		
Resistance to change	X (-)		
Self efficiency	X	X	
High cost	X (-)	X (-)	
Perceived ease of use	X	X	X
satisfaction	X	X	X
Availability of IsB	X	X	X
Income	X	X	X
Adoption		X	
Use			X

Table 7.1: Factors affecting the adoption, use and success of IB services.

In addition to the above, it worth to highlight that perceived ease of use, satisfaction, availability of IsB services and income factors were found in this study to be important and significant factor because they relate to all of the main facets "adoption, use and success". In addition to that, the satisfaction (convenience) has been also found having relation with the three main facets starting from the adoption through usage to the success. Whereas satisfaction (time saving and customers' needs fulfilment) were found significantly having a relationship with the success after

frequent usage, as "use" and "user satisfaction" are closely interrelated. "Use" must precede "user satisfaction" in a process sense, but a positive experience with "use" will lead to greater "user satisfaction" then to success (DeLone & McLean, 2003). In the following sub-section the key research questions will be answered.

7.4.1 Relationships with the IB services adoption. What is the relative importance of each factor?

The first facet of the model concerns the "adoption" of IB services. Adoption is the acceptance and continued use of a product, services or idea. According to Rogers and Shoemaker (1971), consumers go through a process of knowledge, persuasion, decision and confirmation before they are ready to adopt a product or service. The researches' adoption model has shown high prediction powers ($R^2=62\%$), as this model explains 62% of the overall factors that might relate to the customers attitudes during the IB adoption in SA. The research's findings identified the range of factors which relate with the adoption of IB services, organised according to the strength of the impact (beta coefficient) (Table 6.12): awareness, self-efficiency, high cost, satisfaction, of IB services; resistance to change; the availability of IsB; and high income.

The relative importance of each factor during the adoption has been identified by the beta values (Table 6.12). The research findings indicated that awareness of IB services was found to be the most important and strongest factor, with a beta of 0.590, which positively relate to the adoption of IB services in SA, whereas self-efficiency of IB services has the second strongest positive relation on IB service adoption, with a beta of 0.280, and high cost of IB services has the third strongest relation (negative) on IB service adoption, with a beta of 0.265. The research findings are consistent with other studies' findings, such as Sathye (1999), Al-Ashban and Burney (2001) and

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Raman et al. (2008). Table (6.12) highlights the different factors based on their strength (beta) of relation with the customers' attitudes towards the adoption of IB. These factors were numbered from 1 to 11 based on their strength (beta) as shown in Table (6.12).

7.4.2 Relationships with the IB services use. What is the relative importance of each factor?

The second facet of the model concerns the use of IB services. Table (6.12) shows the researches' usage model, which indicates good prediction powers ($R^2=39.4\%$), as this model explains 39.4% of the overall factors that might relate to the customers attitudes during the use of IB in SA. The results identified the range of factors which relate to the use of IB services (organised according to their strength of relationship (beta coefficient)) as highlighted in Table (6.12): self-efficiency, satisfaction, high cost, perceived ease of use of IB services, income, and availability of IsB.

The relative impotane of the different use factors; the research findings revealed that the strongest factor affecting the use of IB services is self-efficiency, which has a significant positive relation with IB use, with a beta of 0.268. The second strongest factor affecting positively the use of IB services is the adoption of the IB with a beta of 264, and the third factor is satisfaction "convenience", with a beta of 0.230. High cost was found to be the fourth strongest factor which affects the use of IB services negatively, with a beta of 0.172. The research's findings are consistent with the findings of other research, e.g. Sathye (1999), Al-Ashban and Burney (2001) and Al-Somali et al. (2008). Table (6.12) shows the different factors with beta values based on their strength of relation with the customers' attitudes towards the adoption of IB. These factors were numbered from 1 to 10 based on their strength (beta) as shown in Table (6.12).

7.4.3 Relationships with the IB services success. What is the relative importance of each factor?

The third facet of this research is the success of IB services. Figure (6.3) shows the researches' success model, which shows a faire prediction power (R^2=30%), as this model explains 30% of the overall factors that relates with the customers attitudes towards the success of IB in SA. The customer's success of the IB is influenced by a variety of factors, (organised according to the strength of their relationship (beta coefficient)), as indicated in Table 6.12, including the use factor, satisfaction (convenience, time saving and fulfilment), income, perceived ease of use of IB services, and availability of IsB.

The use of IB were found the most relevant strongest factor which relates with the success of IB services, with a beta of 0.291, whereas the Satisfaction "convenience" of IB services is the second strongest factor affecting the success of IB, with a beta of 0.277. This is consistent with the findings of Weill et al. (1999), Wixom et al. (2001), Rai et al. (2002) and Pikkarainen et al. (2004). The research findings revealed that income has the third strongest relationship with the IB success, with a beta of 0.168, and then customer's interaction factor with a beta of 0.154. The fifth significant factor is the availability of IsB services which is positively relating with IB success, with a beta of 0.133.

7.4.4 What is the relationship between the adoption, use and the extent of the success of these factors on IB services?

The model regression result found that there are a very strong relationship between IB adoption and IB use, as adoption relates with the customers' usage of IB in SA significantly (P< 0.05). IB adoption is the second strongest factor in term of its positive relation with the usage of IB, with a beta of 0.276. In addition to that, the

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usage of IB is significantly (P< 0.05) having positive relation with the success of the IB in SA. With a beta of 0.291, the usage factor was found the strongest factor in term of its relation with the IB success.

The three main IB facets of this research (adoption, use and success) were discussed in detail in the literature review (Chapter 2). The literature support the regression model result, as if a customer adopts IB frequently, he or she will become a regular user (Al-Ashban and Burney, 2001), and if a customer increases his usage and uses a wide range of services, he or she will become a successful user as he is enjoying the benefit of using the IB services because of his high level of satisfaction (DeLone and McLean, 1992). Thus, ccustomers can receive benefits from IB; the benefits to customers are convenience, time saving and fulfill the customers' needs, which encourage customers to increase their usage of IB services too frequently. Banks also benefit from IB by reducing costs in accessing and using the banking services (Gurau, 2002).

The model confirms that the frequency of use refers to the ability of people to deal with IB services. Such as ability can enable people to adopt, use and, at the same time, contribute to the success of IB services. The increase in the frequency of use results to increase the success of the used technology (Solomon, 1996; Lockett and Littler, 1997; Hawkins et al., 1998; DeLone and McLean, 2003). The positive aspects of frequency of use are represented by adopting and using IB services that tend to interact with the success of IB services due to social conditions (i.e. levels of income and education) and the availability of choices such as Islamic, commercial, and investment banks.

Thus, the success of IB services would increase over time. In the literature, there is a strong relationship between the adoption and frequency of use IB services, but the relationship between frequency of use and the success of IB services is still unclear. It is worthwhile, therefore, testing this relationship, which is shown as frequency of use having a positive relation with the success of IB services. In addition, using wide range of IB services often provides opportunities for people to continue dealing with IB services, such services would be satisfactory and of high quality. Clearly, the literature indicates that banks are competing regarding the diversity and quality of their services. Therefore, using wide range of IB services influences positively the success. This relationship was shown in the findings, as a wide range of IB services has a positive relation with the success of IB services.

7.5 Research Contribution

In general, the contribution of this study is mainly to marketing research and practitce, in particular, IB research and bankers as introduced in chapter 1. Following Corley and Gioia's (2011) theoretical contribution model on what they believe "the time is right to turn a reflective lens on itself and try to establish more clearly not only what currently constitutes a theoretical contribution but also what should constitute a theoretical contribution in the future"; this research contributed to the practice of making a contribution to theory and to theory of theoretical contribution— to build theory about theory building (Corley and Gioia, 2011). With regards to that, it is suitable at this point to have some additional discussion about the major contributions of this research, and how the research objectives were met and the findings filled the following summarised gaps.

First, this study advanced the marketing research and extended, scientifically, previous model and theories, such as the TAM model theory and DeLone and McLean (2003) IS success theory, by examining a wide range of variables which have not been investigated before (e. g. Availability of IsB). This study also responds to calls from several recent studies, e.g. by Brooksbank and Taylor (2002), Al-Sabbagh and Molla (2004), Akamavi (2005), Cheng et al. (2006), and Alsajjan and Dennis (2010), to examine the extent to which these variables are significant to the long-term use of IB services. In addition, the IB theories (reviewed in Chapter 2) indicated that the empirical studies conducted to date have examined the role of relatively few variables. However, additional insights can be gained by considering additional variables. Thus, awareness, resistance to change, self-efficiency, availability of infrastructure, security, cost, satisfaction, ease of use, usefulness, the availability IsB, age, education and income are taken into account in this study as independent variables. The research's theoretical insights came from demonstrating how the addition of new variables significantly alters our understanding of the phenomena. Therefore, this provided incremental originality of the theoretical contribution to science.

Second, many studies have focused on issues of adoption and use with respect to IB services and have tended to search for new policies to deal with such phenomena. This study focuses on a set of different variables that lead to the adoption, use and success of IB services. Therefore, this study responds to many calls from marketing and IB researchers (e.g. DeLone and McLean, 1992; Sathye, 1999; Al-Ashban and Burney, 2001; Karjaluoto et al., 2002; DeLone and McLean, 2003; Cheng et al., 2006) to investigate factors which affect the success of IB services. The reviewed literature investigated factors that influence the adoption or use of IB, whereas no

study in the reviewed literature had investigated the factors that relate to the success of IB services. Therefore, this study extends previous IB research by examining the relations of these different variables have on the customer's adoption and use of IB services, and their success. Thus, the three dependent variables considered in the conceptual theoretical model of this study are 1) adoption, 2) use, and 3) success, and as a result three related models (i. e. part of the same family/ sunset of variables) have been developed; one for each facet. In addition to that, this study is considered first study in the field of IB among the reviewed literature which investigated those dependent variables on the basis of a common dataset. This transformed our thenking and revealed a new way of understanding the basis for determining new relationships towards the success of IB. This provided a revelatory originality theoretical contribution to science. The inclusion of these variables in the research theoretical model (see Chapter 2) resulted in the need to use inferential statistical techniques, such as MR analysis. MR analysis and correlation were considered the most appropriate techniques for testing the model (a detailed review of MR and correlation is presented in Chapter 4). Moreover, marketing studies (e.g. Sathye, 1999; Cheng et al., 2006) have called for the use of more rigorous statistical techniques, such as MR analysis, in order to have reliable findings and more confidence in the results.

Third, most of the IB studies reviewed in Chapters 2 and 3 were conducted in Europe, the USA, and Australia, while very little empirical research has been conducted in the Middle East and SA in particular. Thus, this study examined IB services in a new context in SA; as a result this research provides data for a comparison with results reported in other countries. Accordingly, it provides an original contribution as it represents an incremental advancement to science.

Fourth, as part of the study findings, security has not been found to affect the customers' adoption and use of IB services in SA and their success. This may be due to the level of customer awareness of IB security, or may be due to the fact that the SA IB market is relatively new. This might be also explained in different reasons such as the internet filtration systems that government established to protect the users from internet crimes, to protect the society culture and Islamic values and it might be for political reasons. This finding can be categorised as original revelatory contributions to practice. This area has been suggested and recommended as an area of further research in section 7.6.3.

Finally, SA is an Islamic society with a culture that manifests high power distance, uncertainty avoidant, collectivist, and masculinity characteristics, as categorized by Al-Gahtani et al. (2007) according to the Hofstede's theory of cultural dimensions. Although the potential importance of the use of PCs in the social and economic development of SA is recognized by the Saudi authorities (Basaddiq et al., 1986), the need to uphold the tenets of Islam was probably responsible for the delay (until January 1999) in allowing public access to the internet through PCs within SA (Al-Khaldi and Wallace, 1999). The Arab countries are unique because they consist of a group of nations that have a common ideology, Islam, and a common language. They can vary, however, in their policies and government due to loyalty to separate Islamic traditions and sects (Lieb, 1999). Guru et al. (2003) showed that the development of the IB in the Islamic countries is very low. Only some Islamic banks in the Middle East have well-developed IB websites for the convenience of their customers. However, since they are still in the infancy stage, there is a room for improvement. Evidence shows that Islamic countries are moving steadily towards IB. Given time, Islamic banks may one day stand alongside their conventional counterparts in the field

of IB. This study also responds to calls from different researchers, e.g. (Guru et al., 2003; Elbeck et al., 2010). Other studies have investigated the relationship of the availability of IsB products and services with the traditional banking services (e.g. Metawa and Almossawi, 1998; Al-Sultan, 1999; Bley and Kuehn, 2004) and no research in the reviewed literature studied the relationship of the availability of the IsB services on the IB services. The findings of this study reveal that the availability of IsB products and services has a significant and positive relation with the adoption, use, and success of IB services in SA. Therefore, this finding is classified as original revelatory contribution to science and ptactice.

7.6 Implications of research findings for knowledge

This research has three major implications for knowledge relating to IB services and marketing theory. It advanced the field not only through theory development, but also through empirical work using best practices.These are discussed here; the first is a discussion of the implications for policy makers. The second illustrates some of the implications for banks' practices. Finally, the implications for academic researchers will be discussed.

7.6.1 Implications for Policy Makers

As stated earlier, the customers' awareness of and their resistance to change in the IB services relates positively with the adoption customer attitudes regarding the adoption of IB services. As new adopters, governments should establish IB rules and regulations; they should also supervise (monitor) local banks and bank-customer relations and should maintain them on a regular basis. Governments should also hold discussions with individual institutions who wish to embark on IB to allow them to

demonstrate how they have properly addressed the security risks before starting to provide such services.

Self-efficiency has been found to affect the adoption and use of IB services especially in the developing countries. This is consistent with the findings of previous studies Tan & Teo (2000), Nor and Pearson (2008) and Nasri (2011) found that there is a positive relationship between self efficiency and the adoption and the use of IB services. This implies that customers are familiar with the Internet and e-mail. This suggests that people have the capabilities to adopt and use of IB services, as well as, the pattern of IB services in banks is not complex. Therefore, the decession makers should formulate a strategic plan to achieve a new and high quality infrastructure and raise nationwide awareness of IB services and the likely benefits to be attained through adoption and use. This is not easy task, as it requires the support from the corporate sector and other governmental organizations, to motivate individuals to utilize IB services. Those organizations, with the help of the ISPs and banks, should conduct some orientation sessions, which will need to be coordinated by the government agancies. Government should also enhance internet quality by increasing investment in the ICT infrastructure.

This research also found that the high cost of IB services would discourage customers from adopting and using the IB services. Therefore, governments should open the market for more competitors and issue more licenses for public communications network operators and/or ISPs. This would be reflected positively in the IB market; it would also increase the competitive business environment and raise the quality and lower the costs of the offered banking services. Providing affordable, high quality

internet access at reasonable speeds will positively influence IB adoption and use, which will have a positive effect on the success of IB.

Satisfaction "convenience" and the perceived ease of use of IB services have been found to affect the adoption, use and then the success of IB services. Therefore, governments should maintain an Internal Audit review (by internal and external experts) of IB facilities, systems and processes to enhance the quality of the IB services; this will help in making the IB services convenient for both customers and banks. Moreover, government agencies should ensure, with the help of ISPs, banks and the corporate sector, an increase in the performance of the IB services by introducing some other tools to make the services easy to use, such as increasing society's awareness of the IB services.

The legal framework for IB services in addressing the issue of security is not well-covered in numerous normative acts in most of the developing countries? Governments must identify them clearly and both parties (bankers and users) must be more familiar with them. Moreover, this study revealed that all the investigated banks offer IB services. However, the provided security features by those banks are different and need to be developed. Furthermore, many rules and regulations are provided by government and banks. The effectiveness of those rules and their functions in mitigating banking consumers' security concerns still need more investigations.

Finally, government should establish a set of comprehensive IB laws, policies and procedures to deal with the major aspects of conflicts and violations between customers, banks and even government agancies. Moreover and in order to develop IB's integration system, government should keep the banks, corporate sector, individuals and government agancies well informed of the best internet security

practice internationally to assist them in maintaining the safety and privacy of IB. However, it is the responsibility of the banks and the other organisations to maintain effective internal and technical controls in keeping with these guidelines. Establishing IB laws, policies and procedures in the developing countries will help in developing the required integration of the IB system.

7.6.2 Implications for Practice

As IB is still in its early stage especially in the developing countries, there are still considerable development opportunities. The implications of the aforementioned findings for the bank sector are significant, whereas banks need to move away from traditional bases to encourage consumers to adopt IB services more and more through appropriate strategies. Such strategies should decrease resistance to change and lower cost. As per the findings of this study, customers' awareness of and their resistance to change in the IB services relates customer attitudes when adopting these services. These services are used by people, and when they start adopting IB services, banks should encourage them to use these services increasingly through appropriate strategies in order to meet their needs. Moreover, banks should guarantee that customers are using the latest and most up-to-date IB information.

Banks should continually analyse the external environment in terms of resistance to change. In particular, banks' strategies may lead to more emphasis being placed on using different types of policies to cope with the resistance to change. As a result, banks should develop new strategies in getting their customers involved in trial sessions of their IB services to increase their awareness, experience and confidence in using the IB services without resistance to change in the traditional banking channels. Banks can motivate their customers tp adopt and encourage tp use their IB services by

providing them with limited internet access to their IB services with the help of some ISPs. Banks also are recommended to provide their new IB adopters with a virtual IB account in order to educate them and to increase their experience in using IB services, which will help to transform them from being IB adopters to being regular IB users.

It is also very important to highlight that the convenience of IB services was found to be a very important factor in motivating the new adopters of IB services to use IB services frequently, which will satisfy the banks' customers and then will ensure the SA banks provide a successful competitive performance. Therefore, it can be suggested that the internal consistent and concurrent efforts by the Saudi banks to (1) enhance their strategic orientation, (2) formalise their structures, (3) use total quality management, (4) use a diversity of financial services and (5) provide managers with relevant information will make a potential contribution to a higher performance and higher level of customer satisfaction with IB services. Therefore, it is recommended that SA banks invest in some new technologies, such as QuickStreem and Webrend software, which will enable the banks to gather and analyse extensive customer information; this will help them to understand their customers and then satisfy their customers' needs.

As stated in Chapter 3, there are three main ISPs in SA, each with a different pricing strategy. This study, in alignment with the literature, found that willingness to buy is a key factor affecting customer attitudes towards the usage of IB services. The customers' level of income was a very important factor in the adoption and use of IB services, which would result in a successful competitive advantage for banks. Consequently, banks need to analyse the size of the usage of IB services and their financial impact on a regular basis in order to build a future perspective to sustain the

required enhancement of the IB services by conducting further analysis, such as Strength Weakness Opportunity Threat (SWOT) analysis, and cost-and-benefit analysis. Thus, banks should review the internet market and link their services to the economic environment. Therefore, banks should spend more time selecting an appropriate pricing strategy, which is the most challenging job confronting banks; failure to adopt the correct IB pricing strategy, and a lack of in-depth research into the intricacies of pricing will affect the banks' IB performance.

It was anticipated that banks should find answers to the following questions from a technological perspective (Gates, 1999, 1-2): what do customers think about their services; what problems do they want them to fix; what new features do they want added; in which areas are competitors winning business from them; will changing customers' demands/needs require banks to develop new capabilities?; and what new markets are emerging that banks can enter. With regards to that, the research findings revealed that the majority of customers agree that IB and the associated technologies increase customer satisfaction and always provide a high degree of customer satisfaction with high time and cost savings. Consistently, for customer loyalty, IB does not diminish the belongingness of most customers to the bank, their propensity to advocate for their banks to others as well as their willingness for long-term relationships.

It is also recommended that banks use the revolution of the new social media as Facebook or Twitter, which is extensively used in the developed countries to inform customers, to chat with bank representatives or to lodge a formal complaint, this avenue should be explored by the financial institutions to improve communication and enhance their relationships with customers. In another word, to attract customers,

banks should develop usefulness completing financial products' offer on internet at a very close level they offer at the branch. This is good for the customer and for controlling bank costs (Wang et al., 2003).

This study also revealed that the availability of IsB is a key factor in the adoption, use and success of IB services in the Muslim countries and other countries that have Muslim comunities. Because they are operating in a Muslim country, the conventional banks should reassess their marketing strategies of IB services to be more competitive with Islamic banks. Additional emphasis is required for them to gain recognition by Islamic organizations/societies regarding no paid interest and the availability of a religious *Fatwa* document for every bank transaction. These issues will demonstrate a balance between *Shari'ah* requirements and the overriding importance of transparency.

The high cost of IB services was found to relate positively with the use and adoption of IB services. Therefore, banks should emphasise more the cost of IB service transactions for clients in order to encourage them to utilize the IB services and thus increase the demand for IB services. To do this, banks should pay more attention to analysing their IB infrastructure system and linking them to their marketing strategy by enhancing the technical performance of the banks activities. They should also optimise their operational activities in order to increase and enhance their ability to achieve the required objectives. This can help in achieving competitive advantage in the highly intensive competition among banks.

The ease of use of IB services has been found to play a vital role in the adoption, use and then success of IB services. Therefore, this research suggests that banks work in parallel with the ISPs by facilitating some training sessions for those who have

difficulties using IB services, providing customers with a 24-hour free customer support line and providing some promotions for those customers who are considered active users. There was also some slight inconsistency between Saudi banks in applying IB service systems. This inconsistency included type of banks (i.e. Islamic vs. conventional banks) and number of clients. However, the importance of IB services can vary from one bank to another. Thus, managers should rethink and show a better understanding of how IB services should function in tandem with the other services provided by Saudi banks.

The early adopters (pioneers), commanding the highest degree of opinion leadership, are a more integrated part of the local system than explorers (Rogers, 2002). This is crucial, as according to Rogers (2002) potential adopters (sceptics, paranoids and laggards) look to early adopters for advice and information. Consequently, bank managers should focus on retaining these early adopters (pioneers) of IB, by continuously ensuring. They are being provided with easy to use and secure IB services. This finding is in line with previous studies on IB, which also found that it is crucial to inspire trust by making customers feel secure. (for example, by keeping them informed, in a simple to understand language, of how their interests and privacy are safeguarded) (Yousafzai et al., 2005).

Finally, the main strengths of this research are its derivation of its factors from previous conceptual and empirical research by focusing on those factors that have the most significant relationship on IB area. Future studies could investigate other factors which have not been included in this research (e. g. loyalty, risks). It could also extend to include other region or countries operating in similar conditions to see if comparable results could be obtained. The research model was based on an extension

of the TAM and D&M IS Success Model with incorporating constructs of social influence. The findings provide useful insight for bank management in developing appropriate marketing strategies to meet customers' demands, and further to retain and expand their customer base.

7.6.3 Implications for Academic Research

As discussed in the previous section, this research has investigated the IB services across three vital different facets: adoption, use and success. Addressing these three facets can improve the knowledge and understanding of IB services, which is believed to be important for the development of more effective IB marketing strategies.

This research addresses the relationship between different factors which affect the extent of the adoption, use and success of IB services SA. It also examines the relationship between the adoption and the usage of IB services and between the usage and the success of IB services. The rationale for addressing these relationships is that management practices of IB are surrounded by a set of factors including awareness, self-efficiency, availability of IB infrastructure, cost, satisfaction, perceived ease of use, perceived usefulness, availability of IsB, age, and education. Emphasis is placed on the importance of these elements in dealing with IB services. For academics, it is important to test these relationships as any territories as possible; and this research adds support to this effort.

This study is one of the first to investigate empirically the relation of the aforementioned factors on the extent of the adoption, use and success of IB services and to examine the relationships between adoption and use and between use and success. This research employed only existing IB customers. Future research could include current non-users of the service to determine their propensity to adopt in the

future. A customer's adoption of IB cannot be inferred solely by his or her perceptions of and behaviour towards that channel of distribution without considering other competitive options. A further consideration for investigation can include context-specific perceptions of customers, for example comparing IB versus physical banking. Academics should also focus on the relationship of non-adopters and non-users on several issues such as cost, performance etc. Such studies will enhance management practices, wide their knowledge and offer new strategies for managing IB services.

The research findings indicate that security is not contributing significantly towards the adoption, use and success of IB service in SA. This is an implication that the customers feel that security is not an important factor when dealing with IB, and that due to the fact that government agencies, bankers and the services providers fail in providing the required awareness and importance of such dimension towards the usage and successful implementation of IB services. This might also be due to the level of confidence that customers have on IB services. IB is going to be very crucial for SA, having increasing percentage of younger generation population with computer literacy. Since research on IB is still in its infancy and the relevant literature is scarce, therefore the insight gained in this research may offer a foundation for future research on self-service technology and provide useful recommendations to the bankers for improving the IB services.

This Research was conducted to explore the factors influencing intentions to adopt IB services and then actual usage for successful implementation of IB services. As such, there is still room for further investigation into the replication of this study on a wider scale with more IB customers and with different national cultures, as it is essential for

the further generalization of the findings. By using a longitudinal study in the future, we could investigate our research model in different time, periods and regions and make comparisons, thus providing more insight into the phenomenon of IB adoption would be beneficial.

This research did not emphasize the demographic variables in detail by providing a comparison analysis between the different segments in order to identify their characteristics, which may play a key role for the adoption, use and successful implementation of IB. Further investigations and observations of the effect of the different segments of the demographic variables on the adoption and successful implementation of IB is also an opportunity for future research.

This study extends the research conducted in the field of IB services and marketing (e.g. Sathye, 1999; Chung and Paynter, 2002; Wungwanitchakornm, 2002; Al-Sabbagh and Molla, 2004; Chan and Lu, 2004; Pikkarainen et al., 2004; Cheng et al., 2006). While previous authors have contributed to knowledge in specific fields, this study has empirically investigated several factors combined from the literature which affect in different ways the adoption, usage and success of IB. Therefore, this study has developed models demonstrating the adoption, use and success processes for the IB services. In this context, more links with future IB studies should take into account the promotion and competition dimensions within the identified fields.

7.7 Limitations and further research agenda

The aim of this research was to identify the factors that encourage customers to adopt, use and re-use the IB in SA which can be useful for e-commerce practitioners in general and IB practitioners in particular. This study represents a contribution towards

extending TAM in predicting the factors that influence the banks' customers to accept, use and re-use IB services.

The applied measures used in this study were developed through an extensive review of the literature. In addition, the research variables, which have been used in many previous technology and IB adoption studies, were found to have adequate reliability and validity. The models of adoption, use and success have shown high, good and fair predictivs powers, respectively, (R^2=62%, 39.4% and 30%) which is comparable to other models in business and marketing studies. The unexplained variations indicate that there might be omission of some important factors that relates to the IB customers' adoption, use and success. Therefore, future studies could further extend the models to include other variables which have not been investigated in this research. Additionally, future studies are also recommended to reoperationalize the variables that have not been found significant in this study, such as security.

This research was conducted in SA, therefore, caution needs to be issued against attempts to generalise the current findings to users in other different geographical locations. Future research needs to be extended to the other Gulf States in order to generalise the results. However, an interesting area of research would be to examine IB services in other Arab countries, since they have similar cultures; this might lead to very interesting results and it would be worth comparing their results with the findings of this study. Additionally, this study conducted in all over the country of SA; future study might focus in specific areas or cities such as the central, western or eastern region in SA as the adoption and acceptance in the other parts of the country, especially in rural areas may vary. Future comparative research could target these areas to gain comparative national results.

The qualitative approach was limited in this research due to banking policies not allowing in-depth interviews. Also, the time constraints, interview accessibility, the availability of interviewees for a significant amount of time, and transportation difficulties constrained the researcher from undertaking a qualitative approach. More research is required to investigate the professionals' perspectives in the corporate sector of IB services in SA and other regions, since this study did not investigate the corporate sector and it is expected that professionals at different levels will have perceptions of IB services that differ from those of public IB users. This would provide the viewpoints of other IB users.

Although this research has examined the presense of the CVM, and considering the fact that this research investigates larg number of measures in one study, future researchers, therefore, are recommended to have additional precautions to mitigate the risk of having CVM and continuasly conduct more test to examin the presence of the CVM. Additionally, this research addressed the CMV at a later stage of the study, and some other researchers when it appears to suffer from common method bias as the issue has been ignored from the beginning of the research processes. Therefore, addressing CMV only after desk rejection is not the ideal strategy, of course. The right way is to prevent potential CMV at the research design stage using suitable remedies, such as, collecting data from multiple sources. Ex ante, before running any analyses, the collection of key information from other sources should be planned, using where possible archival data and multiple respondents. Alternatively, additional information can be collected afterwards. In addition, it is also recommend that the survey questionnaire be carefully designed; applying all or a large subset of the procedural remedies listed is section 4.13.2.3. Depending upon the nature of the questionnaire, tailor-made CMV measures can be included, a well-known example

being social desirability scales. Ex post, in the empirical stage, options are to run Harman's single-factor test, specify a complex model and explicitly control for or partial out CMV statistically (see section 4.14.3).

Additionaly, all the measures of this research are reflective measures except Satisfaction measure which is formative measure; this research treated all the researches' measures, as reflective measure. This might lead to some potential consequences of measurement model misspecification, and therefore future researchers need to evaluate cautiously the direction of causality between constructs and their measures.

With respect to marketing research, much of the research on IB has focused on explaining how IB development should be understood; using IS as part of the marketing and management innovation research. However, this study has not taken into consideration the motives for implementing IS to emphasise IB services' development. As a result, this study has not focused in depth on how IB services are actually developed over time in SA. In addition, little attention was given in this study to examining how the level of use of IB services could vary from one time to another. In addition, future research to examine the improvement in performance within local banks before and after the implementation of IB services is also considered to be appropriate. The continual periodical evaluation of the IB implementation will provide us with an indication of a positive or negative change.

Due to female's small participation in this research, the research did not show a great difference between males and females attitudes towards the adoption, use and success. This is due to the fact that the SA females are kept separate from men in public due to legal and cultural restrictions. The little number of females participated in the survey

demonstrates an access problem and difficulties in reaching females to collect primary data in a conservative environment such as SA. Saudi law does not allow direct contact and or interaction between male and females in general, and or between foreign males and Saudi females in particular. As a result, further researches could investigate the factor that might relate only with the female customers' attitudes, in SA, towards the adoption, usage and successful implementation of IB.

This study has not incorporated the benefits of IB services to assess their relation with the adoption, use, and success of IB. Thus, future research may assess the customer advantages and disadvantages associated with the use of IB services. Such assessments would provide results that were either similar to or conflicting with this research. This study also investigated the different factors relationship with the adoption, use and success of the IB services in SA, from the customers' viewpoint. However, this study did not cover such relationship from the viewpoint of the corporate sector. This will result in more participation in this research since there are more educated and worker participants in the corporate sector, and such research might lead to similar or different results, making it worthwhile to compare them with the results of this research.

It has been argued that multivariate data analysis (e.g. MR) actually signifies causality between the independent and dependent variables (e.g. Hoyle, 1995). Despite the advantages of using these approaches, the causal relationships between variables should be treated with caution due to the cross-sectional methodology of this study. Thus, it may be preferable not to draw any fixed conclusions about the directions of relationships being applicable in SA because, in reality, multivariate data analysis does nothing more than test the relations between the aggregation of the variables.

Therefore, these methods cannot overcome the limitations associated with non-experimental data gathered in a single session (Hoyle, 1995). As mentioned earlier; this research utilized the MR statistical method to test three models (adoption, use and success), where they have a direct relationships between independent variables and dependent variables in separate models. Future research might utilize the SEM to combine these three models in one model to examine all the independent and dependent variables in one model with direct and indirect relationships.

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APPENDICES

APPENDIX A

Litereture Review of IB Research

Study Topic of Analysis	Findings
Lockett and Littler (1997) *Adoption of direct banking Services in the UK*	Used a model of perceived innovation attributes and personal characteristics of adopters and non-adopters. The results indicated that the most important perceived positive attribute of direct banking was its 24/7 availability, whereas complexity and risk of service were the two negative attributes.
Mols (1998) *Strategic distribution channel strategies for IB*	The existence of barriers to the use of IB plays a crucial role in predicting the pace with which the expected development will take place.
Athanassoopoulos and Labroukos (1999) *Electronic banking in Greece*	Product-specific attributes, such as price and speed, are conceived differently by customers. Price, speed and the bank's reputation are important criteria in the adoption of e-banking.
Daniel (1999) *Provision of e-banking in the UK and Ireland*	Examined online banking issues, e.g., culture of innovation, market share, and organisational restrictions, and related them to the bank's adoption of online banking.
Liao et al. (1999) *Adoption of virtual banking in Hong Kong*	Applied the Theory of Planned Behaviour (TPB) to IB adoption. The theory was found to be partially applicable to the context. The empirical research provided limited and weak support to the constructs of the theory.
Mols et al. (1999) *Adoption process in the Danish retail banking sector*	Most Danish retail banks give more importance to offering a customer-friendly PC bank service, whereas fewer of them give equal importance to telephone, internet and branch banking. A multiple-channel strategy combining several channels is the most popular.
Sathye (1999) *Adoption of IB in Australia*	Identified security, ease of use, awareness, pricing, resistance and infrastructure issues as the main obstacles to non-adoption of IB. Young, educated, and wealthy were the most relevant customer segments.
Jayawardhena and Foley (2000) *Changes in UK bank sector*	Listed the advantages for banks: cost savings, increased customer base, mass customization, marketing and communication, innovation, and development of non-core business.
Mols (2000) *IB marketing in Denmark*	To retain loyal customers, banks must adapt and customise their offerings. First-movers will have the advantage of building customer relationships, brand name and awareness among internet users. Late-movers may learn from the mistakes of early movers and thus lower their entry costs.
Moutinho and Smith (2000) *Attitude towards human and automated banking*	Suggested that the drive towards ease of banking and convenience is favoured by the customer and, therefore, banks should find alternative strategic routes designed to improve service delivery (either human-based or technology based).
Aladwani (2001) *Drivers and challenges for online banking in Kuwait*	Drivers of IB from bank's perspective are providing faster, more reliable and easier service to customers, improving bank's image and competitive position, creating new markets, and reducing operational and administrative costs and the work force.
Jun and Cai (2001) *Service Quality in IB*	Classified 17 service quality dimensions into three categories: customer service quality, online service quality, and banking service product quality.
Gurau (2002) *E-banking intransition economies (Romania)*	The implementation of e-banking in a transition economy is limited because of: incomplete legislations, risky financial systems, slow internet connections, low internet penetration, lack of knowledge about the internet, and opportunistic behaviour of banks.
Howcroft et al. (2002) *Preferred delivery channels for purchasing financial serv.*	Branch network is still the most popular delivery channel. Consumers are not predisposed to change their behaviour radically and adopt widespread use of IB. They prefer a mix of delivery channels.
Karjaluoto et al. (2002) *Attitude formation towards online banking in Finland*	Prior experience, attitude towards computers, and demographics (occupation and household income) influenced the attitude towards online banking and actual behaviour. A typical online banking user was found to be relatively young, well educated with a high income, and a family man with a good job.
Suh and Han (2002) *IB adoption in South Korea*	Trust, perceived usefulness, and perceived ease of use were found to be most significant beliefs in explaining customer attitudes towards the use of IB.
Gerrard and Cunningham (2003) *Diffusion of IB in Singapore*	The eight influential factors of IB adoption are social desirability, compatibility, convenience, complexity, confidentiality, accessibility, economic benefits, and PC proficiency.
Joseph and Stone (2003) *US customers perception of impact of technology on service delivery*	Technology-based delivery channels are linked with the customer perceptions of how the bank services are delivered to customers; these perceptual outcomes affect their level of satisfaction.
Mattila et al. (2003) *IB adoption among mature customers in Finland*	Household income and education had a significant effect on the adoption of IB among mature consumers, whereas perceived difficulty in using computers combined with the lack of personal service in e-banking were the main barriers.
Mukherjee and Nath (2003) *Modelling trust in online banking in India*	Shared value and communication played a significant positive role regarding trust in IB and that trust had a significant positive influence on commitment.

Rotchanakitumnuai and Speece (2003) *Adoption of IB among corporate customers in Thailand*	Users of IB have more confidence in the reliability of the system, whereas non-users are much more service conscious, and do not trust financial transactions made via internet channels. Non-IB users tend to have more negative management attitudes towards adoption and are more likely to claim a lack of resources. Legal support is also a major barrier.
Sohail and Shanmugham (2003) *Malaysian customers' preference in E-banking*	Internet access, awareness of e-banking, security concerns, ease of use, and customer's reluctance to change affects the usage of IB.
Wang et al. (2003) *IB adoption in Taiwan*	Applied the TAM to IB adoption and found that perceived ease of use, perceived usefulness, and perceived credibility had a significant positive effect on people's intention to adopt IB.
Yousafzai et al. (2003) *A proposed model of e-trust for electronic banking*	A conceptual model of trust in e-banking was proposed with two main antecedents that influence customer's trust: perceived security and perceived privacy. The antecedent variables were moderated by the perceived trustworthiness attributes of the bank, which include benevolence, integrity and competence. Trust was defined as a function of the degree of risk involved in the e-banking transaction, and the outcome of trust is proposed to be a reduction in the perceived risk, leading to positive intentions towards the adoption of e-banking.
Akinci et al. (2004) *IB adoption among sophisticated consumers (Turkey)*	Non users were not aware of the benefits of IB and were not confident in using the internet for banking activities; felt they could not get help for any problem they might face during electronic transactions; and preffered going to branch despite having internet access. Users of IB emerged as technology-oriented customers who like to make use of the technology.
Chan and Lu (2004) *IB adoption in Hong Kong*	Applied Social Cognitive Theory and the TAM to IB adoption. Subjective norms, self-efficacy, perceived ease of use, and perceived usefulness play significant role in IB adoption.
Pikkarainen et al. (2004) *IB adoption in Finland*	Perceived ease of use, perceived usefulness, perceived enjoyment, awareness about IB, and concerns about security and privacy have an impact on the acceptance of IB.
Shih and Fang (2004) *IB in Taiwan*	Applied the TRA and Theory of Planned Behaviour to IB adoption context. Found relative advantage, compatibility, complexity, normative influence, efficacy, and facilitating conditions as determinants of intentions to adopt IB.
Singh (2004) *Trends in south African IB*	Security was found to be major barrier in the adoption of IB. Potential users wanted guaranteed safety and loyalty rewards to adopt IB.
Akamavi (2005) *Re-engineering service quality process mapping: e-banking process*	Show the increased efficiency, productivity and customer satisfaction levels that are the key innovation process performance. The study concludes with evidence of non-financial performance results of this type of financial service innovation.
Eriksson et al. (2005) *Customer acceptance of IB*	Applied the TAM to IB context. Trust affects the perceived ease of use and perceived usefulness, which leads to greater use of IB. (*in Estonia*)
Lassar et al. (2005) *IB adoption in USA*	Studied the relationship between consumer innovativeness and personal characteristics; found that domain-specific consumer innovation, self efficacy, and utilitarian-based web use positively affect the adoption of online banking.
Yousafzai et al. (2005) *Strategies for building and communicating trust in e-banking*	Structural assurance and situational normality affect customer's trust in e-banking. Suggests that banks need to use a portfolio of strategies to build customer trust. Communication of meaningful and timely information has the potential to influence customers trusting intentions.
Corrocher (2006) *Internet adoption in Italian banks: An empirical investigation*	First, banks with high branching intensity adopt IB more slowly than do banks with only a few branches in place. Second, adoption is negatively affected by the existence of a large customer base, once we control for assets. An important consequence of this is that the provision of financial services over the internet is a strategy directed more at attracting new customers than at strengthening the relationship with existing ones.
Kassim and Ahmed (2006) *The influence of attraction on IB*	Investigated the trust-relationship commitment model (MH94) as applied to an IB setting by adding "attraction to use IB services" as a new factor. Suggest that, in order to develop trust and to attract more users to IB, making the system easy to interact with is not going to be enough.
Shah and Siddiqui (2006) *Organisational critical success factors in adoption of e-banking at the Woolwich bank*	Banks need to implement considerable organisational changes in order to web-enable themselves. The main focus of their e-commerce strategy should be to integrate the e-banking channel with other service delivery channels to maximise benefits.
Al-Gahtani et al. (2007) *Information technology (IT) in Saudi Arabia: Culture and*	The model explained 39.1% of intention to use variance, and 42.1% of usage variance. In addition, drawing on the theory of cultural dimensions, this study formulated and tested hypotheses regarding the similarities and differences

the acceptance and use of IT	between the North American and Saudi validations of UTAUT in terms of cultural differences affected the organizational IT acceptance of two societies.
Maenpaa et al. (2007) *Consumer perceptions of IB in Finland*	Consumer perceptions differed in four of seven dimensions of IB services when examined using the criterion of expertise. The most interesting result is that security is not a concern for any of the user groups. Also, an interesting finding is that the dimensions of status, personal finances and investment proved to be U-shaped.
Yiu et al. (2007) *Factors affecting the adoption of IB in Hong Kong*	Certain factors did have a positive relationship with the adoption of IB and so strategy in the banking services sector can be refined to better meet the demands and profile of the Hong Kong market.
Al-Somali et al. (2008) *IB Acceptance in the Context of Developing Countries*	Suggested the quality of internet connection, the awareness of online banking and its benefits, the social influence and computer self efficacy have significant impact on perceived usefulness (PU) and perceived ease of use (PEOU) of online banking acceptance. Education, trust and resistance to change also have significant effects on the attitude towards the likelihood of adopting online banking.
Poon (2008) *Users' adoption of e-banking services: the Malaysian perspective*	Results indicated that all elements for ten identified factors are significant with respect to the users' adoption of e-banking services. Privacy and security were the major sources of dissatisfaction, which have significantly affected users' satisfaction. Meanwhile, accessibility, convenience, design and content are sources of satisfaction. Besides, the speed, product features availability, and reasonable service fees and charges, as well as the bank's operations management factor are critical to the success of e-banks. WAP, GPRS and 3G features from mobile devices are of no significance and do not influence the adoption of e-banking services in this study. Results also revealed that privacy, security and convenience factors play an important role in determining the users' acceptance of e-banking services with respect to demographic segmentation of age group, education level and income level.
Hosein (2009) *IB: An Empirical Study Of Adoption Rates Among Midwest Community Banks*	Indicated that customers find it difficult to use internet banking services, which leads to a decrease in the adoption of IB.
Adesina and Ayo (2010) *An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria*	The ATM still remains the most widely used form of e-banking service. Banks' customers who are active users of an e-banking system use it because it is convenient, easy to use, time saving and appropriate for their transaction needs. Also, the network security and the security of the system in terms of privacy are the major concerns of the users and constitute a hindrance to intending users.
Alsajjan and Dennis (2010) *IB Acceptance model: cross-market examination*	This study suggested the importance of attitude; attitude and behavioural intentions emerged as a single factor, denoted as "attitudinal intentions" (AI). Structural equation modelling confirmed the fit of the model, in which perceived usefulness and trust fully mediate the impact of subjective norms and perceived manageability on AI. The invariance analysis demonstrated the psychometric equivalence of the IBAM measurements between the two country groups. At the structural level, the influence of trust and system usefulness on AI varies between the two countries, emphasizing the potential role of cultures in IS adoption. The IBAM was robust and parsimonious, explaining over 80% of AI.
Al-Majali and Nik Mat (2011) *Modeling the antecedents of internet banking service adoption (IBSA) in Jordan: A Structural Equation Modeling (SEM) approach*	This study was concerned with an empirical investigation of success factors that could affect a successful internet banking services adoption (IBSA) in Jordan through the application of Innovation Diffusion Theory (IDT). The Revised Model (RM) indicated that the IDT has accomplished model fit and supports all six direct paths (perceived usefulness, perceived ease of use, compatibility, trialability, perceived trust and awareness).
Lin et al. (2011) *"Banking" on the Internet: Does Internet Banking Really Improve Bank Performance?*	This study found only modest evidence that internet banking adoption improves bank performance. Also, it suggested that younger banks and banks that are earlier adopters are more likely to enjoy the benefits of internet banking.
Mahdi (2011) *Trust and security of electronic banking services in Saudi commercial banks: Saudis versus Non Saudis Opinions*	The study revealed how Saudi banks' customers have very high trust in using the electronic banking services and how Saudi banks' customers strongly believed that the electronic banking services are more secure compared with their non Saudi counterparts. Also, it presented new empirical evidence, and enhanced understanding of the trust and the security of electronic banking technology in a Middle East country.

Mangin et al. (2011) *Modelling perceived usefulness on adopting on line banking through the tam model in a Canadian banking environment*	The study had significant meaning to encourage Canadian people to use internet for making all their personal banking operations in a secure, easy and self efficacy way.
Masocha et al. (2011) *E-banking adoption by customers in the rural milieus of South Africa: A case of Alice, Eastern Cape, South Africa*	This study provided primary information to guide banks in structuring their marketing strategies, quality improvements and business processes against the backdrop of rural milieus.
Nasri (2011) *Factors Influencing the Adoption of Internet Banking in Tunisia*	The results of the model tested clearly show that use of IB in Tunisia is influenced most strongly by convenience, risk, security and prior internet knowledge. Only information on online banking did not affect intention to use internet banking service in Tunisia. The results also proposed that demographic factors significantly affect internet banking behaviour, specifically, occupation and education level. Finally, this paper suggested that an understanding the factors affecting intention to use internet banking is very important to the practitioners who plan and promote new forms of banking in the current competitive market.
Safeena et al. (2011) *Internet Banking Adoption in an Emerging Economy: Indian Consumer's Perspective*	This study determined the factors influencing the consumer's adoption of internet banking in India and hence investigated the influence of perceived usefulness (PU), perceived ease of use (PEU) and perceived risk (PR) on use of IB. The result showed that PU, PEU and PR are the important determinants of online banking adoption.
Mansumitrchai and chiu (2012) *Adoptation of internet banking in uae: factors underlying adoption characteristics*	This study showed that adopters and non-adopters differed in their attitudes toward three factors of adoption: compatibility, trust and human contact. No significant differences were found between attitudes of adopters and non-adopters toward the issues of security, third party concern and status. An interesting finding was that human or physical contact and trust were the most important factors for non-adopters.
Moga et al. (2012) *Trust and Security in E-banking Adoption in Romania*	This study found that Romania has legal frameworks in place and banks have also adopted measures to address the issue. However, whether or not these measures were effective in mitigating banking consumers' security concerns was yet uncharted and need to be investigated.
Yousafzai and Yani-de-Soriano (2012) *Understanding customer-specific factors underpinning internet banking adoption*	The results indicated the importance of customer-specific factors in predicting actual behaviour. Technology readiness, age and gender moderate the beliefs-intention relationship. Customers with varying levels of technology-related views and demographics hold different beliefs about technology. The relationship between usefulness and behaviour was stronger for younger males with high levels of optimism and innovativeness (explorers and pioneers), whilst the relationship between ease of use and behaviour was stronger for older females with a high level of discomfort (paranoids and laggards).

Source: Yousafzai (2005) and updated by the author of this research.

APPENDIX B

Consumer Survey Questionnaire About The Adoption, Usage and Success of The Internet Banking (IB) Services In Saudi Arabia (SA)

(English Version)

Dear Participant

My name is Mohammed Eid Al-Qahtani and I am currently studying for a PhD under the supervision of Dr. Dimitrios Tsagdis at Hull University Business School, United Kingdom. The topic of my PhD focuses on customer attitudes towards internet banking in Saudi Arabia.

I am thus sending to you the accompanying questionnaire in order to gather the opinions of internet banking users in Saudi Arabia. There are no right or wrong answers; we are just interested in your opinions. Thus if you are using internet banking please answer **all questions** as best as you can and return the completed questionnaire in the provided stamped addressed envelope. If you face any difficulty or have any questions please contact me on the address below. Your response is extremely important to the success of this study and will be held in **strict confidence**.

We shall be pleased to share the findings of this research once it is completed. To that extent if you would like to receive to receive a copy of its findings please provide us with an e-mail address at the end of the survey.

Thank you very much in anticipation for your kind co-operation.

I look forward to receiving your reply.

Yours faithfully

Mr Mohammed Eid Al-Qahtani   **Dr Dimitrios Tsagdis**
P. O. Box 1411   University of Hull
Dhahran 31311   Scarborough   Management
Saudi Arabia   Centre
E-mail: alqahtanime@yahoo.com

The aim of this section is to investigate the factors which may impact on the usage of IB. Please indicate how strongly you agree or disagree with the statements? Please tick (✓) the box that best reflects your answer where:

1=Strongly disagree	2= Disagree	3= Uncertain	4= Agree	5= Strongly agree

No.	Satisfactions of the IB services	1	2	3	4	5
A1	Available 7 days and 24 hours					
A2	I can access my IB account from anywhere					
A3	It provides time savings					
A4	The transactions have low or no cost					
A5	IB services are reliable					
A6	I can get instant feedback for my transactions					
A7	It is self-service					
A8	Satisfied all my banking needs					
A9	Satisfied all my Islamic Banking (IsB) needs					
	Perceived Usefulness of the IB services	1	2	3	4	5
A10	Using the IB services enables me to utilize banking services more quickly					
A11	Using the IB services improves my performance in utilizing the banking services					
A12	Using the IB services for my banking services increases my productivity					
A13	Using the IB services enhance my effectiveness of utilising banking services					
A14	Using the IB services makes it easier for me to utilise banking services					
A15	Overall, IB is useful for me to utilise banking services					
	Perceived Ease of Use of the IB services	1	2	3	4	5
A16	Learning to use the IB services is easy for me.					
A17	I find it easy to do what I want to do in IB.					
A18	My interaction with the use of the IB services is clear and understandable.					
A19	I find IB services to be flexible to interact with					
A20	It is easy for me to become skilful at the use of the IB services.					
A21	Overall, I find the use of the IB services easy to use.					
	Security of the IB services	1	2	3	4	5
A22	Using the IB services is financially secure					
A23	I trust the ability of the IB services to protect my privacy					
A24	I trust in the technology that IB services					
A25	I trust in the IB services as a bank					
A26	Matters of security have no influence on using the IB services					
	Awareness	1	2	3	4	5
A27	I have generally received enough information about IB.					
A28	I have received enough information about the benefits of the IB services.					
	Self-Efficiency	1	2	3	4	5
A29	I can use IB even if there was no one around to show me how to do it					
A30	I can use IB with only the online help function for assistance					
A31	I could use IB even if the system was changed					

A2B: To what extent do you think the following factors are problematic in using your IB services? From 1 (major Obstacle) to 5 (No obstacle), please tick (✓) the box that best reflects your answer:

1=Major obstacle	2= Obstacle	3= Moderate obstacle	4=Minor obstacle	5= No obstacle

	Availability of the Infrastructure, Resistance to Change, Cost and availability of Islamic Banking (IsB) services online	1	2	3	4	5
A2B1	Access to Computer					
A2B2	Access to Internet					
A2B3	Using the IB services rather than using the other banking channels, e.g. telephone/branch banking/ATM					
A2B4	The cost of usage of IB					
A2B5	The availability of the IsB products and services on your IB services					

Section B. Socio-demographic characteristics

The purpose of this section is to obtain information about the socio-demographic characteristics of IB users.

B1**.** Are you?

☐Male ☐Female

B2**.** What is your religion?

☐Muslim ☐Christian ☐Buddhist ☐Hindu ☐Other (Please specify) [____]

B3. How old are you?

☐20 or less ☐21-30 ☐31-40 ☐41-50 ☐51-60 ☐61 or more

B4. How much is your yearly income in SR?

☐Equal or Less than 50,000 ☐50,001-100,000 ☐100,001-150,000 ☐150,001-200,000 ☐200,001 or more

B5. What is your education level?

☐High school ☐Community college ☐Bachelor's ☐Master's ☐Doctoral

☐Other (Please specify) [____]

B6. What is your current occupation?

☐Public sector ☐Private sector ☐Education sector ☐Self-employed

☐Military service ☐Other (Please specify) [____]

B7. What is the level of your ability to use the computer?

☐Not good at all ☐Not good ☐Beginner ☐Good ☐ Expert

B8. You often access the Internet from?

☐Home ☐School ☐Internet café ☐Work

☐Friend's house ☐Other (Please specify) [____]

B9. If you graduated from a college, what was your field of study?

☐Business   ☐Engineering   ☐Art ☐Education ☐Islamic Studies   ☐Medical

☐Law   ☐ Computer Science   ☐ NA   ☐Other (Please specify) [   ]

B10. How long have you been using the Internet?

☐ <1 Month   ☐1 - 12 Months   ☐(>1 year) - 3 Years   ☐ (>3 year) - 5 Years   ☐ > 5 years

---

B11. How frequently do you access the Internet each month?

☐1-5 times   ☐6 -10 times   ☐11-20 times   ☐21-30 times   ☐ > 30 times

---

B12. Which of these banks you have your IB access with? (Pease tick all that apply)

☐Al-Bank Al-Saudi Al-Fransi   ☐Al-Rajhi Bank
☐National Commercial Bank   ☐Bank Al-Jazira
☐Saudi Investment Bank   ☐Riyad Bank
☐Saudi British Bank   ☐Saudi Hollandi Bank
☐Arab National Bank   ☐Saudi American Bank
☐Bank Al-Bilad

B13. How long have you been using the IB?

☐ <1 Month   ☐1 - 12 Months   ☐(>1 year) - 3 Years   ☐ (>3 year) - 5 Years   ☐ > 5 years

---

B14. How frequently do you access IB information each month?

☐1-5 times   ☐6 -10 times   ☐11-20 times   ☐21-30 times   ☐ > 30 times

---

B15. I intend to use the IB in the future for a period of:

☐Never   ☐1 - 12 Months   ☐(>1 year) - 3 Years   ☐ (>3 year) - 5 Years   ☐ > 5 years

---

B16. I use my IB account to do the following (Check all that apply):

☐Check account balances   ☐View transaction history
☐Transfer money between accounts   ☐Payment of bills
☐View images of your checks   ☐Purchase of goods or services
☐Obtains interest rates on deposit products   ☐Apply for loan
☐Request copies of past statements and processed checks ☐ check my share's portfolio account
☐Order traveller's, cashier's, and regular cheques

☐Other (Please specify) [   ]

If there is anything else you can think of which you would like to tell me, please do so in the next space.

Space for any additional comments: --

Thank you very much for your assistance in completing this questionnaire.

If you would like to receive a copy of this study's findings, please provide us with an email

address _____

APPENDIX B

استبيان عن تطبيق وإستخدام ومدى نجاح الخدمات البنكية عبر الانترنت في المملكة العربية السعودية

(نسخة عربية)

(Arabic Version)

عزيزي المشارك،

انا الباحث محمد عيد القحطاني ، اقوم حاليا بدراسة الدكتوراة تحت إشراف الدكتور "ديمتري تساغديس" في كلية إدارة الأعمال في جامعة هال بالمملكة المتحدة، وأعمل على مشروع بحثي بعنوان "سلوكيات وتوجهات مستخدمي الخدمات البنكية عبر الأنترنت في المملكة العربية السعودية".

وعلى ضوء ذلك أرسل هذا الإستبيان المرفق من أجل الحصول على آراء مستخدمي الخدمات البنكية عبر الانترنت في المملكة العربية السعودية. لا يوجد هناك إجابة صائبة أو خاطئة؛ نحن نهتم فقط بآرائكم. ولذلك، إذا كنت من مستخدمي الخدمات البنكية عبر الأنترنت، نرجو منك التكرم بالإجابة على جميع الأسئلة المرفقة في حالة تمكنك من ذلك، ومن ثم قم بإرسال الإستبيان بعد إتمامه كاملاً في المظروف المعنون المرفق مع طابع ملصق، وإذا واجهتك أي صعوبة أو إذا كان لديك أي سؤال، الرجاء مراسلتي على العنوان في الأسفل. أود التوضيح أن استجابتك معي ذات أهمية بالغة وذلك من أجل إنجاح هذه الدراسة، كما أؤكد لك حرصي التام ومحافظتي على خصوصية وسرية جميع المعلومات المقدمة في هذه الإستبانة.

وإنه لمن دواعي سروري أن أطلعك على نتائج هذه الدراسة عند الإنتهاء منها، وبالتالي اذا كنت راغبا في ذلك ارجو منك التكرم بكتابة بريدك الإلكتروني في نهاية الإستبانة.

وفي الختام، اقدم الشكر الجزيل لك لتعاونك معي، ومتطلعا لإستقبال ردك في القريب العاجل.

الباحث/ محمد عيد القحطاني.

العنوان:
محمدعيد القحطاني
المملكة العربية السعودية
صندوق البريد: ١٤١١
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المشرف الدراسي:
د. ديمتري تساغديس
جامعة هال

القسم أ: العوامل المؤثرة في إستخدام الخدمات البنكية عبر الأنترنت.

الهدف من هذا القسم هو التعرف على العوامل التي قد تؤثر على إستخدام الخدمات البنكية عبر الأنترنت.
الرجاء تحديد موافقتك أو عدم موافقتك على العبارات التالية عن طريق وضع علامة (×) في المربع المناسب.

٥- أوافق بشدة		٤- أوافق	٣- محايد	٢- لا أوافق	١- لا أوافق بشدة

٥	٤	٣	٢	١	مدى ملائمة الخدمات البنكية التي تقدمها البنوك عبر الأنترنت	الرقم
					الخدمات البنكية عبر الإنترنت متاحة 7 ايام في الأسبوع و24 ساعة في اليوم.	أ١
					بإمكاني الوصول إلى الخدمات البنكية عبر الإنترنت وإستخدامها من أي مكان.	أ٢
					الخدمات البنكية عبر الإنترنت توفر الوقت.	أ٣
					العمليات البنكية عبر الإنترنت قليلة أو تكاد تكون عديمة التكلفة.	أ٤
					الخدمات البنكية عبر الإنترنت شديدة الفعالية.	أ٥
					أحصل على رد سريع على العمليات البنكية التي أقوم بها عبر الأنترنت.	أ٦
					الخدمات البنكية عبر الإنترنت توفر "خدمة ذاتية".	أ٧
					الخدمات البنكية عبر الإنترنت تلبي جميع إحتياجاتي البنكية.	أ٨
					الخدمات البنكية عبر الإنترنت تلبي جميع إحتياجاتي البنكية الإسلامية.	أ٩
٥	٤	٣	٢	١	مدى فائدة إستخدام الخدمات البنكية عبر الإنترنت	
					تمكنني من الإنتفاع من الخدمات البنكية المتوفرة بسرعة كبيرة.	أ١٠
					الخدمات البنكية عبر الإنترنت تقوم بتطوير فعالية إستخدامي للخدمات البنكية.	أ١١
					الخدمات البنكية عبر الإنترنت تقوم بزيادة انتاجيتي.	أ١٢
					الخدمات البنكية عبر الإنترنت تزيد من تأثير استخدامي للخدمات البنكية.	أ١٣
					الخدمات البنكية عبر الإنترنت تسهل علي استخدام الخدمات البنكية.	أ١٤
					بشكل عام، الخدمات البنكية عبر الإنترنت مفيدة في إستخدام الخدمات البنكية.	أ١٥
٥	٤	٣	٢	١	مدى سهولة الخدمات البنكية التي تقدمها البنوك عبر الأنترنت	
					تعلم إستخدام الخدمات البنكية التي تقدمها البنوك عبر الانترنت سهل بالنسبة لي.	أ١٦
					وجدت أنه من السهل أن أنجز معاملاتي البنكية التي تناسبني عبر الأنترنت.	أ١٧
					وجدت من تعاملي مع الخدمات البنكية عبر الأنترنت أنها واضحة وقابلة للفهم.	أ١٨
					وجدت أن الخدمات البنكية عبر الإنترنت مرنة عند التعامل معها.	أ١٩
					من السهل علي ان أكون ماهرا في إستخدام الخدمات البنكية عبر الانترنت.	أ٢٠
					بشكل عام، أجد أن إستخدام الخدمات البنكية عبر الأنترنت سهل.	أ٢١
٥	٤	٣	٢	١	مدى أمن الخدمات البنكية عبر الإنترنت	
					استخدام الخدمات البنكية عبر الإنترنت آمن ماليا.	أ٢٢
					أثق في قدرة الخدمات البنكية عبر الإنترنت في المحافظة على خصوصيتي.	أ٢٣
					أثق في تكنولوجيا الخدمات البنكية عبر الإنترنت.	أ٢٤
					اثق في الخدمات البنكية عبر الإنترنت كما اثق في البنك.	أ٢٥
					النواحي الأمنية ليس لها تأثير على استخدامي للخدمات البنكية عبر الإنترنت.	أ٢٦
٥	٤	٣	٢	١	مدى درجة المعرفة	
					بشكل عام، أحصل على معلومات كافية عن الخدمات البنكية عبر الأنترنت.	أ٢٧
					بشكل عام، أحصل على معلومات كافية عن فوائد إستخدام الخدمات البنكية عبر الأنترنت.	أ٢٨
٥	٤	٣	٢	١	مدى فاعلية قدرة الشخص	
					أستطيع استخدام الخدمات البنكية عبر الإنترنت حتى لو لم يكن معي أحد لمساعدتي.	أ٢٩
					أستطيع استخدام الخدمات البنكية عبر الإنترنت فقط عندما تتوفر المساعدة عبر الإنترنت.	أ٣٠
					أستطيع استخدام الخدمات البنكية عبر الإنترنت حتى لو تم تغيير طريقة إستخدامها.	أ٣١

أ٢ب: الرجاء تحديد مدى العائق الذي تشكله العبارات التالية لإستخدامك الخدمات البنكية عبر الأنترنت، وذلك بوضع علامة (×) في المربع المناسب:

١- عائق بشدة	٢- عائق	٣- محايد	٤-لا يشكل عائق	٥-ليس عائق بشدة

٥	٤	٣	٢	١	مدى توفر البنية التحتية للخدمات البنكية عبرالأنترنت، مقاومة التغيير ، التكلفة ومدى توفرالخدمات البنكية الإسلامية عبر الإنترنت	
					إمكانية توفر الحاسب الآلي.	أ٢ ب١
					إمكانية توفر الأنترنت.	أ٢ ب٢
					إستخدام الخدمات البنكية عبر الأنترنت عوضا عن إستخدام القنوات البنكية الأخرى مثل الهاتف المصرفي أو الفروع البنكية أو أجهزة الصرف الآلي.	أ٢ ب٣
					تكلفة استخدام الخدمات البنكية عبر الأنترنت.	أ٢ ب٤
					مدى توفر الخدمات البنكية الإسلامية عبر الإنترنت.	أ٢ ب٥

القسم ب: قسم الخصائص السكانية (الديموغرافية) للمجتمع.

الغرض من هذا القسم هو الحصول على معلومات عن خصائص المجتمع السكانية (الديموغرافية) لمستخدمي الخدمات البنكية عبر الأنترنت.

ب١. الجنس؟
☐ ذكر   ☐ أنثى

ب٢.ما هي ديانتك؟
☐ مسلم   ☐ مسيحي   ☐ بوذي   ☐ هندوسي   ☐ أخرى (الرجاء تحديدها) -----------------

---

ب٣. العمر؟
☐تحت ٢٠   ☐٢١-٣٠   ☐٣١-٤٠   ☐٤١-٥٠   ☐٥١-٦٠   ☐٦١وأكثر

ب٤. الدخل بالريال السعودي(السنوي)؟
☐ ٥٠٠٠٠ أو أقل   ☐١٥٠٠٠-١٠٠٠٠٠   ☐١٠٠٠٠١-١٥٠٠٠٠
☐١٥٠٠١-٢٠٠٠٠٠   ☐ ٢٠٠٠١ أو أعلى

ب٥. ما هو مستواك التعليمي؟
☐الثانوية العامة   ☐الكلية المتوسطة (دبلوم)   ☐درجة البكالريوس
☐درجة الماجستير   ☐درجة الدكتوراة   ☐أخرى (الرجاء تحديدها) ------------------

---

ب٦. الوظيفة الحالية؟
☐حكومية   ☐القطاع الخاص   ☐أكاديمية   ☐أعمال حرة
☐عسكرية   ☐أخرى (الرجاء تحديدها)--------------------------------

---

ب٧. مستوى قدرتك في إستخدام الكمبيوتر؟
☐غير جيد أطلاقا   ☐غير جيد   ☐مبتدئ   ☐جيد   ☐خبير

ب٨. من أين يكون إتصالك بالأنترنت غالبا؟
☐البيت   ☐المدرسة   ☐مقهى أنترنت   ☐العمل
☐بيت صديق   ☐أخرى (الرجاء تحديدها)--

ب٩. إذا كنت حاصلا على شهادة جامعية، فهي في مجال؟
☐الأعمال   ☐الهندسة   ☐التعليم   ☐الفن   ☐الطب
☐دراسات إسلامية   ☐القانون   ☐علوم الكمبيوتر   ☐ لست خريجاً جامعياً   ☐آخر (الرجاء تحديده)----------

ب١٠. منذ متى تستخدم خدمة الأنترنت؟

☐أقل من شهر   ☐١-١٢شهر   ☐أكثر من سنة -٣سنة   ☐ أكثر من 3 سنوات-٥سنة   ☐أكثر من ٥سنوات

ب١١. كم عدد مرات إستخدامك للأنترنت شهريا؟

☐١-٥ مرات   ☐٦-١٠ مرات   ☐١١-٢٠ مرة   ☐٢١-٣٠ مرة   ☐أكثر من ٣١ مرة

ب١٢. في أي من هذه البنوك لديك خدمة بنكية عبر الأنترنت (بإمكانك إختيار أكثر من بنك)؟

☐البنك السعودي الفرنسي   ☐بنك الراجحي
☐البنك الأهلي التجاري   ☐بنك الجزيرة
☐البنك السعودي للأستثمار   ☐بنك الرياض
☐البنك السعودي البريطاني   ☐البنك السعودي الهولندي
☐البنك العربي الوطني   ☐البنك السعودي الأمريكي
☐بنك البلاد

ب١٣. منذ متى وأنت تستخدم الخدمات البنكية عبر الأنترنت؟

☐أقل من شهر   ☐١-١٢شهر   ☐أكثر من سنة -٣سنة   ☐ أكثر من 3 سنوات-٥سنة   ☐أكثر من ٥سنوات

ب١٤. كم عدد المرات التي تجري فيها معاملاتك البنكية عبر الأنترنت شهريا؟

☐١-٥ مرات   ☐٦-١٠ مرات   ☐١١-٢٠ مرة   ☐٢١-٣٠ مرة   ☐أكثر من ٣١ مرة

ب١٥. أفكر في إستخدام الخدمات البنكية عبر الأنترنت في الفترة القادمة من:

☐ ولا مرة   ☐١-١٢شهر   ☐أكثر من سنة -٣سنة   ☐ أكثر من 3 سنوات-٥سنة   ☐أكثر من ٥سنوات

ب١٦. أستخدم الخدمات البنكية عبر الأنترنت لإجراء ما يلي: (بإمكانك إختيار أكثر من خدمة):

☐مراجعة رصيد حسابي
☐للاطلاع على سجل العمليات التي قمت بها
☐للتحويل بين الحسابات
☐لتسديد الفواتير
☐للإطلاع على صور الشيكات المدفوعة
☐لشراء بضائع أو خدمات
☐الحصول على نسبة فائدة على الودائع
☐لطلب قروض
☐لطلب نسخ من بيانات سابقة أو شيكات مدفوعة
☐لمراجعة حساب محفظة أسهمي
☐لطلب شيكات سياحية/مصرفية
☐غير ذلك (الرجاء تحديدها)---

ـأنتهت الأسئلةـ

*إذا كان لديك ما ترغب إضافته فالرجاء كتابته هنا:

شكرا جزيلا لك لتعاونك معي بإكمالك هذا الإستبيان.
في حالة رغبتك بالحصول على نسخة من نتائج هذه الدراسة عند إنتهاء البحث، فالرجاء كتابة بريدك الإلكتروني الخاص بك.

البريد الألكتروني:-------------------------------

APPENDIX C

The First Follow-Up Postal Reminder

(English Version)

Dear Participant

My name is Mohammed Eid Al-Qahtani and I am currently studying for a PhD under the supervision of Dr. Dimitrios Tsagdis at Hull University Business School, United Kingdom. The topic of my PhD focuses on customer attitudes towards internet banking in Saudi Arabia.

I am sending this letter as a first reminder; as I have sent the accompanying questionnaire to you before 6 weeks, seeking your participation in this survey. Unfortunately, we have not received your reply and it will be highly appreciated if you kindly provide us with your valuable feedback in order to gather your opinions of internet banking usage in Saudi Arabia. We would like to remind that this study is very important for the improvement the Internet Banking market and building an Internet Banking integrated system in Saudi Arabia. Also, I would like to remind you that you response is extremely important to the success of this study and would like to reassure you that your response will be held in **strict confidence**.

Again, I would like to remind that there are no right or wrong answers; we are just interested in your opinions. Thus if you are using Internet Banking please answer **all questions** as best as you can and return the completed questionnaire in the provided stamped addressed envelope. If you face any difficulty or have any questions please contact me on the address below.

We shall be pleased to share the findings of this research once it is completed. To that extent if you would like to receive a copy of its findings please provide us with an e-mail address at the end of the survey. Your kind co-operation in participating in this survey will be appreciated.

I look forward to receiving your reply.

Yours faithfully

Mr Mohammed Eid Al-Qahtani   **Dr Dimitrios Tsagdis**
P. O. Box 1411   University of Hull
Dhahran 31311   Scarborough Management Centre
Saudi Arabia
E-mail:
alqahtanime@yahoo.com

APPENDIX C

رسالة تذكير بريدية أولى للمشاركة في الاستبانه

(نسخة عربية)

(Arabic Version)

عزيزي المشارك،

انا الباحث محمد عيد القحطاني ، اقوم حاليا بدراسة الدكتوراة تحت إشراف الدكتور "ديمتري تساغديس" في كلية إدارة الأعمال في جامعة هال بالمملكة المتحدة، وأعمل على مشروع بحثي بعنوان "سلوكيات وتوجهات مستخدمي الخدمات البنكية عبر الأنترنت في المملكة العربية السعودية".

وعلى ضوء ذلك أرسل لك هذا التذكير الأول لكي أخبركم بانني قد ارسلت لك هذا الإستبيان المرفق, قبل ستة اسابيع من أجل الحصول على مرئياتك في استخدام الخدمات البنكية عبر الانترنت في المملكة العربية السعودية. ولسوء الحظ لم يتسنى لنا الحصول عل مرئياتك القيمة في هذه الاستخدامات. كما أود تذكيرك بان هذه الدراسة مهمة في تطور وتكامل نظام التعاملات البنكية في المملكة العربية السعودية. كما أود التوضيح أن استجابتك لهذه الاستبانه ذات أهمية بالغة وذلك من أجل إنجاح هذه الدراسة. كما أود ان أعيد تذكيرك من تأكيدي لك حرصي التام ومحافظتي على خصوصية وسرية جميع المعلومات المقدمة في هذه الإستبانة.

كما أود افادتكم من أنه لا يوجد هناك إجابة صائبة أو خاطئة؛ نحن نهتم فقط بآرائكم. ولذلك، إذا كنت من مستخدمي الخدمات البنكية عبر الأنترنت، نرجو منك التكرم بالإجابة على جميع الأسئلة المرفقة في حالة تمكنك من ذلك، ومن ثم قم بإرسال الإستبيان بعد إتمامه كاملاً في المظروف المعنون المرفق مع طابع ملصق، وإذا واجهتك أي صعوبة أو إذا كان لديك أي سؤال، الرجاء مراسلتي على العنوان في الأسفل.

وإنه لمن دواعي سروري أن أطلعك على نتائج هذه الدراسة عند الإنتهاء منها، وبالتالي اذا كنت راغبا في ذلك ارجو منك التكرم بكتابة بريدك الإلكتروني في نهاية الإستبانة.

وفي الختام، سوف أكون مقدرا لكم ارسالنا مرئياتك والرد علينا باجابة استفسارات هذه الاستبانه، ومتطلعا لإستقبال ردك في القريب العاجل.

الباحث/ محمد عيد القحطاني.

العنوان:
محمد عيد القحطاني
المملكة العربية السعودية
صندوق البريد: ١٤١١
الرمز البريدي: ٣١٣١١
البريد الألكتروني:alqahtanime@yahoo.com

المشرف الدراسي:
د. ديمتري تساغديس
جامعة هال

APPENDIX D

The Second Follow-Up Postal Reminder

(English Version)

Dear Participant

My name is Mohammed Eid Al-Qahtani and I am currently studying for a PhD under the supervision of Dr. Dimitrios Tsagdis at Hull University Business School, United Kingdom. The topic of my PhD focuses on customer attitudes towards internet banking in Saudi Arabia.

I am sending this letter as a second reminder; as I have sent the accompanying questionnaire to you before 10 weeks, seeking your participation in this survey. Unfortunately, we have not received your reply and it will be highly appreciated if you kindly provide us with your valuable feedback in order to gather your opinions of internet banking usage in Saudi Arabia. We would like to remind that this study is very important for the improvement the Internet Banking market and building an Internet Banking integrated system in Saudi Arabia. Also, I would like to remind you that you response is extremely important to the success of this study and would like to reassure you that your response will be held in **strict confidence**.

Again, I would like to remind that there are no right or wrong answers; we are just interested in your opinions. Thus if you are using Internet Banking please answer **all questions** as best as you can and return the completed questionnaire in the provided stamped addressed envelope. If you face any difficulty or have any questions please contact me on the address below.

We shall be pleased to share the findings of this research once it is completed. To that extent if you would like to receive a copy of its findings please provide us with an e-mail address at the end of the survey. Your kind co-operation in participating in this survey will be appreciated.

I look forward to receiving your reply.

Yours faithfully

Mr Mohammed Eid Al-Qahtani   **Dr Dimitrios Tsagdis**
P. O. Box 1411   University of Hull
Dhahran 31311   Scarborough Management Centre
Saudi Arabia
E-mail:
alqahtanime@yahoo.com

APPENDIX D

رسالة تذكير بريدية ثانية للمشاركة في الاستبانه

(نسخة عربية)

(Arabic Version)

عزيزي المشارك،

انا الباحث محمد عيد القحطاني ، اقوم حاليا بدراسة الدكتوراة تحت إشراف الدكتور "ديمتري تساغديس" في كلية إدارة الأعمال في جامعة هال بالمملكة المتحدة، وأعمل على مشروع بحثي بعنوان "سلوكيات وتوجهات مستخدمي الخدمات البنكية عبر الأنترنت في المملكة العربية السعودية".

وعلى ضوء ذلك أرسل لك هذا التذكير الثاني لكي أخبركم بانني قد ارسلت لك هذا الإستبيان المرفق٬ قبل عشرة اسابيع من أجل الحصول على مرئياتك في استخدام الخدمات البنكية عبر الانترنت في المملكة العربية السعودية. ولسوء الحظ لم يتسنى لنا الحصول عل مرئياتك القيمة في هذه الاستخدامات. كما أود اعادة تذكيرك بان هذه الدراسة مهمة في تطور وتكامل نظام التعاملات البنكية في المملكة العربية السعودية. كما أود التوضيح أن استجابتك لهذه الأستبانه ذات أهمية بالغة وذلك من أجل إنجاح هذه الدراسة. كما أود ان أعيد تذكيرك من تأكيدي لك حرصي التام ومحافظتي على خصوصية وسرية جميع المعلومات المقدمة في هذه الإستبانة.

كما أود افادتكم من أنه لا يوجد هناك إجابة صائبة أو خاطئة؛ نحن نهتم فقط بآرائكم. ولذلك، إذا كنت من مستخدمي الخدمات البنكية عبر الأنترنت، نرجو منك التكرم بالإجابة على جميع الأسئلة المرفقة في حالة تمكنك من ذلك، ومن ثم قم بإرسال الإستبيان بعد إتمامه كاملاً في المظروف المعنون المرفق مع طابع ملصق، وإذا واجهتك أي صعوبة أو إذا كان لديك أي سؤال، الرجاء مراسلتي على العنوان في الأسفل.

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وفي الختام، سوف أكون مقدرا لكم ارسالنا مرئياتك والرد علينا باجابة استفسارات هذه الاستبانه، ومتطلعا لإستقبال ردك في القريب العاجل.

الباحث/ محمد عيد القحطاني.

العنوان:
محمدعيد القحطاني
المملكة العربية السعودية
صندوق البريد: ١٤١١
الرمز البريدي: ٣١٣١١
البريد الألكتروني:alqahtanime@yahoo.com

المشرف الدراسي:
د. ديمتري تساغديس
جامعة هال

APPENDIX E

Questionnaire Coding Procedure

The aim of this section is to investigate the factors which may impact on the usage of IB.
Please indicate how strongly you agree or disagree with the statements? Please tick (✓) the
box that best reflects your answer where:

1=Strongly disagree	2= Disagree	3= Uncertain	4= Agree	5= Strongly agree

No.	Satisfactions of the IB services	1	2	3	4	5
A1	Available 7 days and 24 hours					
A2	I can access my IB account from anywhere					
A3	It provides time savings					
A4	The transactions have low or no cost					
A5	IB services are reliable					
A6	I can get instant feedback for my transactions					
A7	It is self-service					
A8	Satisfied all my banking needs					
A9	Satisfied all my Islamic Banking (IsB) needs					
	Perceived Usefulness of the IB services	1	2	3	4	5
A10	Using the IB services enables me to utilize banking services more quickly					
A11	Using the IB services improves my performance in utilizing the banking services					
A12	Using the IB services for my banking services increases my productivity					
A13	Using the IB services enhance my effectiveness of utilising banking services					
A14	Using the IB services makes it easier for me to utilise banking services					
A15	Overall, IB is useful for me to utilise banking services					
	Perceived Ease of Use of the IB services	1	2	3	4	5
A16	Learning to use the IB services is easy for me.					
A17	I find it easy to do what I want to do in IB.					
A18	My interaction with the use of the IB services is clear and understandable.					
A19	I find IB services to be flexible to interact with					
A20	It is easy for me to become skilful at the use of the IB services.					
A21	Overall, I find the use of the IB services easy to use.					
	Security of the IB services	1	2	3	4	5
A22	Using the IB services is financially secure					
A23	I trust the ability of the IB services to protect my privacy					
A24	I trust in the technology that IB services					
A25	I trust in the IB services as a bank					
A26	Matters of security have no influence on using the IB services					
	Awareness	1	2	3	4	5
A27	I have generally received enough information about IB.					
A28	I have received enough information about the benefits of the IB services.					
	Self-Efficiency	1	2	3	4	5
A29	I can use IB even if there was no one around to show me how to do it					
A30	I can use IB with only the online help function for assistance					
A31	I could use IB even if the system was changed					

A2B: To what extent do you think the following factors are problematic in using your IB services? From 1 (major Obstacle) to 5 (No obstacle), please tick (✓) the box that best reflects your answer:

1=Major obstacle	2= Obstacle	3= Moderate obstacle	4=Minor obstacle	5= No obstacle

	Availability of the Infrastructure, Resistance to Change, Cost and availability of Islamic Banking (IsB) services online	**1**	**2**	**3**	**4**	**5**
A2B1	Access to Computer					
A2B2	Access to Internet					
A2B3	Using the IB services rather than using the other banking channels, e.g. telephone/branch banking/ATM					
A2B4	The cost of usage of IB					
A2B5	The availability of the IsB products and services on your IB services					

Section B. Socio-demographic characteristics

The purpose of this section is to obtain information about the socio-demographic characteristics of IB users.

B1. Are you?

☐Male   (1)   ☐Female (2) (

B2. What is your religion?

☐Muslim (1)   ☐Christian (2) ☐Buddhist (3) ☐Hindu (4)   ☐Other (Please specify) (5)

B3. How old are you?

☐20 or less   (1)   ☐21-30 (2)   ☐31-40 (3)   ☐41-50 (4)   ☐51-60 (5)   ☐61 or more (6)

B4. How much is your yearly income in SR?

☐Equal or Less than 50,000 (1) ☐50,001-100,000 (2)   ☐100,001-150,000 (3) ☐150,001-200,000 (4) ☐200,001 or more (5)

B5. What is your education level?

☐High school (1)   ☐Community college (2)   ☐Bachelor's (3)   ☐Master's (4) ☐Doctoral (5)

☐Other (Please specify) (6)

B6. What is your current occupation?

☐ Public sector (1)   ☐Private sector (2)   ☐Academic sector (3)   ☐Self-employee (4)

☐Military sector (5)   ☐Other (Please specify) (6)

B7. What is the level of your ability to use the computer?

☐Not good at all (1)   ☐Not good (2)   ☐Beginner (3)   ☐Good (4)   ☐ Expert (5)

B8. You often access the Internet from?

☐Home   (1)   ☐School (2)   ☐Internet café (3)   ☐Work (4)

☐Friend's house   (5)   ☐Other (Please specify) (6)

B9. If you graduated from a college, what was your field of study?

☐Business (1)   ☐Engineering (2)   ☐Art (3)   ☐Education (4)   ☐Islamic Studies (5) ☐Medical (6)

☐Law (7)   ☐ Computer Science   (8)   ☐ NA (9) ☐Other (Please specify) (10)

B10. How long have you been using the Internet?

☐ <1 Month (1) 1 - 12 Months (2) ☐(>1 year) - 3 Years (3) ☐ (>3 year) - 5 Years (4) ☐ > 5 years (5)

B11. How frequently do you access the Internet each month?

☐1-5 times (1) ☐6 -10 times (2)   ☐11-20 times (3)   ☐21-30 times (4)   ☐ > 30 times (5)

B12. Which of these banks you have your IB access with? (Pease tick all that apply)

(1) ☐Al-Bank Al-Saudi Al-Fransi   (7) ☐Al-Rajhi Bank
(2) ☐National Commercial Bank   (8) ☐Bank Al-Jazira
(3) ☐Saudi Investment Bank   (9) ☐Riyad Bank
(4) ☐Saudi British Bank   (10) ☐Saudi Hollandi Bank
(5) ☐Arab National Bank   (11) ☐Saudi American Bank
(6) ☐Bank Al-Bilad

B13. How long have you been using the IB?

☐ <1 Month (1) ☐1 - 12 Months (2) ☐(>1 year) - 3 Years (3) ☐ (>3 year) - 5 Years (4) ☐ > 5 years (5)

B14. How frequently do you access IB information each month?

☐1-5 times (1)   ☐6 -10 times (3)   ☐11-20 times (4)   ☐21-30 times   (5)   ☐ > 30 times (6)

B15. I intend to use the IB in the future for a period of:

☐ Never (1) ☐1 - 12 Months (2) ☐(>1 year) - 3 Years (3) ☐ (>3 year) - 5 Years (4) ☐ > 5 years (5)

B16. I use my IB account to do the following (Check all that apply):

(1) ☐Check account balances   (8) ☐View transaction history
(2) ☐Transfer money between accounts   (9) ☐Payment of bills
(3) ☐View images of your checks   (10)☐Purchase of goods or services
(4) ☐Obtains interest rates on deposit products   (11)☐Apply for loan
(5) ☐Request copies of past statements & processed checks (12)☐ check my share's portfolio
(6) ☐Order traveller's, cashier's, and regular cheques
(7) ☐Other (Please specify)

If there is anything else you can think of which you would like to tell me, please do so in the next space. Space for any additional comments: --
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--**--**

Thank you very much for your assistance in completing this questionnaire.

If you would like to receive a copy of this study's findings, please provide us with an

email address _____

APPENDIX F

Questionnaire Items Characteristics

Satisfactions (Time Saving) of the IB services

Items	M	Sd	Min	Max	Skn	Kurtosis
Available 7 days and 24 hours	3.230	0.980	1.00	5.00	0.750	-0.530
It provides time savings	3.540	1.0156	1.00	5.00	0.540	-0.700
I can get instant feedback for my transactions	3.817	0.960	1.00	5.00	0.666	0.231
Total mean	**3.529**	**0.9852**	**N = 228**			

Satisfactions (Convenience) of the IB services

Items	M	Sd	Min	Max	Skn	Kurtosis
The transactions have low or no cost	3.500	0.890	1.00	5.00	0.430	0.227
IB services are reliable	3.370	0.5236	1.00	5.00	0.394	0.400
It is self-service	3.291	0.810	1.00	5.00	0.820	0.450
Total mean	**3.387**	**0.7412**	**N = 228**			

Satisfactions (Fulfilment) of the IB services

Items	M	Sd	Min	Max	Skn	Kurtosis
I can access my IB account from anywhere	3.530	0.3352	1.00	5.00	0.870	2.100
Satisfied all my banking needs	3.263	0.760	1.00	5.00	0.620	1.718
Satisfied all my Islamic Banking (IsB) needs	2.930	0.880	1.00	5.00	0.733	1.720
Total mean	**3.241**	**0.6584**	**N = 228**			

Perceived Usefulness of the IB services

Items	M	Sd	Min	Max	Skn	Kurtosis
Using the IB services enables me to utilize banking services more quickly	3.900	0.840	1.00	5.00	-0.370	-0.618
Using the IB services improves my performance in utilizing the banking services	3.700	0.500	1.00	5.00	-0.600	0.780
Using the IB services for my banking services increases my productivity	2.500	0.800	1.00	5.00	-0.340	0.570
Using the IB services enhance my effectiveness of utilising banking services	2.344	0.900	1.00	5.00	-0.610	-0.440
Using the IB services makes it easier for me to utilise banking services	3.200	0.870	1.00	5.00	-0.640	-0.340
Overall, IB is useful for me to utilise banking services	3.100	0.5624	1.00	5.00	-0.362	0.540
Total mean	**3.124**	**.7454**	**N = 228**			

Perceived Ease of Use (Easiness) of the IB services

Items	M	Sd	Min	Max	Skn	Kurtosis
Learning to use the IB services is easy for me.	3.640	0.980	1.00	5.00	0.330	0.960
I find it easy to do what I want to do in IB.	3.020	1.070	1.00	5.00	0.300	0.730
It is easy for me to become skilful at the use of the IB services.	2.890	0.990	1.00	5.00	0.462	0.620
Overall, I find the use of the IB services easy to use.	3.786	1.044	1.00	5.00	0.500	0.670
Total mean	**3.334**	**1.0210**	**N = 228**			

Perceived Ease of Use (Interaction) of the IB services

Items	M	Sd	Min	Max	Skn	Kurtosis
My interaction with the use of the IB services is clear and understandable.	3.860	0.910	1.00	5.00	-0.780	1.050
I find IB services to be flexible to interact with	3.276	1.0664	1.00	5.00	-0.524	1.002
Total mean	**3.568**	**.9882**	**N = 228**			

Security of the IB services

Items	M	Sd	Min	Max	Skn	Kurtosis
Using the IB services is financially secure	2.500	1.0400	1.00	5.00	-0.780	-0.820
I trust the ability of the IB services to protect my privacy	3.260	1.0500	1.00	5.00	-0.620	0.410
I trust in the technology that IB services	3.670	0.7146	1.00	5.00	-0.750	0.715
I trust in the IB services as a bank	3.300	1.0900	1.00	5.00	-0.500	-0.650
Matters of security have no influence on using the IB services	2.600	1.1900	1.00	5.00	-0.350	-0.760
Total mean	**2.890**	**1.0241**	**N = 228**			

Awareness

Items	M	Sd	Min	Max	Skn	Kurtosis
I have generally received enough information about IB.	3.962	0.914	1.00	5.00	-0.950	0.890
I have received enough information about the benefits of the IB services.	3.520	0.800	1.00	5.00	-0.880	0.652
Total mean	**3.741**	**0.857**	**N = 228**			

Self-Efficiency

Items	M	Sd	Min	Max	Skn	Kurtosis
I can use IB even if there was no one around to show me how to do it	3.676	0.5906	1.00	5.00	-0.740	1.320
I can use IB with only the online help function for assistance	3.321	1.1050	1.00	5.00	-0.508	1.432
I could use IB even if the system was changed	3.680	0.7500	1.00	5.00	-0.690	1.139
Total mean	**3.559**	**0.8152**	**N = 228**			

Availability of Infrastructure

Items	M	Sd	Min	Max	Skn	Kurtosis
Access to Computer	3.742	0.9972	1.00	5.00	-0.992	0.930
Access to Internet	3.480	0.8820	1.00	5.00	-0.978	0.594
Total mean	**3.611**	**0.9396**		**N = 228**		

Resistance to change

Items	M	Sd	Min	Max	Skn	Kurtosis
Using the IB services rather than using the other banking channels, e.g. telephone/branch banking/ATM	2.951	1.1170	1.00	5.00	-0.715	-0.703

High cost

Items	M	Sd	Min	Max	Skn	Kurtosis
The cost of usage of IB	3.771	0.9007	1.00	5.00	-.212	1.112

Availability of IsB

Items	M	Sd	Min	Max	Skn	Kurtosis
The availability of the IsB products and services on your IB services	3.689	.6325	1.00	5.00	-.681	-.369

APPENDIX G

Business School Research Ethics Committee Review and Support Letter

HULL UNIVERSITY BUSINESS SCHOOL

To whom it may concern

Customer Attitudes towards Internet Banking

I am aware of the empirical research plans of Mohammed Eid Al-Qahtani relating to customer attitudes towards Internet Banking. I have studied the plans in the light of the ethical policies of both the University and the Business School.

I am satisfied that the ethical requirements that we apply are being complied with. The research has my support.

Professor Mike Tayles
Professor of Accounting and Finance
Chair, Business School Research Ethics Committee

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APPENDIX H

Research Correlation Cronbach's Alpha and Pearson coefficients of each item with item-total for the scale

SN		Items	Pearson correlation coefficients of each item with item-total for the scale	Total Correlation Cronbach's Alpha if Item Deleted
Satisfactions of the IB services	1	Available 7 days and 24 hours	.473**	.722
	2	I can access my IB account from anywhere	.570**	.819
	3	It provides time savings	.463**	.745
	4	The transactions have low or no cost	.396**	.825
	5	IB services are reliable	.592**	.704
	6	I can get instant feedback for my transactions	.522**	.723
	7	It is self-service	.614**	.811
	8	Satisfied all my banking needs	.537**	.872
	9	Satisfied all my Islamic Banking (IsB) needs	.472**	.769
Perceived Usefulness of the IB services	10	Using the IB services enables me to utilize banking services more quickly	.686**	.832
	11	Using the IB services improves my performance in utilizing the banking services	.636**	.863
	12	Using the IB services for my banking services increases my productivity	.687**	.820
	13	Using the IB services enhance my effectiveness of utilising banking services	.651**	.824
	14	Using the IB services makes it easier for me to utilise banking services	.662**	.812
	15	Overall, IB is useful for me to utilise banking services	.684**	.709
Perceived Ease of Use of the IB services	16	Learning to use the IB services is easy for me.	.676**	.721
	17	I find it easy to do what I want to do in IB.	.657**	.727
	18	My interaction with the use of the IB services is clear and understandable.	.722**	.677
	19	I find IB services to be flexible to interact with	.697**	.823
	20	It is easy for me to become skilful at the use of the IB services.	.704**	.784
	21	Overall, I find the use of the IB services easy to use.	.707**	.808
Security of the IB services	22	Using the IB services is financially secure	.591**	.840
	23	I trust the ability of the IB services to protect my privacy	.593**	.838
	24	I trust in the technology that IB services	.576**	.845
	25	I trust in the IB services as a bank	.564**	.827
	26	Matters of security have no influence on using the IB services	.491**	.850
Awareness	27	I have generally received enough information about IB.	.649**	.890
	28	I have received enough information about the benefits of the IB services.	.642**	.690
Self-Efficiency	29	I can use IB even if there was no one around to show me how to do it	.558**	.785
	30	I can use IB with only the online help function for assistance	.226**	.882
	31	I could use IB even if the system was changed	.579**	.943
Availability of Infrastructure	32	Access to Computer	.348**	.782
	33	Access to Internet	.378**	.778
Resistance to change	34	Using the IB services rather than using the other banking channels, e.g. telephone/branch	.491**	.796

		banking/ATM		
High cost	35	The cost of usage of IB	.379**	.725
availability of IsB services	36	The availability of the IsB products and services on your IB services	.351**	.852
Cronbach's Alpha = 0.80			**N = 36**	

** Correlation is significant at the 0.01 level

APPENDIX I

Common Method Variance Harman's Single-Factor Test

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.117	33.659	33.659	12.117	33.659	33.659
2	2.578	7.160	40.819			
3	2.355	6.542	47.361			
4	1.879	5.221	52.581			
5	1.638	4.549	57.130			
6	1.280	3.556	60.687			
7	1.161	3.225	63.912			
8	1.070	2.972	66.884			
9	.980	2.722	69.606			
10	.895	2.486	72.092			
11	.846	2.351	74.443			
12	.760	2.111	76.554			
13	.723	2.010	78.564			
14	.659	1.830	80.394			
15	.620	1.722	82.115			
16	.570	1.583	83.698			
17	.522	1.451	85.150			
18	.509	1.415	86.565			
19	.476	1.321	87.886			
20	.448	1.243	89.129			
21	.429	1.192	90.322			
22	.394	1.094	91.416			
23	.356	.990	92.406			
24	.322	.895	93.301			
25	.287	.798	94.099			
26	.281	.781	94.880			
27	.255	.710	95.590			
28	.245	.681	96.271			
29	.229	.637	96.908			
30	.223	.618	97.526			
31	.192	.532	98.059			
32	.177	.490	98.549			
33	.157	.436	98.985			
34	.143	.398	99.383			
35	.116	.323	99.706			
36	.106	.294	100.000			

Extraction Method: Principal Component Analysis.

APPENDIX J

SA Comercial Banks History

SA Comercial Banks History

SA Commercial Banks

In this section, an overview is given of the history, development and origins of banking in SA. Starting with the history, the evolution of the banking industry in SA can be divided into five broad stages:

1. The early years (1950-1970).
2. Consolidation (1970-1980).
3. The turbulent years (1980-1990).
4. The economic boom and banking growth (1990-2000).
5. The present Saudi banking system (2000 – present).

The Early Years (1950-1970)

The modern banking system in SA has its roots in the creation of SAMA in 1952, with a mandate for monetary stability. Before this, branches of a few foreign banks and some money-changers had provided all the financial services requirements of the trading community. By 1952, the inflow of royalties from the increasing production of and demand for oil had contributed to a sharp rise in government revenues and expenditure. As this enhanced the domestic economy, the demand for financial services rose sharply. As a result, the government encouraged a competitive banking environment by licensing new domestic and foreign banks in SA. SAMA's creation was followed by the establishment of more foreign bank branches, including the Banque du Cairo and the First National City Bank of New York. Some domestic banks were also licensed. NCB was licensed in 1953 and Riyad Bank commenced operations in 1957, followed by Al-Bank Al-Watany (The National Bank) in 1958. Following problems in 1960, Riyad Bank took over the operations of Al-Watany and the government acquired 38% of the shares in the bank. In 1966, a new Banking

Control Law gave SAMA wider regulatory powers, and a few more foreign banks were licensed (SAMA, 2004). By the end of 1970, there were four banks in SA.

Consolidation (1970-1980)

In the end of 1960s, 1971, 1973, and 1974, the Saudi Arabian Agricultural Bank, the Saudi Credit Bank, the Public Investment Fund (PIF), the Saudi Industrial Development Fund, and the Real Estate Development Fund were formed to provide financial support to the agricultural sector, to offer loans to low-income Saudis with interest-free terms, and to promote private sector firms with interest-free loans (Money and Banking, 1992). The 1970s was a period of rapid expansion for the banking system, principally due to the significant rise in government revenues and expenditure and the financing of major infrastructure and industrial projects. There was, according to SAMA (2004), significant growth in commercial banks, with their total assets increasing from SR 2.7 billion in 1970 to SR 93 billion in 1978, while deposits increased from SR 0.6 billion to SR 68 billion in the same period. The demand for commercial credit delayed the increasing liquidity available in the banking system, and low-cost medium- to long-term credit was easily available from the government lending institutions. Consequently, the foreign assets of commercial banks grew rapidly from 11% of their total assets in 1977 to 45% at the end of 1980 (SAMA, 2004). By 1980, there were 12 banks in operation; three were foreign and seven had a substantial foreign ownership and management. The total number of bank branches had risen to 247 and covered nearly the entire country. Irrespective of this impressive growth, significant gaps remained in the provision of banking and financial services. Some of the key gaps, according to SAMA (2004), were small businesses with limited access to credit; cheque facilities, which were limited to cash withdrawals, foreign currency transfers, which were available only through money

changers, no consumer loans or credit facilities for small savers; outdated banking procedures; and non-existent-computer technology. A major shortcoming was the dependence of banks on foreigners and expatriates having shares in the Saudi banks. Consequently, by 1980, Saudi banks and authorities had a number of deficiencies to remedy.

The turbulent years (1980-1990)

As the 1980s were a turbulent and testing period for the Saudi banking system, this decade has witnessed the announcement of market regulation in 1984, by the Ministry of Finance and SAMA. The intermediation function was restricted to commercial banks. In addition to that, SSRC was established in 1985 while the Electronic Securities and Information System (ESIS)[1] was introduced in 1990. Moreover, and as a consequence of the great increase in government revenues during 1979-81 and the subsequent decrease in 1982-86, the commercial banks in SA experienced rapid expansion followed by a difficult period of adjustment, a decline in asset quality and a reduction in expenditure (SAMA, 2004). This was largely due to oil prices falling from an all-time high in 1981 and the subsequent and continued decline during the next five years. This stimulated some bank mergers and reforms; for example, the United Saudi Commercial Bank was formed in 1983 to take over the branches of three foreign banks, namely, the United Bank of Pakistan, Bank Melli Iran, and Banque (SAMA, 2004). This completed the process of conversion of foreign bank branches into strong joint venture banks involving foreign and Saudi shareholders. Moreover, in 1984, the Saudi Investment Bank was given a full commercial licence.

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[1] *The Electronic Securities Information System (ESIS) provided a continuous order-driven market. In ESIS, the settlement used to take place on the same day for advice, and for settlement of share certificates, it used to take place on the following day of execution (Al-Dukheil, 2002).*

By 1987, government revenues had also declined rapidly from SR 93 billion to SR 74 billion. Credit to the private sector grew only at an annual rate of less than 4% per year over the next five years. Over 20% of loans were non-performing by 1986. Bank profits suffered significantly and loan-loss provisions and loan write-offs mounted. By 1988, most banks had made sufficient provisions for doubtful debts and the average provision for the banking system had risen to over 12% of total loans (SAMA, 2004). In 1988, a licence was granted to Al Rajhi Banking and Investment Corporation to convert the Al Rajhi money-changing family business into a fully operational commercial bank. With these developments, by 1990, the Saudi banking system had twelve Saudi commercial banks, of which nine had substantial foreign ownership. By 1990, the number of bank branches had reached 1,036 and the total number of employees had also risen significantly from 11,000 in 1980 to about 25,000. Another aspect of expansion was the opening of overseas branches of major Saudi banks in the UK, Bahrain, and Turkey to service the needs of Saudis abroad (SAMA, 2004). The difficulties of the mid-1980s led to a significant increase in the banks' capital with the encouragement of SAMA. During the period 1988-93, seven of the 12 Saudi banks increased their capital through new Initial Purchase Offers (IPOs) and rights issues. Therefore, the capital and reserves for the banking system doubled from SR 15 billion at end of 1988 to SR 30 billion by 1993 (SAMA, 2004).

The Economic Boom and Banking Growth (1990-2000)

Following the resolution of the Gulf crisis in 1991, there was a small boom in the economy. During 1991, there was a large inflow of about 20% in the deposits of the banking system. Banks' domestic loans and advances grew by 90% in 1990-95 and all other banking indicators, such as rates of return on equity and assets, continued to be very strong, with many banks posting record profits. Despite difficult international

conditions such as the Gulf War, the banks continued to show solid and stable growth and strong profitability during the second half of the 1990s. The trend towards increasing the banks' capital base continued, and three Saudi banks went public on the stock market between 1993 and 1997. The capitalisation objectives were mostly achieved, and with a risk/asset ratio of over 20% at the end of 2000, Saudi banks were now highly capitalised by international standards (SAMA, 2004).

The reform of the banking system, according to SAMA (2004), continued with the 1997 merger of the United Saudi Commercial Bank and the Saudi Cairo Bank to form the United Saudi Bank. In 1999, the United Saudi Bank merged with the Saudi American Bank (SAMBA) to form the third largest bank in SA. This consideration of Saudi banks was driven primarily by shareholders, who wished to maximise share values and believed that size mattered. The trend towards mergers was expected, as banks were in need of more capital to invest in technology, in new products and services and in risk management systems. Bank (SABB) in 1998 was tied to capital increases in SAMBA in 2001, following the merger with United Saudi Bank in 1999. The trend towards having far fewer shareholders is unmistakable and there are several implications. First, holding a higher concentration of shares in fewer hands might enable some business groups to influence day-to-day operations and bank management through board representation. Second, the concentration of shares in a few hands with block votes "de-democratizes" the role of annual general meetings in joint-stock companies. Concentration eliminates transparency and leads to joint stock companies operating like partnerships.

The present Saudi banking system (2000 – present)

The new millennium saw Saudi banks faced with competitive pressures from regional and international banks. While it may take some time before the impact of such competition is felt on the bottom-line profitability of Saudi banks, some of these banks are already trying to reposition themselves in a more focused manner in the Saudi market. The international environment of low interest rates affected their margins, as the cost of funds fell faster than lending rates, eroding lending margins. In 2003, Saudi banks began to search for non-interest investment income and to diversify their product range to reduce their dependency on interest income (or commission income, as it is termed in SA). According to Ramady (2005), the Saudi banking industry, as a whole, is still dependent on commission income for around 70% of its total income, although there are some individual bank differences. In April 2000, the Saudi Government introduced the Foreign Investment Act, which announced major changes to the existing legal and regulatory environment, thus ushering in a new era of foreign investment in SA. The new Foreign Investment Act also had implications for the financial sector, as it further opened up the Saudi market to foreign investments, including 100% foreign-owned companies. This law created the SAGIA, which has the power to issue licenses to companies for most investment.

In October, 2003, it was a turning point in the history of Saudi banking, as it saw the "complete" Saudization of one of the earlier joint-venture banks, when Citibank completed the transfer of local management to the renamed SAMBA Financial Group. The government acquired Citibank's 20% share through the PIF. According to its 2003 Annual Report, SAMBA decided to liquidate its overseas branch holdings in the UK and Luxemburg, but retained a wholly-owned subsidiary specializing in mutual funds operating in Guernsey (SAMBA Annual report, 2003). In 2003, the Al

Rajhi and Al Jazira banks had the highest investment income ratios amongst Saudi banks; that was because these two institutions applied their customer deposits in Islamically-acceptable investments (Ramady, 2005). Al Rajhi's commission income was not really a net interest differential, but was based on customer-owned investment products, with Al Rajhi acting as a fiduciary agent in managing these investments for a fee. With the foreign licensed banks eyeing the investment income market in SA, the domestic banks realized that they needed to develop more expertise and deliver more products if they were to compete effectively in this market segment in the future. The issue of shareholder concentration is also a recent major concern for the Saudi banking sector, as it is for most other publicly-listed Saudi joint-stock companies (Abdullatife, 2002). The increase in the number of shareholders in the Saudi British From 2003 onwards, the concentration level has also been reflected in other "wholly owned" Saudi banks, such as Riyad Bank and NCB, through government major ownership participation in these banks.

According to Ramady (2005), in 2003, the major shareholder concentration was more obvious within the Saudi Hollandi, SAMBA and Al Rajhi banks; however the Saudi British Bank (SABB) has the least concentrated shareholder of the three. Historical reasons explain the high level of Saudi banks' shareholder concentration, especially for the joint-venture banks. These banks usually started life through a founding group of investors who were granted a certain percentage of the founding share capital, with remaining shares being distributed between the foreign joint-venture partner and the general public. Because the smaller investors received only a few shares, over time, they sold out to the larger investors and founding shareholders. The Saudi government is aware of these issues, and is encouraging wider share ownership by planning a partial privatization of its own banking holdings, especially in the

Kingdom's largest bank, NCB. According to press reports in 2003, the government planned to sell up to 50% of its holding in NCB; that would give a large boost to the CMA which is formed in 2003 (Abdul Ghafour, 2003). It worth to highlight that, the government owns 80% of NCB (SAMA, 2004). SAMA introduced the SADAD Payment System (SADAD) on 3 October 2004 to be the national Electronic Bill Presentment and Payment (EBPP) service provider for SA (SAMA, 2011). The core mandate for SADAD is to facilitate and streamline bill payment transactions of end consumers through all channels of Saudi's banks. In essence, the system facilitates data exchange between registered billers and the nation's commercial banks, and relies on existing banking channels (such as IB, telephone banking, ATM transactions, and even counter transactions) to allow bill payers to view and pay their bills via their banks. Many consumers are comfortable with using SADAD. However, AlGhamdi, taking into account follow-up comments from some of the respondents in his study, suggested that small-to-medium businesses see the initial costs of registration with SADAD and the ongoing transactions processing fees as being too high (AlGhamdi et al., 2011). In 2008, as a reaction to the global financial crisis, SAMA played down the impact of the global financial crisis both on the Saudi economy and globally, saying there was no liquidity problem. SAMA has guaranteed the bank deposits to boost confidence in the SA's financial institutions and this has further consolidated the banking sector's position. According to the study by the Kuwaiti-based Global Investment House (GIH) in 2008, the Kingdom's banking sector was good because of a strong economic performance and an announcement by SAMA that it could inject SR 150 billion into the banking sector to offset the credit crunch. Moreover, the Saudi banking sector, with its limited exposure in the global markets, was somewhat better able to escape the severe implications of the global

financial distress. However, being an important part of the intertwined global markets meant that some of the dampening effects were directly or indirectly translated into the SA's banking sector performance. In Table 2.4, all SA banks are listed with their websites, year of establishment, number of branches and capital.

#	Bank Name	Website address	Est. Year	Branches No.	Capital (SRm)
1	Al Rajhi Bank	www.alrajhibank.com.sa/en	1978	500	15,000
2	National Commercial Bank	www.ncb.com.sa	1953	288	15,000
3	Saudi Arabia British Bank	www.sabb.com.sa/	1978	80	10,000
4	Banque Saudi Fransi	www.alfransi.com.sa	1977	114	9,040
5	Saudi American Bank	www.samba.com.sa/eng_index.htm	1980	66	9,000
6	Arab National Bank	www.anb.com.sa/default.asp	1979	183	8,500
7	Riyad Bank	www.riyadbank.com/index_en.html	1957	248	6,000
8	Saudi Investment Bank	www.saib.com.sa/english/home.aspx	1976	54	5,500
9	Saudi Hollandi Bank	www.saudihollandibank.com/vEnglish/default.asp	1926	44	3,307
10	Bank Al Bilad	www.bankalbilad.com.sa/en	2004	78	3,000
11	Bank Al Jazira	www.baj.com.sa/default.asp?lng=ar	1975	51	3,000

List of the Saudi banks' websites, year of foundation, number of branches and capital.
Sources: (Saudi banks' websites, 2011) (ordered by capital and branches).

Figure 2.6 below is an evaluation of the number of branches and ATMs from a survey conducted by SAMA between 1994 and 2011. The figure shows growth in both the number of bank branches and ATMs in SA (SAMA, 2011).
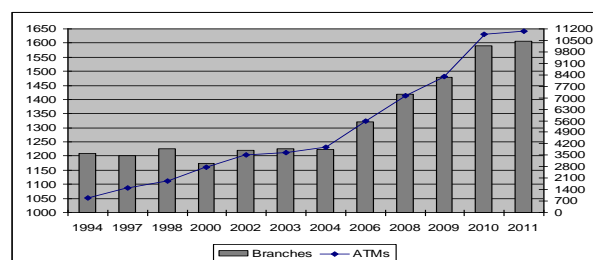
Evolution of branches and ATMs (1994-2011 1st Q).
Source: (SAMA, 2011).

Ramady (2010) summarised a list of the key strengths of Saudi Arabian banks[1] as presented in Table 2.5; this indicates that the key strength of Al Rajhi Bank and NCB is the IsB, while the key strength of other banks, such as SABB, SAMBA and Arab National, is e-banking. All the following listed 11 banks have established their

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1 In Chapter 5, section 5.2.2.3, the most used Saudi Banks are reported based on this study research survey results.

presence on the internet, as their websites are bilingual and have been designed for both Arabic- and English-speaking users (Jasimuddin, 2001). Each bank's key strength is presented in the next column:

Institution	Perception - strengths
• Al Rajhi	• Islamic investments, foreign exchange, trading activities, "safety first".
• National Commercial Bank (NCB)	• Consumer banking, small business, Islamic products, corporate and government lending, foreign exchange and treasury, large ticket items.
• Riyad Bank	• Consumer loans, trading activities, investment, government accounts, oil and agricultural sector, syndications, small business.
• SAMBA	• Corporate banking, treasury and investment products, e-banking, high net worth clients, international links, syndications.
• Saudi British Bank (SABB)	• E-banking, investments, treasury products, international links, medium-term facilities to Saudi corporate, part of an international Hong Kong and Shanghai Banking Corporation (HSBC) network and global image.
• Arab National	• E-banking, mutual funds, consumer banking, small business, treasury products.
• Al-Jazira Bank	• Islamic investments, innovation in capital market *Sukuk*[1] products.
• Al Bilad Bank	• Expertise in FX and remittance, SME-friendly.
• Saudi Investment Bank	• Corporate finance medium-to long-term loans, international trade, treasury products, syndications.
• Saudi Fransi	• Corporate banking, investments, treasury products, loan syndication.
• Saudi Hollandi	• International trade, medium corporate loans, international capital markets, off-balance sheet products.

Saudi commercial banks: perception of key strengths.
Source: Ramady (2010).

Online Banking (OB) in Saudi Banks

This section introduces the current status of OB in SA. The WWW is a vehicle for the most common transactions that one could expect to have with a bank. Websites also

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[1] *The word 'Sukuk' (plural of the Arabic word Sakk meaning certificate) reflects participation rights in underlying assets. The term 'Sukuk' is not new and is recognized in the traditional Islamic jurisprudence. The idea behind Sukuk is simple. The prohibition of interest virtually closes the door for pure dept security, but an obligation that is linked to the performance of a real asset is acceptable by Shari'ah (Iqbal and Mirakhor, 2007).*

act as the digitised form of brochures that provide organizational and promotional information, financial reports, recruitment, general information, contact details, etc. Today, some Saudi banks have reached a highly developed state in IB service provision. For example, Global Finance has awarded the Riyad Bank's website for having the best website design and the best consumer IB in the Middle East, and the SAMBA website for being the best institutional/corporate website in the Middle East and Africa (Rombel, 2005). Diniz (1998) categorized the content of bank websites into three levels; these will be examined in more depth in subsequent sections, and as illustrated in Table 2.6.

Basic interactivity level	Intermediary interactivity level	Advanced interactivity level
A) Banks use the web for information delivery		
Electronic brochure	Report downloads	Use customised resources
Promotional information	Recruitment forms	Subscription options
Contact and location details	Hot links to other sites	Advertising
Special offer announcements	E-mail	Discussion groups
B) Banks use the web to improve their relationship with customers		
E-mail and e-forms	Investment Advisor	More advanced support tools
Client suggestions and complaints	(calculators, for example)[1]	More advanced technologies, e.g. videoconferencing
C) Banks use the web as a vehicle for the most common transactions[2]		
Opening accounts	Clients can access their account details and statements on-line	Promoting e-cash as a way to develop Web-based transactions
Investment and credit applications	Limited client access to the bank's database	Enhancing Customer Relationship Marketing (CRM)

Diniz model, Bank website's content categories.
Source: Diniz (1998).

Banks use the internet to improve their relationship with customers. By applying Diniz's model to Saudi banks, it can be seen that the basic interactivity level of

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1 Some banks' websites provide supportive tools such as calculators.

2 It also includes transfer of fund and payment of bills.

information delivery is almost universally found in Saudi banks' websites. However, there is a significant difference in the second and third levels, regarding the use of the internet to enhance customer relationships and using the internet as a vehicle for the most common transactions, as it appears in the Table 2.7.

Website content and facilities	Al Rajhi Banking & Investment Corporation (ARBIC)	National Commercial Bank (NCB)	[1]Riyad Bank (RB)	[2]Saudi American Bank (SAMBA)	Saudi British Bank (SABB)	Arab National Bank (ANB)	Bank Al-Jazira (BJ)	Al-Bilad Bank	Saudi Investment Bank (SIB)	Banque Saudi Fransi (BSF)	Saudi Hollandi Bank (SHB)
A) Banks use the web for information delivery											
Electronic brochure	*	*	*	*	*	*	*	*	*	*	*
Promotional information	*	*	*	*	*	*	*	*	*	*	*
Ways to contact the bank	*	*	*	*	*	*	*	*	*	*	*
Promotion of special offers	*	*	*	*	*	*	*	*	*	*	*
Report downloads	*	*	*	*	*	*	*	*	*	*	*
Recruitment forms	*	*	*	*	*	*			*		*
Hot links to other websites	*	*	*	*	*	*	*		*	*	*
Use customising resources	*	*	*	*	*	*	*	*	*	*	*
Subscription options	*	*	*	*	*	*	*		*	*	*
Advertising	*	*	*	*	*	*	*	*	*	*	*
Discussion groups	*	*	*						*	*	*
B) Banks use the web to improve their relationship with customers											
E-mail and e-forms	*	*		*		*		*			*
More advanced support tools	*	*							*		*
More advanced technologies	*	*	*						*	*	*
C) Banks use the web as a vehicle for the most common transactions											
Opening accounts	*	*	*	*	*	*	*	*	*	*	*
Requesting products and services	*	*							*	*	
Investment and credit applications	*	*			*			*			*
Clients can access their account details and statements on-line	*	*	*	*	*	*	*	*	*	*	*
Fund transfer	*	*	*	*		*		*			
Bill payments	*			*							
Promoting e-cash as a way to develop web-based transactions	*	*	*	*		*		*			

[3]The contents and facilities found in the websites of Saudi banks.

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[1] In 2005, Adam Rombel from Global Finance selected Riyad Bank as the best website design.

[2] Saudi American Bank (SAMBA) has been selected by Global Finance as the best corporate/Institutional and consumer Internet Bank in the Middle East & Africa (Rombel, 2005).

3 Banks listed in capital size and branch number order.

After joining the WTO, the Saudi government opened the banking and insurance sector to foreign investors and, indeed, the Saudi banking sector has now been opened up to national banks from the other GCC member states. With the e-commerce revolution, some of the foreign banks have already moved into the Saudi market. What does this mean for banks, customers and the different governments' institutions, and what are their roles in marketing IB services?

The SA Government role in adopting e-business is as follows:

1. Planning management and training.
2. Develop the legal framework.
3. Establish and maintain the infrastructure.
4. Provide the access.
5. Develop and maintain the database management.
6. Develop the relevant standards.

SA announced a large scale initiative to equip over 21,000 schools with PC equipment, networks, internet access and peripherals. A technical committee for e-commerce was established in 2001 to create a legal framework, improve infrastructure, and present technical support and training (KACST, 2005). On the other hand, SAMA has two main roles: establishing the different e-payment systems, and supervising (monitoring) local banks and bank-customer relations. SAMA encourages banks to establish IB systems. However, it is essential that risks in such systems be properly controlled and monitored. The onus of maintaining adequate systems of control, including those in respect of IB, ultimately lies with the institution itself (SAMA, 2004). As IB develops, SAMA aims to keep the banks informed of the best security practice internationally by issuing enhanced versions of this document to assist in maintaining the safety of OB in the Kingdom. However, it is the banks' responsibility to maintain effective internal & technical controls in keeping with the guidelines (SAMA, 2004).

In 2004, Saudi banks adopted e-banking services mainly for two reasons: first, to face the challenges of the financial requirements, and second, to gain the benefits of OB. Most of the Saudi banks adopted the integrated approach whereby they keep their existing brand name and offer IB services as an extension to their branch, ATM and telephone-based services (SAMA, 2005). Saudi Banks offering online services may face challenges of:

- Identifying and addressing consumer concerns about transacting online.
- Identifying areas of exposure or vulnerability due to insufficient disclosures.
- Building and sustaining the confidence of customers.
- Customers' inexperience.
- Persuading customers to accept the impact of secure access technologies.
- Carrying the cost of secure access technologies. (SAMA, 2005).

APPENDIX K

Al Wahda Express
Field Study Acceptance

Date : 14/04/2008
Ref : 043/DG/2008

Dear Mr Mohammed Eid Al-Qahtani
University of Hull
Scarborough Campus,
PhD Student, HUBS
Filey Road,
Scarborough,
YO11 3AZ,
United Kingdom

Referring to your inquiry which has been sent to us by fax, dated on 14/04/2008, which was involve your request to use the Saudi Telephone Directory under our supervision for the purpose of your PhD research during your field work. We would like let you know that we have no objection of letting you to use the Saudi Telephone Directory in your PhD's Field work. Therefore, we are here to confirm to you our acceptance for your request, and to provide with the full required support as per our polices and procedures during your PhD's field work.

Should you have more inquiries or want more clarifications, we can be approached on the below address:

P.O. Box 301490, Riyadh 11372
Kingdom Of Saudi Arabia
Tel: +966 1 4886050 Ext. 111
Fax: +966 1 4880729
alhaddadh@alwahda-express.com.sa
www.alwahda-express.com.sa

Yours Truly,

Hussam A. Al-Haddad
Director General

www.yellowpages.stc.com.sa

Central   Western   Eastern   Northern   Southern

13/04/2008

Dear Mr Hussam Al-Haddad,
General Manager,
Al Wahda Express Saudi LLC,
P.O. Box 301490, Riyadh 11372
Tel: 01 – 4886050 Ex: 111
Fax: 01 – 4880729

It was nice talking to you over the phone yesterday, and refereeing to our conversation; I would like to introduce my self. My name is Mohammed E. Al-Qahtani, I am Doctoral researcher at Hull University Business School, sponsored by the Saudi cultural Bureau, undertaking a study on Customers attitudes towards the uses of Internet Banking (IB) services in Saudi Arabia (SA), supervised by Dr. Dimitrios Tsagdis.

My PhD research aims to investigate the different factors affecting the adoption of IB services and then to make recommendations covering a range of areas for the improvement of the Internet Banking services in Saudi Arabia.

As a part of my field study work, the Saudi Arabia Telephone Directory will be used to select 1000 names randomly. The selected names will be the sample of my research. A survey questionnaire will be sent to those selected names in order to enable me to collect my research primary data.

I am sending this letter to you; seeking your acceptance to use the Saudi Telephone Directory under your supervision for the purpose of my PhD research during my field work. Therefore, I will highly appreciate it if you kindly reply to my inquiry, confirming your acceptance, by fax (0044 1482 466205).

I hope to be able to account on your collaboration concerning the above.

Should you require any more information, please do not hesitate to contact me.

Thanking you in advance for your help and co-operation.

Yours faithfully,

Mr Mohammed Eid Al-Qahtani
University of Hull
Scarborough Campus,
PhD Student, HUBS
Filey Road,
Scarborough,
YO11 3AZ,
United Kingdom