UNDERSTANDING INTERNET BANKING SERVICES AND CUSTOMERS' ADOPTION IN IRAQI PUBLIC UNIVERSITIES

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INTERNET BANKING SERVICES AND CUSTOMERS'ADOPTION IN IRAQI PUBLIC UNIVERSITIES USING DECOMPOSED THEORY OF PLANNED BEHAVIOR

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ABSTRACT

There is no doubt that internet banking services adoption represents a good opportunity for developing nations to attain greater economic development and growth, where the creation of added value is driven by information, knowledge and the adoption of information and communications technology. Although a lot of researches provide evidence on the wide adoption of internet banking in developed nations, there are only limited researches in developing nations in the Middle East, specifically in Iraq. There is definitely a need in this country to identify the factors that could encourage and improve the understanding of internet banking services adoption. There is also a paucity of empirical researches on internet banking services adoption from the perspective of customers. Taking these into cognizance, this quantitative research aims to understand internet banking services adoption, by investigating the key factors that encourage customers to adopt internet banking in the Iraqi context, using the decomposed theory of planned behavior. The research framework consists of eighteen latent variables, fourteen exogenous variables (perceived usefulness, perceived ease of use, compatibility, trust, social recommendation, prestigious media, self-efficacy, government support, technology support, internet technology literacy, resistance to technology, perceived risk of technology, anxiety about technology and information on technology); and four endogenous variables (internet banking adoption, attitude, subjective norms and perceived behavioral control). In order to test the framework, a quantitative approach using the survey method is employed consisting of eighty two items with a seven-point Likert scale. Based on proportionate stratified random sampling, 535 out of 800 employees submitted completed questionnaires suitable for analysis (a 66.8% response rate). Findings of this study reveal that all the research hypotheses are supported except three, namely subjective norms, perceived behavioral control and information on technology towards internet banking services adoption, implying that the decomposed theory of planned behavior is an applicable underpinning theory for clarifying the important antecedents of internet banking services adoption in the Iraqi context.

Keywords: technological change, internet banking, decomposed theory of planned behavior, structural equation modeling.

ABSTRAK

Penggunaan perkhidmatan perbankan internet merupakan peluang yang terbaik bagi negara membangun untuk mencapai pembangunan dan pertumbuhan ekonomi yang lebih baik. Apatah lagi pembentukan nilai tambah ini didorong oleh teknologi, ilmu, serta teknologi maklumat dan komunikasi. Walaupun terdapat banyak bukti penyelidikan mengenai pengunaan perbankan internet secara meluas di negara membangun, namun penyelidikan masih terhad dalam kalangan negara-negara timur tengah terutamanya Iraq. Terdapat keperluan dalam mengkaji hal bagi memastikan faktor-faktor yang boleh menggalakkan penggunaan perkhidmatan perbankan internet. Jumlah penyelidikan empirikal adalah amat sedikit dalam bidang penggunaan perkhidmatan perbankan internet terutamanya daripada perspektif pelanggan. Oleh itu, penyelidikan kuantitatif ini bertujuan untuk memahami penggunaan perkhidmatan perbankan internet dengan menyiasat faktor-faktor utama yang menggalakkan para pelanggan untuk menggunakan perbankan internet di dalam konteks negara Iraq dengan menggunakan teori penguraian gelagat terancang. Kerangka penyelidikan ini terdiri daripada lapan belas pemboleh ubah latent, empat belas pemboleh ubah eksogen (tanggapan kebergunaan, tanggapan kesenangan kepenggunaan, keserasian, kepercayaan, cadangan sosial, media berprestij, keupayaandiri, sokongan kerajaan, sokongan teknologi, celik teknologi internet, halangan kepada teknologi, tanggapan risiko teknologi, kebimbangan terhadap teknologi dan maklumat ke atas teknologi). Selain itu, kerangka penyelidikan juga melibatkan empat pemboleh ubah endogen (penggunaan perkhidmatan perbankan internet, sikap, norma subjektif dan tangappan kawalan gelagat). Pengujian kerangka ini menggunakan pendekatan kuantitatif secara kaedah tinjauan yang mengandungi lapan puluh dua item dengan tujuh mata skala Likert. Berdasarkan kepada pensampelan rawak berkadaran berlapis, 535 daripada 800 orang pekerja mengemukakan borang soal selidik yang lengkap untuk penganalisaan (66.8% kadar maklum balas). Hasil kajian ini menunjukkan bahawa semua hipotesis disokong kecuali tiga iaitu norma subjektif, tangappan kawalan gelagat dan maklumat terhadap teknologi ke atas penggunaan perkhidmatan perbankan internet. Ini menunjukkan bahawa teori penguraian gelagat terancang adalah sesuai sebagai teori asas untuk menerangkan latar belakang penting penggunaan perkhidmatan perbankan internet di Iraq.

Katakunci: perubahan teknologi, perbankan internet, teori penguraian gelagat terancang, model persamaan struktur.

DEDICATION

By the grace and mercy of God, I dedicate my thesis to the memory of the departed soul of my uncle “Husain Omran", to my beloved mother and father, the greatest parents in the world. To my beloved mother and father, the greatest parents in the world. Without your unconditional love, prayers, wisdom, and encouragement, this thesis would not have been possible, and neither would there have been any joy in its completion.

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LIST OF ABBREVIATIONS

ATT	Attitude
AOT	Anxiety of Technology
AVE	Average Variance Extracted
CBI	Central Bank of Iraq
CBSEM	Covariance Based SEM
CMC	Communications and Media Commission
COM	Compatibility
CR	Composite Reliability
DSL	Digital Subscriber Line
DTPB	Decomposed Theory of Planned Behavior
DTPB	Decomposed Theory of Planned Behavior
EE	Effort Expectancy
FC	Facilitating Conditions
GDP	Gross Domestic Product
GS	Government support
GOF	GOODNESS OF FIT
IB	Internet banking
IRB	Iraqi Banks
IBS	Internet Banking Services
IBSA	Internet banking services adoption
ICT	Information and Communication Technology
ID	Identity
IDT	Innovation Diffusion Theory
IFT	Individual Factors Technology
IOT	Information on Technology
IT	Information Technology
ITL	Internet Technology Literacy
ITU	International Telecommunication Union
MOF	Ministry of Financial
MOI	Ministry of Interior
MOO	Ministry of Oil
NBK	National Bank of Kuwait
PBC	Perceived Behavior Control
PC	Perceived Compatibility
PE	Performance Expectancy
PEOU	Perceived ease of use
PLS	Partial least Square
PM	Prestigious Media
PU	Perceived Usefulness
QNB	Qatar National Bank
RIT	Risk Technology
RT	Resistance to Technology
SCIS	State Company for Internet Services
SE	Self Efficacy
SEM	Structural Equation Model

SI	Social Influence
SN	Subjective Norm
SCT	Social Cognitive Theory
SR	Social Recommendations
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
TRU	Trust
TS	Technology Support
USA	United States of America
USD	United States Dollar
UTAUT	Unified Theory of Acceptance and Use of Technology
VBSEM	Variance Based SEM
VOIP	Voice over Internet Protocol
VSAT	Very Small Aperture Terminal
VTC	Video Tele
WI-FI	Wireless fidelity

CHAPTER ONE

INTRODUCTION

1.0 INTRODUCTION

The aim of this chapter is to introduce the overview of the study, and is organized as follows: Section 1.1 provides the research background; Section 1.2 highlights key issues and motivations for this research; Section 1.3 states and discusses the research problem; Section 1.4 outlines the research questions, followed by research objectives in Section 1.5; Section 1.6 highlights the significance of this study; Section 1.7 identifies its scope; Section 1.8 provides definition of key terms; and Section 1.9 provides organization of the thesis.

1.1 BACKGROUND

Banking and financial services are the most IT-intensive segments of the global economy. The Internet and its rapid diffusion, have led to the financial services industry, radically changing its delivery channels. Indeed, the Internet, and its associated technologies, is the keys to the survival and growth of businesses in today's competitive environment. Web technologies have been instrumental in helping many banks to establish their presence on the Internet, so that they can provide customers with many facilities to perform interactive banking transactions (Al-Somali *et al.*, 2009). The availability and increase of new information and communication technologies (ICTs) in the financial industry has a significant impact on the way banks currently provide services to their customers (Hoehle *et al.*, 2012).Around the world, banking remains the largest consumer of IT services, and the largest spender on IT systems. Many new business standards have been

introduced, and these standards have a prominent role in changing the way that the banking industry functions. Internet technology, wireless technology and global straight-through processing (STP), have made it possible for the banking industry to move away from being mere physical banks to providing virtual services, allowing the banks to face global competition from other banks around the world, and to gain larger market shares, in order to satisfy the needs of customers (Sharma, 2009).These technological changes, new players in the banking arena, and globalization of business and service innovations, have led to intense market competition, and compelled banks to cater more to customers by providing them with a greater range of choices (Alnsour & Al-Hyari, 2011; Mansumitrchai & Chiu, 2012). Technological developments have also availed opportunities for the banks and other service providers alike, to develop and offer customers greater flexibility, and more services, as consumers today are demanding better facilities and services (Tan & Teo, 2000).According to Jalal, Marzooq, and Nabi (2011), Internet banking has been growing significantly, and has a direct impact on the way businesses are conducted.

In a nutshell, Internet banking is regarded as the "life-blood" for economic growth and progress in the 21st century. This sector plays a vital role in the development of numerous businesses and increasing Gross Domestic Product (GDP) in different countries, particularly in developing countries (Nasri, 2011; Al-Somali *et al*., 2009).

Nowadays Internet banking used vary widely by financial institutions, as they realize that it can reduce costs, if compared to paying salaries to personnel who physically serve customers. A comparison between traditional and electronic banks in terms of costs shows a clear difference; the online banking services arevery low costs,

compared to traditional channels of banking (Nasri, 2011; Shendi, 2011). Electronic means of banking have shortened processing time, increased speed, improved business transactions, flexibility and provided improved services overall. Internet banking (IB) has become an important part of a bank's services to customers. It has thus become a focus for research since many banks have launched online services (Mansumitrchai & Chiu, 2012, p. 103).

However, Internet banking adoption by customers remains a complex, elusive, yet extremely vital phenomenon (Hoehle *et al*., 2012). Indeed, there is no doubt that internet banking services adoption (IBSA) represents the opportunities for developing nations to leap forward towards greater economic development and growth, where the creation of added value is driven by information, knowledge, and the adoption of ICTs.

1.2 KEY ISSUES AND MOTIVATION

Iraq is one of the developing countries in the Middle East of Western Asia and has encountered different crises in the last few decades. Some of its crises include the first and second Gulf Wars, U.S. occupations of Iraq (2003 to 2011), and various economic sanctions. All these issues have negatively affected the infrastructural development of the country with respect to education, electricity, oil and gas, banking and the telecommunications (Al-Azzawi, 2011; Al-Hakim & Hassan, 2013; United Nations ESCWA, 2010).

In Iraq, the Ministry of Communications was initially responsible with the functions of seeing to the affairs of internet and telecommunications services. However, the

ministry encountered several challenges due to the crises that erupted in Iraq from 1991 to 2002. The efforts of the Ministry to revive the information technology and telecommunications sector however proved abortive since many of the foreign companies were not willing to go against the sanctions that had been imposed on Iraq. By the end of 2002, the telecommunications sector and information technology were regarded to be the weakest of all the sectors in the Middle East (United Nations ESCWA, 2005; Report of U.S. Agency for International Development, 2009). With this trend, the penetration rate of Internet users in Iraq was only 9% by the end of 2010 thereby making Iraq to be occupying the lowest position of the ESCWA region (see Table 1.1). In this regard, the rate of Internet user and penetration is lower than expectations (Report of United Nations ESCWA, 2010).

Table 1.1
Regional Internet User Penetration Rate

Country	Internet users penetration rate (percentage)	Ranking Range
United Arab Emirates	78	1
Qatar	69	2
Oman	63	3
Bahrain	55	4
Saudi Arabia	41	5
Kuwait	38	6
Jordan	38	7
Palestine	37	8
Lebanon	31	9
Egypt	27	10
Syrian Arab Republic	21	11
Yemen	11	12
Iraq	**9**	**13**
The Sudan	…..	14
Average		27

Source: Adopted from Report of UN ESCWA (2010, P.19)

Communication and internet services development in Iraq are very important for the growth of the banking sector. In the recent time, modern banking services have

become important driver for economic and GDP growth. In this view, the Central Bank of Iraqi hopes that Iraqi banks can make an effective contribution to the country's GDP (Alsabaah 2014; CBI, 2012; Iraq directory, 2010). Additionally, it is very crucial for job opportunities to be created as well as encourage local and foreign investment, reduce poverty rate, and contribute to the technology sector development all which shall help to boost the overall economic growth and development of Iraq (Report of U.S.A. Agency for International Development, 2009).

The Director of the Commercial Banks of Iraq, Hamdia Aljaff, indicated that the banking system in Iraq is still at an infancy stage, and there is a need to adopt ICT to implement Internet usage in the banking sector (Iraqdirectory, 2012c). In fact there has been lack of application of IT to the development of businesses generally and to banking in particular in Iraq.This has adversely affected the satisfactory relationship between the banks, their local and foreign customers (US Department of Defense, 2010). Apart from this, the Central Bank of Iraq (CBI) has been advocating for the drastic reduction in the use of physical cash due to geographical distances and inherent security issues which often make the transfer of money across the country difficult and risky. Hence, the primary objective of internet banking in Iraq is to assist in automating the settlement of checks and salaries payment, activation of internet banking activities and electronic cards for the purpose of making bank accounts liquid and ease movement of large funds without time and place restrictions (CBI, 2013).

However, the Iraqi government has made several efforts in the past to upgrade the internet facilities, and other telecommunications infrastructure by allocating USD

500 million without achieving the desired objectives due to continuous external conflicts and economic sanctions (Heshmati & Alhammadany, 2014; ITU, 2011b; Mawtani, 2011). Additionally, the government has also put a lot of initiatives in place so as to facilitate easy connection of Iraqi people to the rest of the world through high speed internet, voice over internet protocol (VOIP) and other new pattern of internet services in order to simplify and make businesses more efficient (Heshmati & Alhammadany, 2014; ITU, 2012). Moreover, the government of Iraqi has also tried to ensure that internet banking sector is actively working since the sector is considered as one of the main private sectors that is driving the economy of the country (Cabinet, 2012). The government of Iraq has equally asserted that with the assistance of international companies like Microsoft, Internet banking transactions could be developed faster. This assertion was made since Microsoft has expressed its intention to help Iraq to develop its electronic banking system (Alsumarianews, 2013; Alsabaah, 2013).

Based on the above discussion, it becomes very clear that this research is motivated to address a number of issues facing internet banking development in Iraq. Some of the motivations include:

Firstly, evidence has shown that despite that many banks in Iraq have adopted advanced technologies with full electronic funds transfer system (Investpromo, 2012), the low rate of acceptance of such facilities among the populace calls for a serious concern (Mohsen, 2010). Recently too, other indicators have equally revealed that the rate of internet banking service usage is below or nearly 1% in Iraq (Ipbl, 2012; KIB, 2012; ITU, 2010). Importantly, when this rate of adoption is compared to that of other countries like USA (74%), and South Korea (95%) and Saudi Arabia

(40%) (Aawsat, 2011; ITU, 2011; Pewinternet, 2010; Zhao *et al.*, 2008), it can be concluded that the difference is enormous and urgently calls for further investigation into those factors causing low adoption among Iraqis (Mohsen, 2010; Shendi, 2011).

Secondly, there is high level of distrust and lack of confidence about electronic banking system among Iraqis. This has actually accounted for low adoption of the electronic banking system (Iraqdirectory, 2012a; Niqash, 2012; Shendi, 2011; US Department of Defense, 2010). In online situation, trust is an important element because of the absence of personal interaction between the bank and customers and which has equally heightened the level of uncertainty among the users when compared to traditional banking users (Almajali, 2011, p.2).

Thirdly, lack of information about the usefulness and benefits of internet banking is a major impediment to internet banking adoption in Iraq. This has made the Iraqi people to still prefer traditional banking to internet banking (IIER, 2012; Shendi, 2011; Jassim & Mubarak, 2010). This could be another contributory factor for the slow adoption of internet banking among the Iraqi people.

Fourthly, evidence has equally shown that there is a serious decline in the role of media or social influence and this has also brought about low adoption of internet banking. The social influences of friend, colleagues, family members and advertisement have been proved to be a powerful predictor of acceptance or rejection of IBS amongst the Iraqi society (Al-hammadany & Heshmati, 2011a, p. 70; Shendi, 2011, P.17) but this is lacking in Iraq.

The fifth issue has to do with lack of necessary government support, self-efficacy among Iraqis and adequate technological support. Cosit (2011) affirms that Iraqi people are lagging behind in the usage of computer and equally proves that over 70%

of Iraqis do not own/use personal computer due to their ignorance or intense poverty. Asides, lack of government support in terms of effective regulations and laws that can protect users against e-fraud is a major factor that is inhibiting the adoption of internet banking in Iraq (Alhammadany & Heshmati, 2011b, p.9; Jassim & Mubarak, 2010, P. 10).

In a nutshell, the diffusion and applications of technology in Iraq is still at infancy stage for many reasons and this is adversely affecting the adoption of internet banking among Iraqis (Al-Azzawi, 2011; Aldhmour & Shannak, 2009, p. 302). As mentioned earlier too, many Iraqis are not familiar with the benefits and advantages that are associated with internet banking technology, and even if they possess this knowledge, majority of them do not have the ability to use the computer and internet technology effectively (Shendi, 2011). Even though the rate of internet users has generally increased in the recent time from 0.5% in 2000 to 9% in 2010 (Al-Hammadany & Heshmati, 2011b, p.3); this does not commensurate with the number of those who are adopting internet banking. It is therefore suffice to say that a positive change of attitude towards internet banking usage is urgently required. However, this clarion call can only be achieved after investigating the pertinent factors that can enhance internet adoption. Therefore, a study of this nature is urgently required for Iraqis in general and for Iraq as a country. In this view, it is highly important to conduct extensive studies on the influence of key factors on IBSA.

1.3 PROBLEM STATEMENT

In the recent time commercial banks in Iraq have spent large amount of money to institute IB facilities and other IT software (CBI, 2013; Investpromo, 2012; ITU, 2012), however, evidence has shown that despite the benefits of these facilities, the rate of IB adoption is still at a low in Iraq (Niqash, 2012; KIB, 2012; Shendy, 2011). Importantly, this incident is not just peculiar to Iraq alone, evidence has shown that, the adoption of the internet banking varies from one country to another (Alnsour & Al-Hyari, 2011, p. 5), and it is at infant stage in Middle East countries specifically (Ezzi, 2014,P.34).

A critical review of past studies (2000-2011) in this perspective has however revealed that majority of these studies only investigated intention to adopt internet banking (Tan & Teo, 2000; Shih & Fang, 2004 & Hernandez & Mazzon, 2007), while most others also compared adopters and non adopters (Sathye, 1999; Suganthi *et al.*, 2001; Gerrard and Gumingham, 2003; Akinci et al., 2004; Chan & Lu, 2004; Laforet & Li, 2005; Lee *et al*., Gerrard *et al*., 2006; Awamleh & Fernandez, 2006; Polasik & Winsniewski, 2009 & Foon & Fah, 2011), instead of investigating actual users of internet banking (Hong *et al.,* 2013). Hong *et al*. (2013) in this view affirms that " Without a good understanding about the adopters of Internet banking, it would be challenging to understand the contributing factors that will cause the Internet banking adopters continue to adopt Internet banking ". Therefore, the internet banking studies should focus on actual users or adopters instead of people who just have the "intention to adopt". On the other hand, measuring of internet banking adoption can only be effective when the actual users of internet banking have reached a critical mass (Tan & Teo, 2000;Chan &Lu, 2004).

In addition, Mansumitrchai & Chiu, (2012) also assert that the findings of previous studies with respect to the antecedents of IBS and IBS intention are mixed and diverse because of fragmented models which these past studies adopt (Al-Majali & Mat, 2011; Yousafzai, Pallister & Foxall, 2009; Lee, 2009; Nor & Pearson, 2008; Shih & Fang, 2004; Tan & Teo, 2000). Asides, authors have been unable to come up with a decisive decision with respect to subjective norm, customer attitude, and perceived behavioral control as the results of these past studies are inconsistent (AL-Majali & Mat, 2010b). Furthermore, no single previous study has holistically examined these three antecedents for the IB actual behavior using one model and this clearly reveals a gap in literature. Moreover, details of past studies have equally shown comprehensive articulation of IB constructs and dimensions have not been done especially in the Middle East and Arab countries in general, and in Iraq in particular (Abushanab, Pearson & Setterstrom, 2010, p. 497; Al-Somali et al, 2009, P.13;Shendy, 2011), making the studies of internet banking adoption to be inconclusive. Evidently, lack of adequate literature with respect to IBSA (Almajali, 2011, p. 2; Alnsour; Al-Hyari, 2011, p. 5; Hoehle *et al*., 2012, P. 1; &Mahdi, 2011, p. 5534), further justifies the need to conduct research of this nature. Besides, past studies have only included very small number of independent variables for the purpose of predicting internet banking adoption. For instance, Nor and Pearson (2008) used DTPB to improve a number of variables in their intention model but they did not determine the IBSA factors holistically and this further clearly highlights a major gap in the previous studies.

Furthermore, lack of trust among online users has equally undermined the rate of adoption of IBS. This is quite obvious because evidence has shown that despite that

number of online users has increased in the recent time, majority of them are still hesitant to release their personal information through internet banking sites (Kim *et al*., 2011). This situation is further aggravated as majority of them are nursing the fear that their money could be lost due to internet banking transaction errors (Celik, 2008). Apart from this, the fear of hacking, phishing and news about online fraud have continued to intimidate users of internet banking (Shendy, 2011). In the Iraqi context for instance, a recent hacking incident where hackers of Nigerian nationality defrauded 12 Iraqi citizens to the tune of USD 2 million during correspondence via the Internet (Iraqipresidency, 2012) has continued to pose threats to Iraqi people. In addition, many of the customers still lack confidence about the usage of internet for banking transactions, and are quite unaware of the benefits and importance of IBS. Importantly, they still regard internet banking to be complex and are not willing to use this advanced technological financial systems (Iraqdirectory, 2012c; Mohsen, 2010, p. 14). For as long as the internet business is based on individual trust, using high technology transactions not being tangible (Almajali, 2011, p. 2; Amoroso & Hunsinger, 2008), IBSA will remain an issue in Iraq (Shindy, 2011; Mohsen, 2010). Additionally, lack of personal interaction while performing internet banking transaction is a major concern for most users (Nor & Pearson, 2008) and this has actually created doubts with respect to the correct processing of their transactions. Therefore, studying trust as a construct as it affects the level of customer attitude towards building greater confidence in the adoption of internet banking is essential.

Accordingly Jasim and Mubark (2010) asserted that many technological factors are responsible for the decline of customers' adoption of IBS in Iraq. Some of these factors relate to small number of internet users (only 9%) (Report of United Nations

ESCWA, 2010, p.19) and which implies that Iraqis are weak in the use and applications of internet technology regarding IBS (Alhammadany & Heshmati, 2011b, p. 1). It therefore seems important that influence of individual factors of technology (IFT) on IBSA in the Iraqi context should be studied (Shendy, 2011). Ezzi, (2014) in this regard asserts that there is every tendency that IBSA in Gulf countries in general, and in Iraq republic in particular, may continue to dwindle as a result of poor perceptions of Internet banking users and/or due to lack f adequate skills in using technology to solve their banking needs. These factors might hinder adoption IBS in these countries where the level of Individual factors technology are suboptimal. Besides that, the IBS is round-the-clock availability; but in developing of nations such as Iraq, where consumers are reluctant to continue using IBS (Ezzi, 2014, P.31).

Furthermore, another factors causing low adoption of internet banking in Iraq is lack and the declining role of the social influence (Al-hammadany & Heshmati, 2011a, p. 70; Shendy, 2011 p.17). For instance, when banks advertise their services through daily and weekly news paper and other medium, there is every tendency that the customers could be influenced. However, the influence of family members, friends, and colleagues at work can also be of great influence but evidence has shown that these social factors are lacking as the majority of Iraqis are not actively involved in the usage of internet banking. It is therefore essential to investigate the influence of social norms on the adoption of internet banking among Iraqis especially that this construct has not been tested empirically in Iraq.

Importantly, a small number of Iraqis use computer as over 70% do not use/own personal computer and this may be attributed to ignorance and lack of self-efficacy (Cosit, 2010). Furthermore, lack of adequate government and technological support which has not been tested empirically in the context of Iraq is equally responsible for low level of diffusion of IBSA in Iraq (Aldhmour & Shannak, 2009; Shendy, 2011). These factors have also not been empirically tested previously in Iraq.

Basically, very few literature with respect to comprehensive models of IBSA constructs are available (e.g., Hoehle *et al.*, 2012, P. 1, Mahdi, 2011, p. 5534; Almajali, 2011, p. 2; ALmajali & Nik Mat, 2011; Alnsour & Al-Hyari, 2011, p. 5; Alhudaithy & Kitchen, 2009, p. 66; Al-Somali *et al*., 2009, p.13; Nor & Pearson, 2008; Shih & Fang, 2004). These empirical studies had focused on the factors that could impact IBSA. However, these studies are fragmented in nature since majority of them made use of different number of constructs for their models and have equally failed to holistically capture the success factors responsible for the adoption of IBSA. Besides, most research on IBSA models were conducted extensively in developed countries, and only a few have been tested in developing countries (Abushanab, Pearson & Setterstrom, 2010, p. 494; Al-Somali *et al*., 2009, p. 13), especially in Iraq (Shendy, 2011). Based on the foregoing discussions, the focus of this study is on Iraq and shall attempt to apply DTPB for the purpose of researching the predictors of subjective norms, attitude, perceived behavior control and individual factors of technology toward IBSA. Since internet banking is still at infancy stage in Iraq (Iraqdirectory, 2012c), this study shall therefore help in the proper application of ICT that will help in the appropriate implementation of internet usage in the banking sector.

It is hoped that with this research, the rate of adoption of internet banking and other e-businesses will significantly improve in order to rebuild a solid economy that can favourably compete and be compatible with contemporary global standards (Al-Rubaie, 2011).

1.4 RESEARCH QUESTIONS

Based on the problem statement which have discussed, this study aims to examine the acceptance of IBSA in the Iraqi public universities environment. The following questions proposed and their corresponding answers could be used as a guide for this research:

1. What are the most important factors that determine customers' behavior toward IBSA?
2. What are the significant factors that influence of attitude toward IBSA?
3. What are the significant factors that influence of subjective norm toward IBSA?
4. What are the significant factors that influence of perceived behavior control toward IBSA?
5. How can the underpinning theory of DTPB be used to explain IBSA?

1.5 RESEARCH OBJECTIVES

This research is based on the DTPB model (Taylor & Todd, 1995). The researcher intends to extend the DTPB by integrating extra constructs (i.e., individual factors of technology, third party support,andtrust). This research aims to understand DTPB and explore their influence on the acceptance of Internet banking in the the Iraqi public universities. This study’s objectives specifically are:

1. To identify the most important factors that determines customers'usage behavior toward IBSA in Iraq.
2. To investigate the significant factors of attitude toward IBSA.
3. To investigate the significant factors of subjective norm toward IBSA.
4. To investigate the significant factors of perceived behavior control toward IBSA.
5. To evaluate the applicability of DTPB to explain the antecedents of IBSA.

1.6 SIGNIFICANCE OF STUDY

This study intends to investigate and determine the antecedents of IBSA in the Iraqi context, using the DTPB model (Taylor & Todd, 1995), and quantitative methods. The researcher expects that this research will be significant in several areas, by adding new knowledge for the Iraqi academics, practitioners and organizations.

This research is significant since it will add new information to the existing literature, and develop an extended body of knowledge related to DTPB. It also expects to formulate a new version of the DTPB, as a comprehensive model to investigate a set of antecedents that influence IBSA. This study will extend the DTPB model by adding new constructs of trust, third party support in terms of social recommendation as well as prestigious media, and individual factors of technology, as determinants of an individual's acceptance of a specific information technology, or more specifically IBS. To date, no single model examines these antecedents for the actual behavior in one study in an IBSA setting. Thus, the model generated from this research may be a useful tool for academics to understand these antecedents in the future. Furthermore, the newly developed model has not been used in the Middle East, particularly in Iraq. This study can help Iraqi academics who are interested in

the IBSA topic, since there are only quite a few similar studies that tackle this particular issue (Al-hammadany & Heshmati, 2011a; Shendy, 2011). From the findings of this study, the researcher expects to contribute more insights to help in the understanding of the antecedents that have the greatest effects on customers' adoption of IBS.The theoretical perspectives as following:

1. This study is important as it further contributes to the growing literature on IBSA.
2. This study is significant since it will add new information to the existing literature, and develop an extended body of knowledge related to DTPB.
3. The present study is important for a country like Iraq, by providing IBSA service, which will lead to increase the financial income and productivity.

For the practitioners' side, this study will decompose the attitudinal structure of individual behavior for IBSA. It is hoped that this will provide more accurate insights into the antecedents of IBSA (Taylor & Todd, 1995), which will assist financial executives to determine which are important to their customers' behavior towards IBSA. It will also help bank executives to formulate strategies that could significantly affect IBSA among their customers. Higher acceptance should augment their organization's competitiveness in the market. Moreover, after determining these antecedents; the banks could work on developing and improving their relationships with their clients. The researcher expects the findings to help the banks to provide their clients with appropriate IBS, and assist them to make the right decisions by providing what they need so that they become more inclined to adopt IBS. The researcher also hopes that the banks will provide instructions to potential users on the usage of the new IBS, and its related technologies.The practical perspectives as:

1. This study will help bank executives to formulate new strategies that could significantly affect IBSA among their customers.
2. This research, could hence contribute by helping organizations, such as banks, assurance companies, airline companies, scientific research institutions and the health sector to better comprehend the factors which influence customers' behavior regarding the adoption of technological services in general, and IBS, in particular.
3. The customers could also benefit from this research by knowing how to select the appropriate IBS. And assist them to make the right decisions. Besides that, they could become more familiar with using IBS.

The organizations in general, that depend on e-business, or purchase their products or services through the internet, could benefit from the findings of this research. Further, the findings can enrich knowledge and understanding of technology adoption and the factors that influence customers' intention or behavior to use or adopt the new technologies, or any other innovation. This research, could hence contribute by helping organizations, such as banks, assurance companies, airline companies, scientific research institutions and the health sector to better comprehend the factors which influence clients' behavior regarding the adoption of technological services in general, and IBS, in particular, which make the topic of this present study not only unique, but also of high practical significance.

1.7 SCOPE OF STUDY

This study intends to investigate and determine the acceptance of IBS in Iraq. It also will examine the factors that might affect Iraqi staff to adopt IBS. This study will involve staff of the public universities, who are bank customers, and who have bank

accounts, as well IBS adopters. This study has selected this type of sample because public universities are distributed geographically in all the regions of the Republic of Iraq (South, Middle and North) (Mohesr, 2012). On the other hand, all the institutions of the Ministry of Higher Education and Scientific Research in Iraq, and particularly public universities, offer internet infrastructure by wireless fidelity (WI-FI) service and Digital Subscriber Line (DSL) or land line services (Scis, 2012). According to Al-hammadany & Heshmati (2011b), people with MSc and PhD degrees have a considerable level of Internet usage in Iraq due to their involvement in academic and research works. Since the public universities comprise a high percentage of employees who have postgraduate degrees, this supports the choice of employees of public universities in Iraq as this research's sample.

The total number of public universities in the Republic of Iraq is nineteen (19), where eleven of them are in the middle region, five in the Southern region, and three in the Northern region. The sampling for this study will be chosen randomly from these nineteen universities.

The theoretical scope of the present study focuses on determining the antecedents of IBSA in Iraq by presenting several factors: 1) IBSA is predicted by three antecedents and one dimension: attitude, subjective norm, perceived behavior control, and individual factors of technology (technology literacy, resistance to technology, risk of technology, anxiety about technology, and information on technology). 2) Attitude is predicted by perceived usefulness, perceived ease of use, compatibility and trust. 3) Subjective norm is predicted by third party support: firstly, social recommendations from family and friends' influence; and secondly, prestigious media influence. 4) PBC is predicted by internal and external antecedents- internal

being self-efficacy, and external being government and technological support. To examine the influence of the above constructs on IBSA in Iraq, the DTPB model by Taylor & Todd (1995) will be modified.

In recap, this context was chosen because the developing countries have not attracted sufficient attention in the empirical studies of IBSA (Mahdi, 2011, p. 5534; Almajali, 2011, p. 2; Alnsour & Al-Hyari, 2011, p. 5), particularly in Arab countries (Ezzi, 2014, P. 35). Iraq in the process of re-developing itself due to the U.S. occupation (Report of United Nations Economic and Social Commission for Western Asia, 2005; Report of U.S. Agency for International Development, 2009). Finally, the Iraqi government faces current economic problems and needs to improve its performance.

1.8 KEY TERMS DEFINITION

The following terms are defined in the context of this research, as explained below:

Key Terms Name	Definition
Internet Banking Services Adoption (IBSA)	IBSA refers to the internet as a remote delivery channel for banking activities. These include opening a deposit account, transferring funds from one account to another, and payment of bills electronically, via a bank's website.
Attitude	Refers to the feelings of the bank customers (positive or negative) about IBSA.
Perceived ease of use	Refers to the degree to which banks' customers believe that IBSA would be free of effort.

Perceived Usefulness	Refers to the degree to which banks customers believe that IBSA would enhance his or her job performance.
Perceived Compatibility	This means the degree that IBSA is perceived as being consistent with the existing values, needs, and past experiences of bank customers.
Trust	Refers to the subjective probability with which the banks' customers believe that a particular IBSA will occur in a manner consistent with their confident expectations.
Subjective Norm	This means the perception of the bank customers about what other people (Social Recommendations, prestigious media) think of his or her IBSA.
Third Party Support	The perceptions of potential online consumers toward a third party support in terms of social recommendations and prestigious media.
Social Recommendations	Refers to all potential online consumers' family members, friends, and colleagues, supporting and assuring a certain Internet banking transaction.
Prestigious Media	Refers to pressure from the prestigious media to adopt IBS.
Perceived Behavior Control	Refers to how bank customers perceive IBSA, i.e., whether it is difficult or easy to use.
Self-Efficacy	Refers to the confidence and the ability of the customers to begin IBSA.
Government support	Refers to the degree the government makes the IBSA easy and available by legislation, laws, political and governmental support.

Technology Support	Refers to the degree of how much the technology is offered through suitable infrastructure, the needed appliances, internet access and software. These make IBSA easily adoptable and more flexible.
Internet Technology Literacy	Refers to the previous technological experience, specifically about the internet, what is the degree to which bank customers become familiar with internet technologies toward IBS.
Resistance to Technology	Refers to customers' resistance to change ways in dealing with banking activities from traditional to new IBSA electronic services.
Risk Technology	Refers to the customers' perceived risk of the expectation of losses associated with usage of IBSA. Feelings of the customers; afraid or being uncomfortable toward IBSA.
Anxiety of Technology	Refers to customers being anxious when they use of IBS.
Information on Technology	Refers to amount of information that customers have about the IBSA and its benefits.

1.9 ORGANISATION OF THE THESIS

The whole present study consists of five chapters. Following is a content of each chapter.

Chapter one provides the overview of study, key issues, the problems research, research questions, research objectives, significance of the study, scope of the study,and organization of this study.

Chapter tow presents background of Iraq,an intensive review of the relevant literature by presenting the different underpinning theories which have been used in IBSA, IBSA definitions from past studies, the antecedents of IBSA, attitude, subjective norm, perceived behavior control, and individual factors of technology.

Chapter three presents theoretical framework of the study, hypotheses/ propositions development,the research methodology and justifies the methods used in this study, research design(study approach, unit of analysis, identifying population and sample, questionnaire design, measurement of variables/instrumentation, questionnaire scales, questionnaires pre-test, pilot study, data collection procedures, and statistical analysis procedures.

Chapter four presents the preparation of the data for analysis, descriptive statistics, data screening, the rationale behind choosing PLS, testing the measurement model using the (PLS-SEM), goodness of fit of the model, effect size, prediction relevance of the model, assessing the hypotheses testing procedure, summary of the findings, competing model hypothesis testing of original theory (DTPB), and chapter summary.

Chapter five presents the main indicator of finding, discussions the major findings of the study and suggestions, research contributions, implications, elaborates upon important research limitations, avenues for future research, and the conclusion.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter attempts to provide an overview of the status of banks and explains the IBS in Iraq and challenges of IBSA.This chapter also addresses the different underpinning theories which have been used in the IBSA setting, including Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Innovation Diffusion Theory (IDT), Decomposed Theory of Planned Behavior (DTPB), Unified Theory of Acceptance and Use of Technology (UTAUT) and mixed theories (integrated theories). In addition, this chapter provides individual definitions of IBSA,individualfactors technology(IFT), attitude, subjective norm, perceived behavior control (PBC) and its antecedents from past studies. Finally provides operational definitions of variables.

2.1 INTERNET BANKING IN IRAQ

Stable and well-developed financial systems and economic growth are fundamentally linked. Research has empirically evidenced that in developing and advanced economies, countries with developed financial systems grow at faster rates. Resources that are efficiently and prudently allocated by the financial system can increase productivity, boost economic growth, enhance equal opportunity, and reduce poverty (World Bank, 2012).

The wars and the international embargo, isolation, and security situations that engulfed Iraq in the period between (1991-2003), and subsequently the American

occupation, weakened the banking system, resulting in the absence of Iraq from the world scene, in terms of technological developments (International Research & Exchanges Board, 2011).In order to update services in government, private organizations, and public institutions, the banks in Iraq must adopt new technologies, such as e- commerce activities and internet technology services, in both public and private sector banking systems (Faceiraq, 2012; Shendy, 2011).

According to the 2011 report of the CBI, the financial and banking services sector in Iraq started very early in the year 1931. During that period, there was a need for organizing the financial and banking transactions in Iraq. Currently, the Iraqi banking sector consists of 51 licensed banks, as follows: 23 private banks, 11 Islamic banks, 10 foreign bank branches, and seven state-owned banks.Lately, Iraq has been witnessing some movement towards the adoption of IT, and strengthens the country's competitive position in the Middle East and Asia. Because of the successes achieved by some Iraqi banks, many International and Arabic companies have expressed interest in investing in Iraqi banks, for example, the Qatar National Bank (QNB) has obtained the approval of the CBI to raise its stake in Al-Mansour Bank to invest in the Republic of Iraq, from 23% currently to 51% (Al-seyassah, 2012); also, the acquisition by HSBC of a stake in Bank of Dar Alsalaam, and the acquisition of Bank Kuwait (NBK) of a stake in Bank Credit Iraqi (Aawsat, 2012). There is no doubt that these banks are attempting to provide better service quality to their customers through IBS.

Foreign banks are increasingly becoming interested to conduct business in Iraq. Initially, some of the foreign banks were inclined towards foreign companies doing

business in oil and related activities; however, over time, they realize they should help improve the overall banking climate and help stimulate the development of the financial sector.The number of banks in Iraq has increased over the last few years with the emergence of both local and foreign banks as shown in Table 2.1, which in turn compete to offer new banking services and satisfy the clients' needs (CBI, 2012).The majority of these banks have active SWIFT or "Society for Worldwide Interbank Financial Telecommunication" connections, besides connection to the Iraq Payments System operated by the CBI. The CBI aims to reduce the use of cash in the country despite the geographyical and security challenges, which make the transfer of money across the country difficult and risky. Hence, the objective is to automate the settlement of checks, salaries and the activation of automation systems for electronic cards and electronic banking, in order to have more liquidity in the banks. Iraqi banks are still in the early stages with regards to IB.

Table 2.1
Number of Banks (local and foreign) in Iraq

Year	Number of local commercial banks	Number of foreign commercial bank	Total
2000	22	1	23
2001	23	1	24
2002	24	1	25
2003	25	1	26
2004	25	1	26
2005	28	2	30
2006	31	4	35
2007	35	4	39
2008	36	5	41
2009	36	6	42
2010	38	7	45
2011	41	10	51

Source: (CBI, 2012)

Currently, in total, Iraq has nine full electronic funds transfer (EFT) banks (Investpromo, 2012). These banks provide the customers with common services, as follows: 1) view balances and details of customer's accounts ; 2) view balances and details of any credit cards and pay the amount involved; 3) download operations electronically; 4) transfer funds within customer's accounts, ; 5) apply to open new accounts, ; 6) apply for loans and loan calculator, ; 7) check currency exchange and interest rates, ; 8) pay mobile phone bills; 9) modify passwords ; 10) make appointment with a customer service representative; and 11) update personal details.

After years of technological isolation, it is about time to bring to Iraq the state- of-the- art information technology systems. Rebuilding and automating Iraqi banking and the financial sector will have a huge impact on the Iraqi economy (Al-Rubaie, 2012).Additionally, the Iraqi government and private banks in Iraq have spent around US$ 500 million to upgrade their internet technology services (ITU, 2011b; Mawtani, 2011); however, the IBSA by the customers is still very low as it is still in the "laggard innovation adoption stage". Only 1 % of the total populations are IBS users (Ipbl, 2012; KIB, 2012; ITU, 2010).

The government has also undertaken several initiatives to facilitate the Iraqi people to connect to the rest of world via high speed internet, besides enjoying new services, like (VOIP), so as to simplify and make more efficient, the conduct of businesses (ITU, 2012). It has become clear that Iraqi’s technological environment is facing a number of challenges that stand out as obstacles to prevent the diffusion of internet and its applications, as in the case of IBSA.

2.2 UNDERPINNING THEORY OF IBSA

Several models and theories are widely available for the purpose of examining and comprehending those factors that can influence the adoption of information system and information technology. Having reviewed literature, several competing models were found as used by previous researchers to predict intention to adopt IT. Some of these theories and models include: (1) Theory of Reasoned Action (2) Diffusion of Innovation Theory (DIT) (3) Technology Acceptance Model (TAM), (4) Theory of Plan Behavior (TPB), (5) DTPB, and (6) Unified Theory of Acceptance and Use Technology Model (UTAUT). Many of these focused on and investigated the IBSA setting by using one or more of the Technology Acceptance Models and theories (Hoehle, Scornavacca, & Huff, 2012; Mansumitrchai & Chiu, 2012; Nasri, 2011; Abukhzam & Lee, 2010; Al-majaly & Nik Mat, 2010; Wenchao & Jordan, 2009; Nor & Pearson, 2008; Gounaries & Koritos, 2008; Jahangir & Begum, 2008; Hernandez & Mazzon, 2007; Dauda *et al*., 2007; Guriting & Ndubisi, 2006; Yu & Lo, 2006; Eriksson *et al*., 2005; Jaruwachirat & Fink, 2005; Karjaluoto *et al*., 2002; Polatoglu & Ekin, 2001; Gerard & Cunningham, 2003; Wang *et al*., 2003 Chan & Lu, 2004; Kolodinsky *et al*., 2004; Shih & Fang, 2004; Liao *et al*., 1999; Sathye, 1999).

Even though many of the models used in the past have the capacity of investigating the process of adoption, each theory however has different constructs. For instance, the constructs of TRA include behavior, behavioral intention, subjective norm and attitude. TAM includes external factors such as perceived usefulness (PU) and perceived ease of use (PEOU), behavioral intention and actual usage.TPB on the other hand includes behavioral intention, behavior, perceived behavioral control, attitude and subjective norm. Diffusion of Information theory (DOI) inculcates

complexity, relative advantages, compatibility, trialability complexity, and actual usage. The constructs of DTPB includes PU, PEOU, compatibility, peers influence, superior influence, self-efficacy; resource facilitating conditions, technology facilitating conditions, PBC, subjective norm, attitude, behavior intention, actual usage; and UTAUT includes performance expectancy, effort expectancy, social influence and facilitating conditions. There are some common threads and themes among these models. The section that follows describes each model as used in IBS by several studies.

2.2.1 TRA (Theory Reasoned Of Action)

Theory of Reason Action (TRA) was developed by Ajzen and Fishbein in 1975. The focus of TRA was on behavioral intention and not on actual usage. Sheppard *et al.* (1988) asserts that one of the most used models in determining behavioral intention is TRA as it considers the belief of individual in order to explain behavior (Morris & Dillon, 1997). The TRA emphasizes that user behavior is determined by intention instead of attitude (Norman & Smith, 1995) while the determinants of behavioral intention are subjective norms and user's attitude (Ajzen & Fishbein, 1975). In addition, belief of an individual with regards to the consequences of the behavior determines his/her attitude.

2.2.1.1Constructs of TRA

In 1975, Fishbein asserts that the variables of TRA are behavior, behavior intention, attitude and subjective norm. He however defines attitude as positive or negative feelings of an individual with respect to the performance of target behavior (1975, p. 216). Subjective norm was defined by Fishbein and Ajzen (1975, p. 302) as:

perception of an individual with regards to other peoples influence on his performance of a task in question. Behavioral intention was defined as: An individual's subjective probability that he or she will perform a specified behavior (Fishbein & Ajzen, 1975, p. 201). As shown in Figure 2.1 the constructs of TRAconsist of the individual behavior is influenced by intention; behavioral intention is influenced by individual attitude toward using the technology, and by social factors (subjective norm) regarding usage of technology.

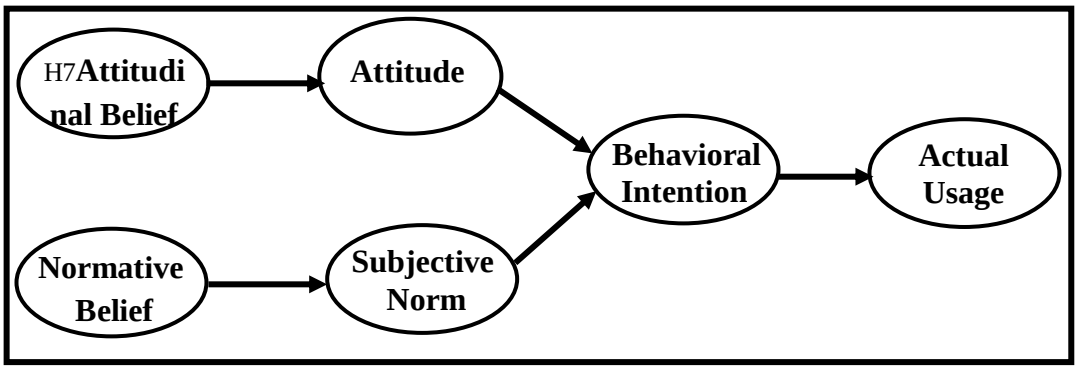

Figure 2.1*: TRA*
Source: Fishbein & Ajzen (1975)

2.2.1.2 TRA in IBSA

TRA has been used in various fields. Its successful application in the prediction of behavior and intention in IBS has also been attested to. For instance, the study of Wan et al (2005) in Hong Kong on factors that influence customers to patronize four major banking channels services revealed that TRA has less application especially when behavior is habitual in nature with regards to adoption of IBS, telephone banking and other channel services. In contrast however, Ok and Shon (2006) while applying TRA in Korea in order to determine and identify those factors that influence the actual use of IBS discovers that behavioral intention to use IBSA was predicted by TRA significantly. This study collected data from 300 personal banking

customers who are internet banking users. Similarly the study of Nor & Pearson (2008) that was conducted among business and MBA students in different higher institutions of learning in Malaysia discovered that TRA has the power to predict behavioral intention of individual toward IBSA. This study revealed that subjective norm and attitude impact behavioral intention of individual to adopt IBS. A related study was conducted by Al-majali (2011) in order to ascertain those factors that influence customers' attitude towards adoption of IBS in Jordan. The study used 700 employees who are using IBS. It was found that customers' intention to use IBS was significantly influenced by attitude.

2.2.1.3 Limitation of TRA

Despite that TRA has ability to predict intention and attitude, a number of limitations are inherent in it since behavior is not under full volitional control (Ajzen, 1985). In this respect, Sheppard (1988) asserts that a clear distinction should be made between intention and behaviors because avidity, other than intention, determines how the behavior is performed. Sheppard further states that TRA does not take into consideration the possibility of failure that may occur due to a person's intention/behavior in the course of executing the behavior. In addition, TRA has limited power in explaining habitual actions, irrational decisions and unconscious behavior it has less application when it comes to habitual behavior (Wan *et al*., 2005).

2.2.2 TPB (Theory of Planned Behavior)

The TPB extends TRA by incorporating other variables that either make behavior to be difficult or ease to perform. This extension was meant to explain the limitation of

TRA in dealing with behavior since a person has incomplete volitional control over behavior (Ajzen, 1991, p. 181). The proposition of TPB is that two factors of attitude and subjective norm determine behavioral intention. In addition, PBC was also added so to take care of circumstances where an individual may be lacking total control over her or his behavior (Ajzen, 1985; Ajzen & Madden, 1986). PBC has been proved by previous studies to have significant impact on behavioral intention and actual behavior. This is indicated in Figure 2.2. Moreover PBC can have a direct or interactive effect on behavior (through behavioral intention).

In this respect therefore, Ajzen (1991) is of the opinion that there are circumstances where behavioral intention may slightly vary from actual behavior; therefore, PBC should have the power to predict of behavior independently. Even though PBC and behavioral intentions are significant predictors of actual behavior, in some particular conditions, there is tendency that one predictor may be significant than the other predictor. Therefore, where behavioral prediction of intentions is likely to be accountable by actual or deliberate intentions, PBC should be able to directly predict behavior and facilitate the implementation of behavioral intentions into behavior (Armitage & Conner, 2001). As a result, PBC and behavioral intention, can be used directly or indirectly to predict actual behavior**.**

2.2.2.1Constructs of TPB

The constructs of TPB include actual behavior, attitude, behavioral intention, subjective norm, attitudinal belief, normative belief and control belief (Ajzen, 1991). The underpinning of TPB is that behavior is a function of salient beliefs related to that behavior, which are considered as the main determinants of a person's behavioral

intentions and actual behavior. These are defined as follows:

Attitudinal belief: This influences behavior through attitude and it is often regarded as Behavioral belief which is a subjective probability that certain behavior will yeild a given result.

Normative belief: This refers to person's motivation to adhere to diverse referents group, or prevailing subjective norm. Normative beliefs are simply regarded as the perceived behavioral expectations of important influential referent individual or group.

Control belief: This refers to the perceived presence of those conditions that assist or disturb the performance of a behavior or contributing to PBC, in proportion to the factors present in a given situation. Within the context of IS research, these are defined as: An awareness of external and internal constraints on behavior (Taylor &Todd 1995. p. 149). Furthermore, PBC refers to "the extent in which an individual has the necessary resources, skills and other conditions to execute or defend a given behavior" (Ajzen, 1991, p. 188). That is, perceived difficulty or easiness of performing a behavior.

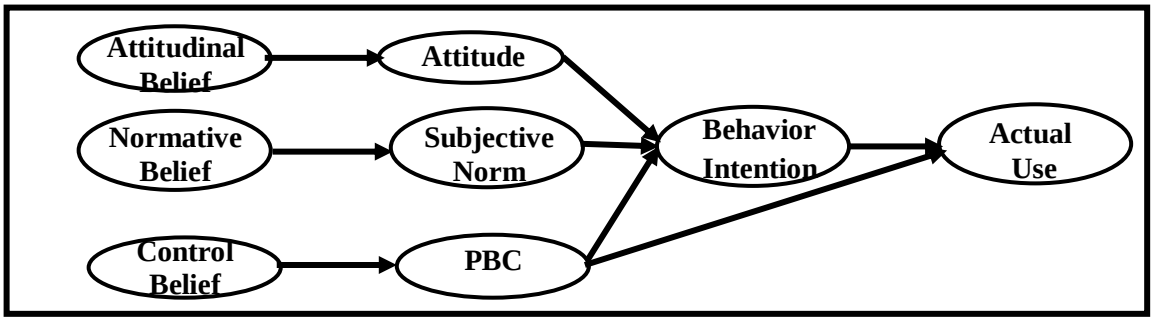

Figure 2.2: *TPB Model*
Source: Ajzen (1991)

2.2.2.2 TPB in IBSA

TPB has been widely applied in various studies of technology acceptance. In particular, it has used successfully in the prediction of IBSA. For example, the study of OK and Shon (2010) that was conducted in Korea revealed that behavioral intention was not influenced by attitude, subjective norm, and PBC, and but was influenced by normative belief structures, attitudinal belief structures, and control belief structures. Both TBP and TRA predict behavioral intention to use the IBS well with TBP having some empirical merits over TRA. In addition, Shih & Fang (2004) extended TPB model in order to examine those factors that influence behavioral intention of 425 banking customers in Taiwan to adopt IBS. The outcome of the study reveals that attitude is significant in the prediction of intention while PBC and subjective norm are not. Further, Yaghoubi and Bahmani (2011) conducted their study among 349 Iranians using TPB and the outcome of their study reveals that controlling the risk of IBS is more significant than providing benefits; on the other hand, it is very robust in predicting customers' intentions to use such services.

2.2.2.3 Limitations of TPB

A lot of criticism has been levied against TPB by past authors. Some of the criticism indicates that TPB does not take into considerations variables such as perceived moral obligation, habit and self identity that have potential of predicting behavioral intentions and actual behavior. The implication of this is that TPB only introduces PBC and which does not proffer answer to all uncontrollable elements of behavior. The underlining factors behind PBC were summed up to create a measure for it. This summation has however been highly criticized by previous authors for not indicating precise factors that can predict behavior and for the prejudice it may create. In this

circumstance therefore, Taylor and Todd (1995) opined that TPB still requires that individuals be motivated in order to perform desired behavior. However, this assumption may be problematic when studying consumer adoption behavior.

2.2.3 IDT (INNOVATION DIFFUSION THEORY)

Rogers (1983) proposes IDT model that is grounded in sociology. An innovation is defined in the literature as "an idea, practice, or object that is perceived as new by an individual or other units of adoption" (Rogers, 1995). The idea may be new or perceived to be new. It is further defined as a process that has been adopted to conveying innovation among members of a social system through particular channels and over a stated period of time (Rogers, 1995). It has to do with a type of communication system that is concerned with the acceleration of messages which are regarded as new ideas. Communication in this view refers to the process through which members of the group share and make information available to one another with the purpose of creating a mutual understanding. There is a degree of uncertainty in a new idea and it is often perceived to be risky. An individual will like to go an extra mile with the purpose of reducing such uncertainty in order to obtain information. Therefore, information is different in matter-energy which affects uncertainty in a position where a choice exists among a set of alternatives. From the earlier definition of diffusion, four elements can be detected: (1) Communication channels (2) innovation (3) social system and (4) time.

2.2.3.1 Constructs of IDT

IDT has seven components or service characteristics that are postulated to have influence on consumer adoption of new services or products.They are relative

advantage, compatibility, complexity, trialability, observability, image and voluntariness, as shown in Figure 2.3.

1- **Relative advantage**: "the degree to which an innovation is perceived as being better than its recursor"(Moore & Benbasat 1991, p. 195). This in essence, refers to the degree in which an innovation is apparently supersedes the initial or old idea. In economic terms, this can be alculated but other non economical variables such as expediency, social prestige and satisfaction are also important factors that must be taken into consideration. What does not matter however, is that whether an innovation is of great objective but users must perceive that the innovation has some advantages. The greater the apparent relative advantage of an innovation, the more rapid will its rate of adoption be.

2- **Compatibility**: This refers to the extent in which an innovation deemed reliable or compatible with the past experiences, existing values and the needs of potential adopters. It is essential to state that if an idea is not in line with the norms and values of the people it would be adopted when compared with the idea that is compatible. The adoption of an incompatible innovation habitually requires the previous adoption of a new value system, which is a moderately slow process.

3- **Complexity**: This refers to the degree in which an innovation is deemed or perceived to be difficult to use or recognize. Naturally, some innovations can be understood easily while some are very complex thereby lead to slow rate of adoption. It is important to emphasize that new ideas that are easily understood will be quickly adopted than innovations which require users to develop or acquire new skills.

4- **Trialability**: This explains the reasons why new ideas that can be tried on the payment plan are usually adopted quickly than other ideas. An innovation that can be tried gives fewer uncertainties to the adopter who is considering such service and who can learn by doing.

5- **Observability**: This refers to the extent to which the outcome of an innovation can be seen by others. When an individual can observe the outcomes of an innovation easily, there is every tendency that the innovation will be adopted quickly. Importantly, such possibilities often stimulate debate of a new idea among friends, neighbors of an adopter since they often ask for evaluation of information about the new innovation.

6- **Image**: This refers to the extent to which a user perceives that using a technology will enhance his/her image or status in the social system.

7- **Voluntariness:**This indicates the extent to which an individual believes that using a particular technology will be free of effort.

2.2.3.2 IDT in IBSA

IDT has been used in a number of information technology acceptances and has been applied successfully in IBSA. Several researchers have used Rogers' model in their empirical work which examined IBSA as a technological innovation (Eriksson *et al*., 2008; Nor & Pearson, 2007; Ndubisi&Sinti; 2006; Kolodinsky *et al*., 2004; Gerrard & Cunningham, 2003). For example, the study of Gerrard *et.al.* (2006) discussed eight factors for the purpose of explaining the reasons why consumers refuse to adopt IBS as an innovation. These factors include lack of knowledge, perceptions about risk; inertia; human touch, IT exhaustion, inaccessibility, pricing and need. However, the most frequently mentioned factors were risks perception, lack of perceived need,

and followed by lack of knowledge of the service, inertia, inaccessibility; lacking the human touch; pricing; and IT fatigue. This therefore suggests that there is a need to stage marketing campaign in order to get consumers support for the purpose of embracing IBS especially the male customers. In another angle, the findings of this study also indicate that higher income, high education, previous experience of internet, and knowledge about IBS are the major factors that influence more people to use IBS. In addition, Nor & Pearson, (2007) conducted their study in Malaysia by using IDT to investigate factors that make individuals to adopt a new technology. Regarding IBS, the result of this study indicates that trialability, trust, and relative advantage significantly influenced the IBSA. In addition, Eriksson *et al*. (2008) extends Rogers' IDT model (Rogers, 1983) by applying it in the context of Estonian. The independent variables of this study include relative advantage; perceived risk; complexity; and compatibility. The results of this study reveal that complexity and relative advantage are the factors that strongly influenced IBSA. Also, this study indicates that the compatibility and perceived risk significantly (although weak and negative) influenced IBS.

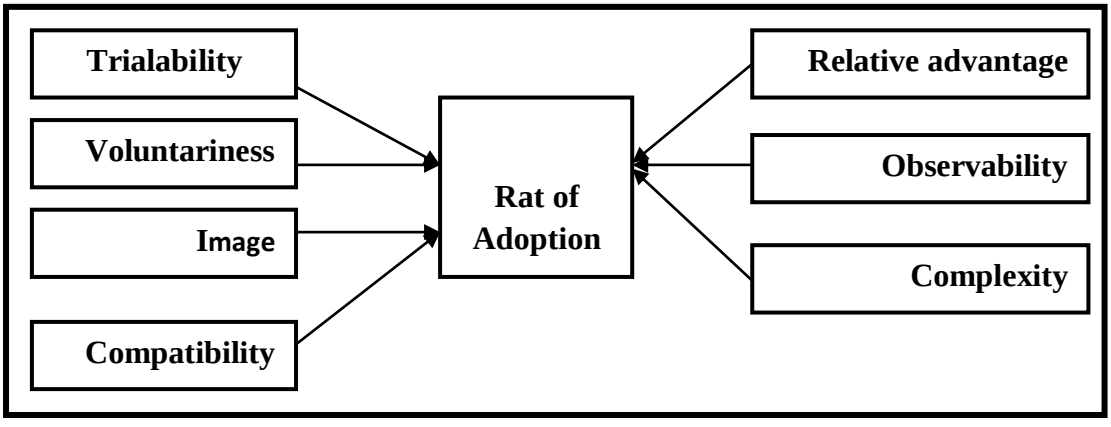

Figure: 2.3*: IDT Model*
Source: Moore & Benbasat (1991)

2.2.3.3 Limitations of IDT

The limitations of IDT can be considered from two perspectives. First, IDT does not clearly state how attitude emerges into acceptance/rejection and how innovation features fit into the process (Chen *et al*. 2002; Karahanna & Straub, 1999). Second, even though IDT and TAM emanated from different fields, the two theories are similar. For example, the relative advantage of IDT is often regarded to be akin to PU construct in TAM, while the complexity variable is also similar to PEOU of TAM. This suggests that TAM and IDT often go together (Chen *et al*., 2002).

2.2.4 TAM (Technology Acceptance Model)

Various researchers have used TAM for the prediction and measurement of usage and acceptance of computer applications and other information technology. Fred Davis (Davis, 1989) developed TAM as he derived his concept from TRA. TAM is a specific theory that is used in information technology field while TRA is a general theory that is used to explain general human behavior. Moreover, TAM was developed originally to comprehend the causal relationship between user's acceptance of information system and external variables Davis (1989) stated that, the purpose of TAM was to explain the determinants of computer applications acceptance in general, as it is also capable of explaining user behavior across a broad range of end-user computing technologies and user populations. Additionally, TAM is also used in explaining the reasons why a particular system may not be acceptable. It therefore provides the basis for tracing the influence of external factors on attitudes, intention and internal beliefs (Davis, 1989).

2.2.4.1 Constructs of TAM

The core constructs of TAM are PU and PEOU, and have been argued to have strong influence on behavioral intention via individual attitude as shown in Figure 2.4. Davis (1989), asserts that PU is ‘’degree to which a person believes that using a particular system would enhance his or her job performance’’ (Davis 1989, p. 320) while he defines PEOU as ‘’the degree to which a person believes that using a particular system would be free of effort’’ (Davis 1989, p. 320). These therefore reflect the beliefs which individual holds with respect benefits and degree of user-friendliness of an innovation respectively. As conceptualized by Davies, the original TAM construct of attitude. However, as a result of empirical evidence, attitude has been excluded from the final model excludes since it does not fully mediate between PEOU, behavior intention and PU’s link to behavior intention seemed more significant (Davis, Bagozzi & Warshaw, 1989). Davis hypothesizes that PEU strongly influences PU and this implies that when a technology is perceived to be easily used, it can be assumed that the benefits will be greater, all things being equal.

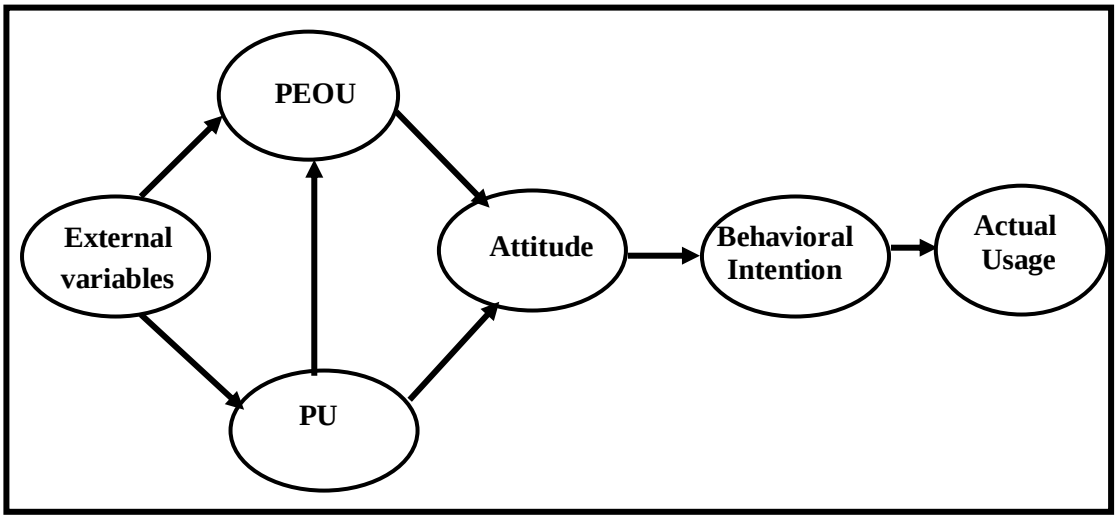

Figure 2.4
Technology Acceptance Model(TAM)
Source: Davis (1989)

2.2.4.2 TAM in IBSA

Concept of TAM has been used widely for the purpose of predicting human behavior and examining acceptance of Information Technology. It has been used as significant predictor of computer technology use (Lai & Li, 2005). In the recent time, researchers in the field of internet technology adoption have equally used TAM especially whereby IBSA is a focus of the study as it is used to further examine the various factors that are associated with IBS. Further, TAM has also been applied empirically to investigate IBS setting and has attracted the attention of most researchers' with respect to those that could influence IBSA .For instance; Gurting (2006) conducted a study using original TAM to predict the intention of bank customers towards IBSA. The outcomes of this research reveal that PU and PEOU are significant in predicting IBSA intention, and equally revealed that computer self-efficacy is a strong determinant of PU and PEOU. AL-Saajjan and Dennis (2008) in another study in Saudi Arabia discovered that attitude is important in predicting IBSA because it is an implicit construct to behavioral intentions while it constitutes cumulative variable that is important in predicting adoption behavior. In addition, this study posits that subjective norm has indirect effects on IBS behavior through other salient beliefs. This model was able to predict between 8l and 83% behavioral intention when compared with other models (62%) (Wang *et al.*, 2003).

In addition, Celik (2008), added contextual factors to TAM theory and reported that PEOU and PU are important and direct determinants of customers' attitudes towards IBS. The study also reports that PU, perceived risk, PU, and attitude significantly determine intention to utilize IBS. Furthermore, even though playfulness was reported to positively influence PEOU, PBC was also found to have direct and

positive influences on PEOU and PU, and indirect influences on attitude toward intention of customers to accept IBS. In this view, Al-Somali *et al.* (2009) by extended TAM and discovered that awareness of benefits, computer self-efficacy, quality of internet connection and social influence have significant effects on PU and PEOU of IBSA; and that trust, resistance to change and education have significant impact on attitude towards IBSA.

2.2.4.3 Limitations of TAM

TAM has several limitations. Legris (2003) in this respect found that PEU and PU and are not sufficient to predict acceptance of technology. In addition, Legris also found that several TAM studies are inconsistent or not clear enough to explain factors that significantly influence adoption of IBS. Taylor and Todd, (1995) also assert that TAM provides very limited guidance about how usage is influenced through design and implementation (Taylor & Todd 1995). In addition, TAM has also been criticized for substantially ignoring those external and situational factors such as culture and other situational factors that can influence adoption (AlSukker & Hasan, 2005). This study also assert that even though TAM model does provide feedback on PEU and PU, this does not cover other areas such as integration, flexibility, completeness of information and information that can help to enhance and improve the adoption of IBSA.

Furthermore, previous studies have also emphasized that TAM needs to be further investigated due to its invariance across different subgroups of respondent with the purpose of making sure that different sample profiles would not have a negative effect on the findings. Unfortunately, this has not been achieved by most previous

studies (Lai & Li, 2005). Finally, TAM's most important limitation is in its inability to resolve inconsistency in many of its related studies especially the relationships between its main constructs where significant relationships are reported in some cases while insignificant relationships are reported in others. For example, many studies have reported mixed findings with respect to the influence of PEU on attitude intention and usage. In addition, the correlation between PEU and PU however are significant in most studies while exceptions to such relationships were traced to type of users and their experiences (e.g., professional users have different academic capacities, and the more experienced the users are the less likely the effect of PU and PEOU) (Legris, Ingham & Collerette, 2003).

2.2.5 DTPB MODEL

The DTPB extends TPB, TRA and IDT. Taylor & Todd (1995) suggest that TPB constructs should decomposed with the purpose of making it stronger in order to predict intention of users to use information technology. DTPB posits that subjective norm, attitude, and PBC influence the intention to adopt technology. In addition, Taylor and Todd (1995) equally extended TPB including the normative, attitudinal, and control beliefs into multi-dimensional constructs with the purpose of providing higher level of explanatory power, and as well as comprehensive understanding of the antecedents of behavior.

2.2.5.1 DTPB Constructs

The basic tenet of TPB is that it considers actual behavior as a direct consequence of behavioral intention, attitude and subjective norm and PBC (Ajzen, 1985, 1991).The individual's attitudes is a reflection or product of positive or negative feelings that are

channeled towards the performance of a behavior while subjective norm mirrors perception, i.e., individual desire to perform or not to perform a behavior. PBC reflects perception of internal and external constraints on behavior. TPB posits that attitude, subjective norm and PBC are determined by the certain belief structures which are regarded as normative, attitudinal, and control beliefs that are related to subjective norm, attitude, and PBC, respectively. Ajzen (1991) revealed that the relationships among these variables are not well understood since some of the beliefs may not be consistently related to attitude, subjective norm and PBC. In addition, these set of beliefs especially those that are connected to attitude, are eccentric to the empirical setting, thereby making it difficult to generalize TPB. These are two limitations of the TPB that lead to the need to decompose those belief structures of TPB.

In view of the above, Taylor and Todd (1995) proposed a set of attitudinal beliefs that were derived from the literature and which describes IDT (Rogers, 1983, 1995). IDT postulates five perceived features of relative advantages, complexity, compatibility, trialability and observability that can influence adoption (Rogers, 1983) However, relative advantages, complexity and complexity were found to be related to adoption decision consistently (Moore 1991). Relative advantages simply refer to the extent to which an innovation provides benefits that surpass those of its precursor, and inculcate factors like image enhancement, economic benefits, convenience and satisfaction (Rogers, 1983). Relevant advantage is similar to the PU construct in TAM (Davis, 1989). PU and Relative advantage were found to be connected to improvement and performance. The two constructs have also been operationalised with respect to their relative influence on performance (Davis, 1989;

Moore & Benbasat, 1991).

According to Rogers (1983), complexity refers to the degree in which certain innovation is deemed to be difficult to comprehend, learn or operate. This construct was however found to be contradictory with PEOU construct of TAM (Davis, 1989). Compatibility considers that innovation must be fit to the potential adopters' previous experiences, existing values, and current needs (Rogers, 1983). Taylor and Todd (1995) therefore posit that compatibility and relative advantages help to increasing the customer's disposition toward IT usage or adoption, while complexity leads to reduction in customers' attitude. In this circumstance, Taylor and Todd suggested attitude toward IT should therefore become more positive. Such finding is inline and consistent with the results of other studies (Moore & Benbasat, 1991).

In line with the above, Taylor and Todd (1995) suggested subjective norm of decomposition is related to divergence of opinion among referent groups. According to DTPB, three referent groups can be found in any organization and these include peers, subordinates and superior. The view of each group differs with respect to their IT usage. Since the peer may be different in their view of technology, researchers therefore suggested that they should be decomposed into two referent groups i.e., peers (students) and superiors (professors). This decomposition simply refers to both the internal notion of self-efficacy and external resource constraints (facilitating condition). Importantly, self-efficacy is regarded as the Judgment of one's ability with regards to the usage of a computer to execute a particular task or job (Compeau & Higgins, 1995). Higher level of self-efficacy can bring about higher level of intention and higher degree of IT usage (Taylor and Todd 1995). Facilitating condition is defined as the objective factors in the environment that observers agree

make an act easy to accomplish. E.g returning items purchased online is facilitated when no fee is charged to return the item. Figure 2.5 shows constructs of DTPB which has decomposed theattitude into PU, PEOU, and compatibility; Subjective norms are decomposed into peer's and superior's influence; and PBC is decomposed into self-efficacy (internal control), resource facilitating conditions, and technology facilitation conditions (external control).

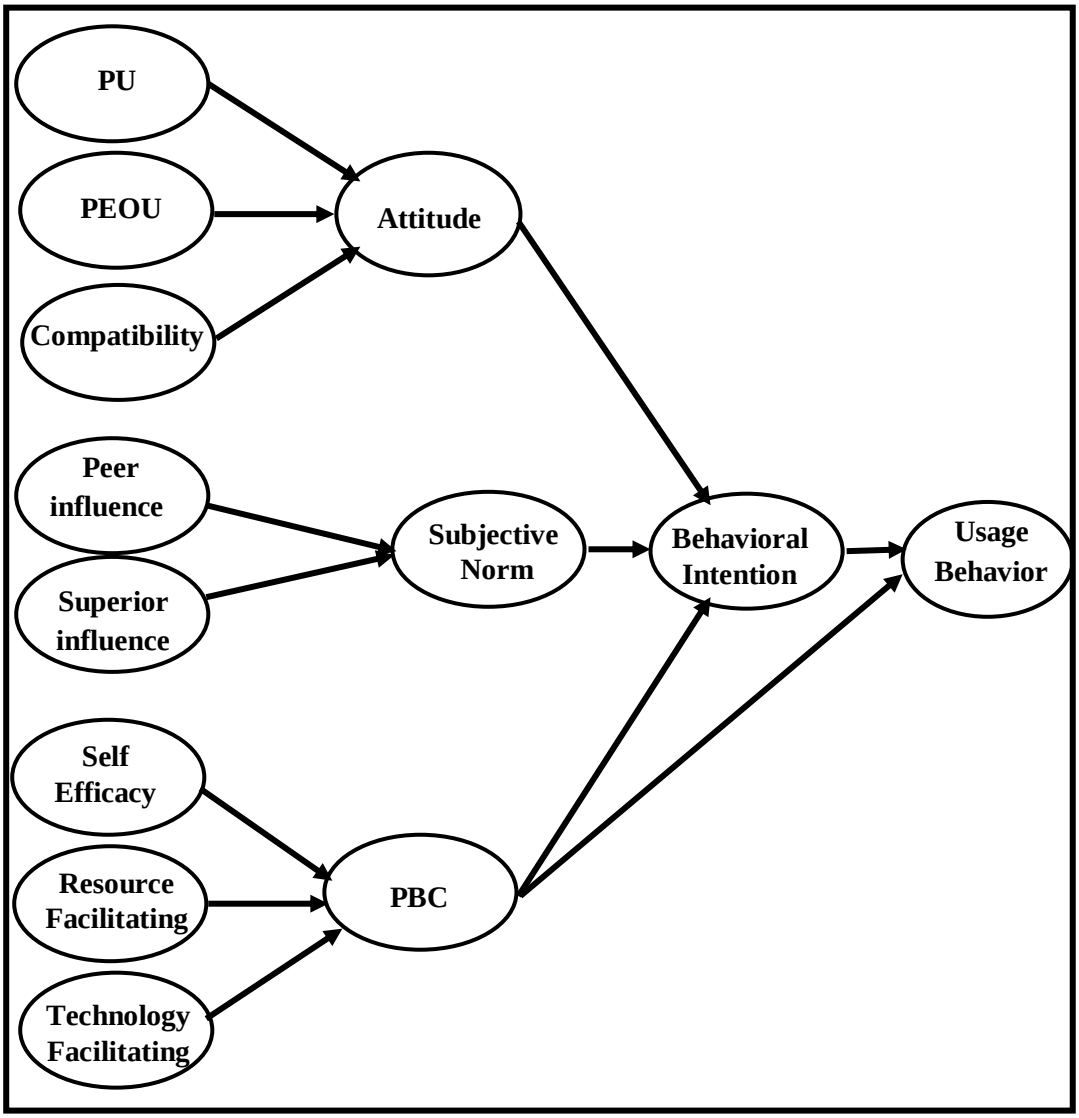

Figure 2.5
DTPB Model
Source: Taylor & Todd (1995**)**

2.2.5.2 DTPB in IBSA

Shih and Fang (2004), conducted their study in Taiwan with the purpose of investigating how embracing attitude, individual's belief, PBC and subjective can influence behavioral intention to adopt IBS. Through extension of DTPB model this study found that DTPB has greater explanatory power. In addition, the study also found that complexity plays a negative role on attitude but at a less significant level with relative advantage and attitude. Although efficacy is a significant determinant of the PBC, facility is not. Subjective norm is not significantly related to behavioral intention, whereas the attitude and PBC are significantly related to behavioral intention, like the pure TPB and pure TRA models; whereas subjective norm is not significantly related to behavioral intention. Behavioral intention has a significant influence on actual use. Finally, this study found that DTPB model has better explanatory power for behavioral intention, attitude and subjective norm than the TRA and pure TPB models.

Further, Nor and Pearson (2008) derived their model based DTPB in order to identify those factors that can encourage customers to accept IBS in Malaysia. The outcomes of their study reveal that it is only trusting beliefs (perceived competency and benevolence) that do not support behavioral intention to adopt IBS. Besides, the study also reveals that the DTPB is a model that provides a comprehensive understanding of those factors that influence the intention to use IBS. Approximately 37% of the total variance on the behavioral intention was explained.

However, Nor and Pearson (2008) assert that DTPB model has some weaknesses as they argue that individual factors such as technology literacy, technology resistance,

technology phobia and awareness are not taken into consideration in the model.

2.2.5.3 Advantages of DTPB

DTPB has been argued to have many advantages since it is preferable to other forms of pure models. As argued by Taylor and Todd (1995) DTPB has several advantages and better ability to explain and predict adoption than pure TRA and TPB models. Firstly, through decomposition of beliefs, it is asserted that the relationship would be more understood and become clearer. In addition, DTPB can also provide set of beliefs that are stable and which can be used in different type of settings. Thirdly, when focus is on different beliefs, the relevance of the model to the practical implication towards factors that can influence usage and adoption becomes apparent. Fourth, the DTPB also gives a comprehensive understanding of the relationship between intention and behavior by introducing a large number of factors that can influence usage, and because of this, the decomposed TPB should provide a more complete understanding of its usage. This model is also found to have better predictive power compared to the traditional TBP, TRA, and TAM. Moreover, the DTPB provides fuller understanding and useful guidance to researchers and IT managers who may be interested in the study of system implementation (Taylor, 1995).

In addition to the above, Shih and Fang (2004), maintained that the DTPB model has better explanatory power for attitude, subjective norm and behavioral intention than the pure TPB models and TRA. Jaruwachirathanakul & Fink, (2005) in a related study revealed that by adding relative advantage and compatibility along subjective norms and PBC, DTPB has become potent than traditional TPB. Basically, the tenet

of DTPB is based on the assumption human beings are rational thinkers and that they make use of information available to them systematically. It is therefore essential to identify and measure those factors that can determine the behavior of an individual towards predicting and understanding of such behavior. Tan and Teo (2000) in their study also maintained that DTPB uses innovation literature by exploring relative advantage, compatibility, subjective norms and PBC in holistic manner by decomposing them in such a way that it will be understood to predict adoption comprehensively.Besides, Nor and Pearson (2008) asserted that the DTPB introduces the researchers a more complete set of variables that could better explain the behavior intention toward a specific technology (IBS), thus enhancing the practical contributions of this study.

2.2.6 UTAUT (Unified Theory of Acceptance and Use of Technology Model)

Venkatesh et al (2003) compared the similarities and differences between past models and theories of user acceptance and formulated UTAUT. The authors asserted that IT information system researchers are exposed to various models and have opportunities to choose some variables of their favored models, therefore ignoring the contribution of other models. In order to overcome the difficulties being faced by information technology researchers, UTAUT was developed.

In this view, Venkatesh *et al.* (2003) carried out a review and comparison of different eight main models that have been developed by the extant authors to explain the acceptance of information technology. In doing this, the researchers discovered that many of these models have several limitations in general. Some of the limitations include:

- Many of the studied models were individual-oriented and simple when compared to complicated and complex organizational technology.
- The participants in the studies were mostly students.
- Time of measurement was general and in most studies well after acceptance or rejection of the adoption decisions; so individuals' reactions were retrospective.
- Most of the studies measurements were cross-sectional.
- The contexts where the studies were conducted were very general thereby making it difficult to generalize the result in compulsory settings.

Having discovered these limitations, the researchers thereby carried out an empirical study of different eight models through longitudinal design in four different organizations among employees in the place of work. The research was carried out after training, a month after the implementation and three months after implementation; while actual usage behavior was tested over the six-month post training period. Among other variables of the study are moderating constructs which other studies have reported to have influence on usage decision. These were experience, voluntariness, age, and gender.

2.2.6.1 UTAUT Constructs

Basically, the constructs of UTAUT are four and these include (i) Performance Expectancy (PE); (ii) effort expectancy; (iii) social influence; and (iv) facilitating conditions (Payne & Curtis, 2008; Grant & Danziger, 2005; Venkatesh *et al*., 2003). Additionally, the relationship and behavioral intention and users behavior was moderated by gender, age, experience and voluntariness (Venkatesh *et al*., 2003).

Figure 2.6 shows the constructs of UTAUT.

1.In view of the above, PE is defined as "the degree to which an individual believes that using the system will help him/her to attain gains in job performance" (Venkatesh et al, 2003, p. 447). In other models such as TAM and DOI, Perceived usefulness and relevant advantage are similar to performance expectancy. This construct, within every individual model, was the strongest predictor of behavioral intention and remained significant at all points of measurement in both voluntary and compulsory settings. Findings from studies have however shown that PE has positive influence on behavioral intention as moderated by age, gender especially with stronger effect for men.

2. Effort Expectancy (EE) is regarded as the extent of ease that is associated with system usage (Venkatesh, 2003,). In other models, PEOU and Complexity of TAM and DOI respectfully are similar to EE. In each individual model, the construct was significant in both compulsory and individual settings, and as this was significant only through the post training measurement. The influence of EE on behavioral intentions has been hypothesized to be moderated by age and gender by previous studies.

3. Social Influence (SI) is defined as "the degree to which an individual perceives that important others believe he/she should use the new system" (Venkatesh, 2003). The construct of SI is similar to subjective norms as proposed in other models such as TAM2, TRA, combined TAM-TPB and TPB/DTPB. Having compared the models, facts have emerged that these concepts have similar behavior and were significant in compulsory settings and insignificant in voluntary contexts. The findings of previous studies have however shown that in compulsory contexts, the influence can be traced to the fulfillment and becomes significant only during earlier

period when the individual has acquired certain experience on the job and when rewards/punishment were appropriate. In voluntary contexts however, SI contrarily operates through its influence on perception about the technology (which is known as internalization and identification). Past studies have also found that gender, age experience and voluntariness have moderating influence on SI and behavioral intentions as hypothesized.

4. Facilitating Conditions (FC) is defined as "the degree to which a person believes that an organizational and technical infrastructure exists to support use of the system" (Venkatesh, 2003). From this definition, facilitating condition has similarity with PBC and compatibility in TPB/DTPB and combined TAM-TPB. Having compared the models in question it can be inferred that the link between behavioral intention and this variable in each model was similar in both compulsory and voluntary during the first training period but subsequently, the influence begins to decline or wane in the second period (after one month from implementation).

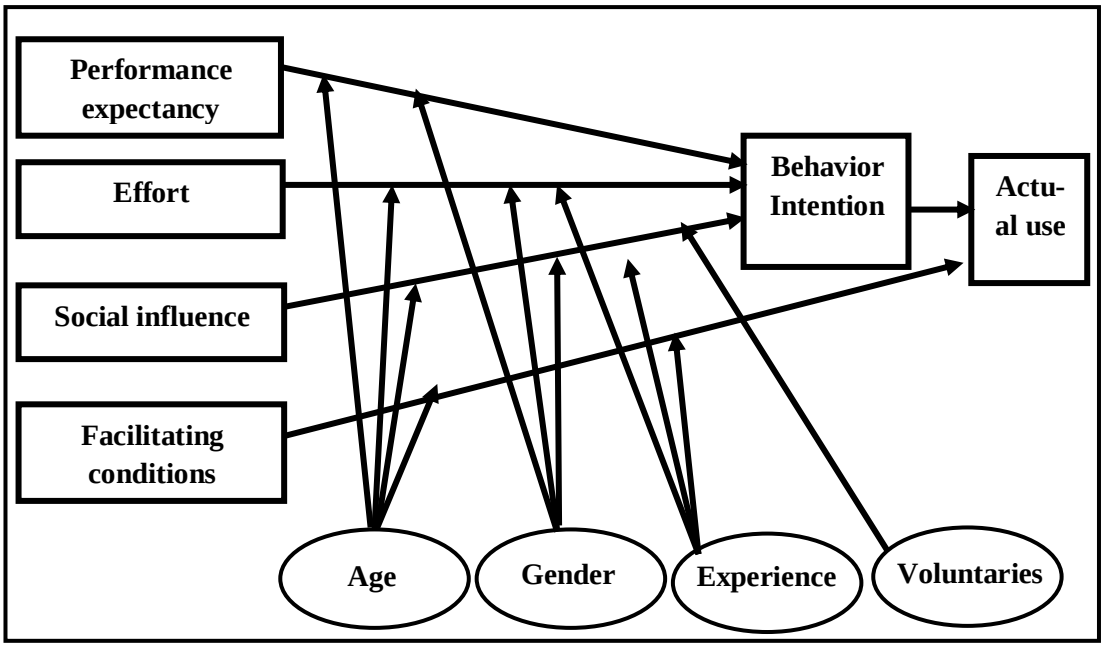

Figure 2.6
UTAUT Model
Source: Venkatesh *et al*. (2003)

However, arguments from previous studies revealed seem to reveal that when EE and PE, FC may not be necessary or significant and constant with TPB/DTPB. The expectation is that the influence will rise as users accumulate experience since users may found out more avenues to seek help and support. Thus, the influence of FC on usage is hypothesized to be moderated by age and experience.

2.2.6.2 UTAUT in IBSA

Abushanab *et al*. (2010) came up with their model based on UTAUT for the purpose of ascertaining those factors that determine the adoption of IBS in Jordan. The outcome of this study reveals that UTAUT is a reference model for IBS future researcher. In addition it was also found that EE, PE and SI (main predictors) significantly influence behavioral intention as well as explain a significant amount of the variance in predicting a customer's intention to adopt IBS in Jordan. Importantly, the study also found that gender moderately influences the relationship between three independent variables and behavioral intention (dependent) of the study. Advantage of using UTAUT as explained by the author is its ability to integrate major and other models by laying emphasis on the strength of certain constructs compared to others. In addition, the study of Abushanab et al was the first to adopt UTAUT in studying the technology acceptance domain (IBS). The study also indicates that the closet variable that can be used as a replacement for IBSA is behavioral intention that the behavioral intention. Using behavioral intention is affluent, but does not return exploring actual usage (behavior) of a system. Despite the strength of UTAUT, it has some limitations. One of the weaknesses of UTAUT is that it uses survey to collect its data. Another major drawback becomes apparent in the course of replication of this study as the study may have overlooked those variables that provide clarity and

about significant part of the variance that may be associated with predicting the intention to utilize IBS. Finally, the results of this study cannot be generalized to bank customers in Jordan (Aboushanab et al., 2010).

2.3 INTERNET BANKING SERVICE ADOPTION (IBSA)

The Actual Behavior defined by Ajzen and Fishbein (1980, p.82) as: "The individual's observable response in a given situation with respect to a given target behavior is a function of compatible intentions". In addition, IBSA is defined by Kim and Prabhakar (2012, P. 538) as: "The client's usage of multiple services represented in carrying out banking transactions over the Internet, including balance inquiry, account transfer, and many other services that are basically carried out online".

Internet technology penetrated into banking system in 1995 when the Security First Network Bank in the USA established full-fledged IBS (Gandy, 1995). IBS is regarded as a new type of information technology which employs innovative resources that internet provides and permits consumers to utilize financial activities through online environment and spaces.

IBS is extremely beneficial to customers: customers can execute their bank transactions or contact their banks faster, at anytime and from anywhere, 24 hours a day. It does not require the physical interaction with the bank, and customers can avoid long queues and restrictive business hours, lower transaction costs, quick responses to complaints, more service variety and improved services quality (Mansumitrchai & Chiu, 2012; Alnsour & Al-Hyari, 2011;Nasri, 2011; Al-Somali *et al*., 2009; Shi *et al*., 2008; Mattsson & Helmersson, 2005;Pikkarainen *et al*. 2004).

Customers also do not have to be put on hold for telephone banking services; all these benefits make for easier banking (Karjaluoto, Mattila & Pento, 2002).

According to Flags (2000), there are three types of IBS:

Information: This type of IBS allows the banks to upload uploads all promotional bank information and services on the website. Here, the bank provides IBS in the form of protected information where the service provider is still vulnerable to any attack. With this type of IBS, the associated risk is perceived to be low since customers cannot connect directly with the banking institutions' internal information database of the bank.

Communications: This is a type of IBS which permits the customers and the banks to interact and execute some activities. Though the activities may be limited, it covers account inquiry, correspondence, getting loan applications and modifications of data. The processes involved are highly risky, and thereby requires high level of protection and risk. In this view, the process must protected, monitored and management must put in place alert system that will always inform the management of any attempt to access the bank's internal networks and computer systems. In addition, there must be mechanisms for virus controls.

Transactions: This type of IBS allows customers to execute their activities since the bank basically connected to the service provider. The risks that are involved in this are very high and require high level of protection.

IBS has several disadvantages just like any other technology. Many people are not using because they lack trust in the internet. In this view, Kannan et al (2004) that people tend to human beings than machine especially when it comes to issue of money. Aside, cases and news of online banking fraud is also deterring the customers

from accepting internet banking. Such cases of frauds and hacking have made people to lose huge amount of money (Kephart& Das, 2007). In addition, Sathye (1999) asserts that time it requires to sign up for internet banking may be one those factors that is preventing people from using it especially with the heavy paper work that may be involved.

Additionally, lack of awareness of internet banking benefits and previous knowledge about the way it works is a major factor preventing some customers not to accept internet banking. Nasri (2011) in this view asserts that previous knowledge of internet technology is a strong factor that influences actual behavior towards IBSA.

2.4 ANTECEDENTS OF INTERNET BANKING SERVICES ADOPTION

As initially stated, DTPB (Taylor & Todd, 1995) is the underpinning theory that the researcher will use in this study. Review of past literatures have revealed inconsistent results about the antecedents of IBSA and which has therefore brought about conflicting results with respect to the relative importance of the antecedents that explain IBSA. Arguably, past studies may not have identified all these essential issues with respect to IBS usage due to the fragmentations and different models being used by IBS scholars (Hoehle, *et al*. 2012). In the next section, the researcher explains this problem, through discussion of past studies.

In figure 2.7 IBSA has eight constructs of subjective norm, attitude, PBC, and individual factors of technology (IFT) and which consists of resistance to technology, internet technology literacy, perceived risk of technology, anxiety about technology, and information on technology). The next section discusses these

antecedents besides those antecedents that have been suggested in the original DTPB model (Taylor & Todd, 1995).

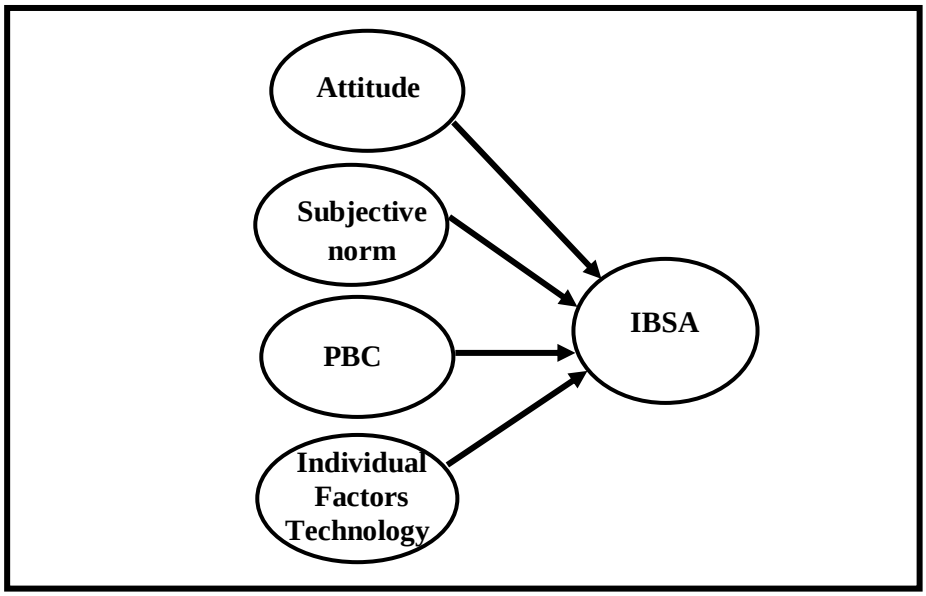

Figure 2.7
Antecedents of IBSA

2.4.1 The Relationship between Attitude and Actual Bhavior

Fishbein and Ajzen (1975) revealed that attitude has major influence on behavior through behavioral intention for TRA. Many studies have specified that attitude can influence behavior directly, and has precise predictive ability of behavior than behavioral intention (Manstead, Proffitt & Smart, 1983). Contrarily, some past studies suggest that attitude does not have a direct significant effect on behavior (Shimp& Kavas, 1984). In addition, many past studies on IBSA also revealed that of the common or popular antecedents of IBS is attitude as some of these studies reveal that attitude is linked to IBSA in varied and different models (Al-majali & Mat 2010b; Shi *et al*., 2008; Martinez, Ortega & Roman, 2007; Ndubisi & Sinti, 2006;

Chau & Lai, 2003; Karjaluoto *et al*., 2002). These findings indicate that attitude significantly and positively influences IBSA.

Karjaluoto *et al*. (2002) in Finland conducted a study to investigate those factors that impact attitude of customers towards IBSA. The result of this study reveals that attitude is a major and positive factor that determines adoption of IBS among 11,167 customers of the bank. Other study equally validates the influence of attitude on intention in the Internet banking platform, as well as among Malaysian bank customers (Ndubisi, & Sinti, 2006). The results of this study suggest that the attitude of customers' with respect to system features is related to IBSA and equally plays an important role in IBSA. Further, Shi et al., (2008) conducted a study among 124 respondents and discovered that a positive and significant relationship exists between customers' attitude and IBSA.

In addition, Al-majali & Mat (2010b) explored factors that can influence attitude of customers toward IBSA in Jordan. The respondents in this study were 512 Jordan public university employees who have experienced IBS usage. This study discovered that attitude is significant and positive in determining IBSA. In USA, an investigation was conducted with the purpose of investigating those factors that influence students to adopt e-purchase services. The result of the study conducted by George (2004) revealed that the students' attitudes significantly and positively influence their usage of such services. Alternatively, a study was conducted in Taiwan by Wang (2011) to comprehend behavioral intentions of customers. In this study, 206 respondents with online shopping experience participated while the study discovered that attitude is a significant factor that influences actual behavior. Table

2.2 summarizes these previous studies which examined the relationship between attitude and actual behavior.

Table 2.2
Summary of previous studies on relationship between attitude and actual behavior

Author	Area	Country	Respondent	D.V	Result
Karjaluoto, et al (2002)	Internet banking	Finland	Bank customers	IBSA	Significant(positive)
Ndubisi & Sinti (2006)	Internet banking	Malaysia	Bank customers	IBSA	Significant(positive)
Shi*et al*. (2008)	Internet banking	USA	Bank customers	IBSA	Significant(positive)
Martinez Guerrero *et al*. (2007)	Internet banking	European Union	IBS users	IBSA	Significant(positive)
AL-Majali & Mat(2010b)	Internet banking	Jordan	Public university employees	IBSA	Significant(positive)
George (2004)	Internet purchasing	USA	Undergraduate students	Internet purchasing	Significant(positive)
Wang (2011)	Online shopping	Taiwan	Experienced customers	Online shopping adoption	Insignificant (positive)

Consequently therefore, review of literature until date has shown that attitude has been widely investigated in different platforms. Also, the outcome of the relationship between behavior and attitude has however been inconsistent. Even though findings of previous studies have shown that attitude significantly influences behavior (Al-majali & Mat, 2010b; Shi et al., 2008; Martinez et al., 2007; Bantler & Speckart, 1979; Albrecht & Carpenter, 1976), there are several cases where attitude is not significant (Wang, 2011; Shimp & Kavas, 1984; Fredricks & Dossett, 1983). Besides, there were very little empirical researches to investigate this path in IBSA.

2.4.2 The Relationship between Subjective Norm andActual Bhavior

Subjective norm is the perception of an individual with regards to the social pressure to carry out certain behavior. Even though TRA, TPB and DTPB models have discussed subjective norm as one of the precursors of behavior intention (Taylor & Todd, 1995; Ajzen, 1991; Ajzen & Fishben, 1975) very limited studies used the single models of subjective norm in their studies (AL-majali & Mat, 2010b; Shi *et al.*, 2008; Duda *et al*., 2007; Hernandez & Mazoon, 2007). For instance Shi et al, (2008) revealed that subjective norm is a significant variable that has influence on IBSA and help bankers to help drive more customers through influence of friends, colleagues and family members to embrace IBSA. Additionally, the study of Hernandez (2007) reveals that IBSA is significantly influenced by subjective norm. Also, in a study conducted by Rouibah's (2008) in Kuwait with respect to adoption of instant messages service online among working adult of organizations, it was discovered that subjective norm positively affect the behaviors of workers in this area. The findings of Al-Majali & Mat (2010b) also align with others when the study found that subjective norm significant and positive influence toward IBSA using TPB.

However, the study of AL-Qeisi (2009) found an insignificant relationship between IBSA and subjective norm. In other words, this study proves that subjective norm does not influence customers' decision to adopt IBSA in the context of Jordan. Similar study that was conducted among Singaporeans and Malaysians in respective countries revealed subjective norm is not significant in the adoption of IBS among individual customers (Duda *et al*. 2007). In a related study conducted among students in USA on the adoption of e-purchase services, it was discovered that subjective is

not significant in this study (George, 2004).Table 2.3 shows that past studies investigate the relationship between subjective norm and actual behavior.

Table 2.3

Summary of Previous Studies on Relationship between Subjective Norm and Actual Behavior

Author	Area	Country	Respondent	D.V	Result
Shi et al. (2008)	Internet banking	USA	Bank customers	IBSA	Significant(positive)
Hernandez & Mazoon (2007)	Internet banking	Brazil	IBSA users	IBSA	Significant(positive)
Rouibah (2008)	Instant messaging	Kuwait	Adult organizations' workers	Adoption Instant messaging	Significant(positive)
Al-majali & Mat(2010b)	Internet banking	Jordan	public university employees	IBSA	Significant(positive)
George(2004)	Internet purchasing	USA	Undergraduate students	Internet purchasing	Insignificant(positive)
Duda *et al*. (2007)	Internet banking	Malaysia	Banking customers	IBSA	Insignificant(positive)
AL-Qeisi, (2009)	Internet banking	Jordan	Bank customers	IBSA	Insignificant(positive)

2.4.3 The Relationship BetweenPBC andIBSA

The tenet of TPB is that user's behavioral intention is influenced by his/her PBC (Ajzen, 1991). This is premised on the fact that an individual is likely to engage in a certain behavior when he/she believes that the required resources to perform the behavior are available. In this view, the empirical study of Al-majali and Mat (2010b) found that PBC significantly and positively influences IBSA among Jordanians towards IBSA.

Several studies in different contexts that are different from IBS setting have investigated direct effect of PBC on actual behavior (Gopi & Ramayah, 2007;

Fusilier & Durlabhji, 2005; Pedersen & Nysveen, 2004; George, 2004). This therefore shows that the influence of PBC on IBSA has not been sufficiently investigated (Shih & Fang, 2004; Tan & Teo, 2000). In addition, studies that investigated the relationship between PBC and actual behavior are sparse in different IT fields. For instance, the study of Gopi and Ramayah (2007) revealed that PBC does affect significantly actual behavior many stock market customers in Malaysia while using online stock trading services. The study of George (2004) conducted in USA among number of college students confirms that the relationship between PBC and actual usage in online usage is positive and significant. In contrary however the study of Pedersen and Nysveen (2004) found an insignificant relationship between actual usage and PBC of senior students while using online message services. It is clear from the discussion of previous studies that the relationship between PBC and actual behavior has shown inconsistent resultsas shown in Table 2.4.

Table 2.4
Summary of previous Studies on Relationship between Perceived Behavior Control and Actual Behavior

Author	Area	Country	Respondent	D.V	Result
Al-majali & Mat(2010)	Internet banking	Jordan	Public university employees	IBSA	Significant(positive)
Gopi & Ramayah (2007)	Internet stock trading	Malaysia	Investors College	Using internet stock trading	Significant(positive)
Fusilier &Durlabhji (2005)	Using the Internet	India	Student	Using the internet	Significant(positive)
George(2004)	Internet purchase	USA	Undergraduate students	Internet purchasing	Significant(positive)
Pedersen &Nysveen (2004)	Using text messaging	USA	Upper secondary schools	Using text message	Insignificant(positive)

A review of past literature with respect to attitude, subjective norm, and PBC has been investigated in different ways. In addition, the results of such studies are inconsistent. The results of these studies with respect to their antecedents are equally mixed and thereby make it difficult to articulate those factors that can be used to predict adoption of IBSA. This therefore implies that research on IBS is still inconclusive, (Hoehle *et al*., 2012; Al-majali & Mat, 2010b). Moreover, previous studies have discussed the relationships between subjective norm, attitude, PBC and IBSA in different countries with very of them in the Middle East countries generally, and in Iraq, specifically.

2.4.4 The Relationship between Individual Factors of Technology and Actual Behavior

The importance of individual characteristics in influencing actual behavior and intentions, and the effects of individual differences or personality traits are explored and tested in the literature through the work of many researchers in the technology acceptance domain (Agarwal & Prasad, 1998; Agarwal, Prasad & Zanino, 1996; Zmud, 1979; Venkatesh *et al*., 2003; Dadayan & Ferro, 2005). Zmud (1979) reviewed the literature related to individual differences and summarized it based on its effect on more than one construct in the management information system (MIS) area, MIS usage, MIS success, and decision performance. As shown in Table 2.5, Zmud classified the individual differences construct into three dimensions: cognitive styles, personality and demographics. Harrison and Rainer (1992) also explored the personality construct and classified it into three dimensions: computer attitudes, computer anxiety, and math anxiety. The results indicated that individual differences account for 56% of the variance associated with computer skills. Math anxiety and

computer anxiety were significant in predicting skill, but computer attitude was found to be only partially significant.

According to Zmud (1979, p. 967), the cognitive styles "represent characteristic modes of functioning shown by individuals in their perceptual thinking behavior". Cognitive style is a multidimensional construct that can have the following dimensions:simple/complex, field-dependent/ field-independent, and systematic/heuristic.

Individuality or Personality refers to "the cognitive and affective structures maintained by individuals to facilitate their adjustments to the events, people and situations encountered in life" (Abushanab et al., 2010; Zmud, 1979). Dillon and Watson (1996) explored individual differences with regard to user analysis and human computer interaction and concluded that the research suffers from the following: a) the dimensions identified are superficial and need refining; b) humans can manifest contradicting and various styles depending on situations; and c) styles might be correlated (positively or negatively). Dillon and Watson (1996, p. 627) concluded that further research is needed in this area. It is worth noticing that the authors recognized the "big five" as factors that can be analyzed in the area of individual differences and user's acceptance domain: neuroticism, extroversion, openness to experience, agreeableness, and conscientiousness.

Dadayan and Ferro's (2005) study sample consisted of employees representing two major industries (education and health), where individual factor has a significant influence on the acceptance of information technology. Literature also indicates that

individual characteristics of the users a strongly predictor of actual usage (Venkatash et al., 2003). Figure 2.8 explains user acceptance of information technology based on individual factors (Venkatesh et al., 2003).

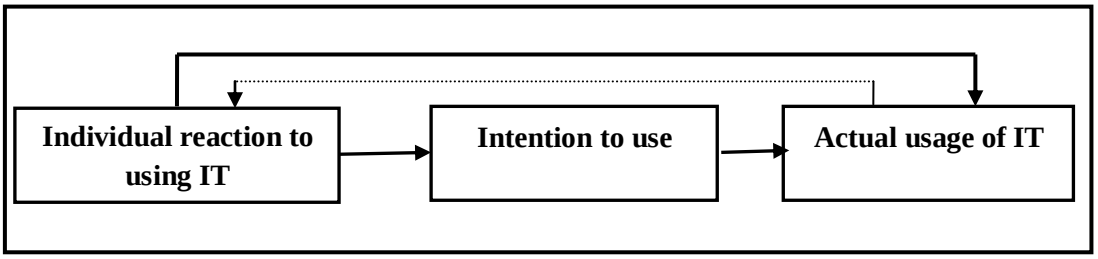

Figure 2.8: *Basic concept underlying user acceptance models*
Source: Venkatesh et al. (2003)

Table 2.5
A summary of Zmud's study

Construct	**Results related to DV - MIS Usage**
Cognitive styles	-Systematic utilizes MIS more, and less than heuristic individuals
Personality	-Subjects with greater risk-taking propensities utilized MIS less.
Demographics	-Higher educated individuals use MIS less -Longer tenured individuals use MIS less -Greater organizational success use MIS less -Higher task knowledge use MIS more -Professional status individuals use MIS more -Results of organizational level are mixed.
Construct	**Results related to DV - Satisfaction**
Cognitive styles	-Systematic are less satisfied than heuristics
Personality	None.
Demographics	-Higher educated individuals are less satisfied -Greater organizational success more satisfied
Construct	**Results related to DV- Decision Performance**
Cognitive styles	-Systematic perform better when using MIS than heuristics -Field-independent perform better when using MIS than field-dependent.
Personality	-Subjects with greater risk-taking propensities perform better. -Need for achievement has a non-linear relation with performance. -Complex association in the case of anxiety, and evaluative defensiveness.
Demographics	-Education and Tenure have mixed results

Thong and Yap (1995) conducted a study in Singapore and the main finding from this study was that if the employees or end users are unaware or do not understand the technologies available, they are unlikely to use them in their work or in their electronic transaction. According to Kaminer (1997), the ability to learn new technology is also related to the creatively that can be used as an indicator of an increased rate of adoption. Furthermore, those who adopted technology tended to have more prior knowledge of any other technology, a greater degree of innovativeness, and more interest in technology adoption (Nickell&Seado, 1986).

In another study, Ramayah *et al*. (2003) was studied TAM in a longitudinal study. They examined the factors that influence individuals' intention to use IBS. The result of this study indicated that prior experience in using Internet technology is important in encouraging the individual to use IBS. In Tunisia, Nasri (2011) investigated factors that influence IBSA, using a sample of 253 respondents. This study revealed that prior internet technology knowledge influenced the relationship between users and IBSA strongly.

There are many parallel aspects between consumer behavior in IBSA and online consumer behavior in general. Li *et al*. (1999) posited that internet knowledge, convenience, experience, perceived accessibility and utility influence online consumer behavior strongly.

The first individual technology factor is internet technology literacy, i.e., the previous technology experience with IBS. In other words, when the technology literacy increases among customers, then the rate of adoption of IBS will also

increase. When consumers become more familiar with technologies, this will facilitate their appreciation of the added value in a technology. Karjaluoto *et al.* (2002) revealed that previous technological experience, i.e., with the internet and attitudes towards computers, influence attitudes towards online banking and actual behavior. They noted that the lack of computer or internet access is one of the possible factors for delayed adoption of IBS.

Avirutha (2012) conducted a study to identify the factors which affect the decision of social media to do purchasing in Thailand. A total of 500 usable questionnaires were obtained and quantitative research methodology was used to identify these factors: technology literacy, level of education, age, user resistance to technology, perceived risk of technology, social pressure, the availability of wireless mobile technology infrastructure, and the availability of business website. The finding of this study revealed that technology literacy, the availability of wireless and mobile technology infrastructure, social pressure, perceived risk, and user resistance to technology significantly affected the adoption of social media; while the availability of business website, age, and level of education were insignificant. Also, according to the result of this study, the chance of technology adoption will be increased if people with higher knowledge in technology are more likely to possess and understand the issues of a new technology, because the ability to understand and apply from simple to complex technical knowledge is needed for adoption.

The second individual technology factor is user resistance to technology; it is the most critical factor that inhibits the adoption of technology. According to Dewan, Lorenzi, and Zheng (2004), user resistance is a factor that prevents technology

adoption. Raymond (1985) explained the initiation, adoption, and implementation of technology are correlated with adopters' perception.

Al-Somali, Gholami and Clegg (2009) conducted a study and used TAM to investigate factors that lead to customers adopting IBS among 400 customers in the Kingdom of Saudi Arabia (KSA). They used in their study resistance to change as a control variables to measure the factors which influence IBSA on behavior. The result indicated customers' resistance to change significantly impacted IBSA.

Customers' resistance to change from traditional ways of banking to IBS has been researched in several studies (Sathye, 1999; Wallis, 1997; Alagheband, 2006; Al-Somali *et al.* 2009). Normally, customers will change the way they do banking when a need is fulfilled. Daniel (1999) found that there is a high level of customers' inertia to change from established banking activities to IBS.

The third individual factor is perceived risk of technology. According to Cheah et al. (2011), perceived risk is the "uncertainty about the outcome of the use of the innovation of technology". Featherman and Pavlou (2003) defined perceived risk as the possible troubles faced when pursuing a desired result. In this regard, consumers tend to perceive higher risks in an online environment compared to a physical store situation (Yang et al., 2012; Chang and Tseng, 2011; Spence *et al*., 1970; Tan, 1999; Forsythe *et al*., 2006).

Previous research indicates that perceived risk influences a consumer's behavioral intention (e.g., Sweeney *et al*., 1999; Grewal *et al*., 1994). Perceived risk is

categorized into two components: uncertainty (the likelihood of unfavorable outcomes); and consequences (the importance of a loss) (Cox & Rich, 1967; Bauer, 1960).

In Taiwan, Chang and Tseng (2011) carried out a formal survey and collected 332 questionnaires for analysis. They found that perceived risk influences a consumer's purchase intention. The online retailer must understand customers' needs and provide them with improved quality and reduced customers' shopping costs/risks, which can motivate them to purchase online. In the same vein, Fitzgerald and Kiel (2001) explored online purchasing and included perceived risk as one of the constructs that influences attitude. The finding of this study revealed that risk was found to be significant for both adopters and users.

About 75% of consumer's in China today worries about the transaction risks of using mobile payment services and a customer's this perception of risk reduces their intention to use mobile payment service. Lu *et al.* (2011) used DIT to conduct this study. Several empirical studies have found that perceived risk is one of the major barriers to adopting finance-related mobile services (Mallat, 2007). Moreover, Pavlou (2003) included perceived risk in a model that predicts intention to transact in an e-commerce environment. Perceived risk was a significant predictor of intention to transact with a negative path coefficient; when the customers have higher perceived risks, they will be less likely to buy the product (Taylor, 1974). A study conducted by Luo *et al.* (2010) found that user's perception of risk is a crucial driver to determine innovative technology acceptance. Based on these and other studies, it is expected that perceived risk will be a significant predictor of IBSA.

The fourth individual factor is perceived anxiety of technology. According to Compeau and Higgins (1995), anxiety refers to "persons' emotional reaction when they use particular technology". The term 'anxiety' is most often used to describe an unpleasant emotional state or condition which is characterized by subjective feelings of tension, apprehension, and worry (Abushanab *et al*., 2010).

Anxiety was explored as part of the SCT and as a predictor of usage or outcome expectation. In the individual differences literature, anxiety was explored as part of personality traits (Agarwal, Sambamurthy & Stair, 2000; Thatcher & Perrewe, 2002; Thong, Hong & Tarn, 2002, Vandenbosch& Higgins, 1995; Harrison & Rainer, 1992).

A study was conducted by Ibrahim (2012) to examine the actual e-filing usage behavior in Malaysia. The results indicated that perceived anxiety is statistically significant as it out performed the other factors in explaining the actual usage behavior of the e-filing system among Malaysian personal taxpayers. Moreover, Abushanab *et al*. (2010) conducted a study to extend UTAUT by adding personality dimensions, toward behavioral intention to adopt IBS in Jordan. One of the factors was anxiety, and the finding of this study failed to explain a significant amount of variation of behavioral intention.

Therefore, our study will include anxiety as a predictor of IBSA, and as part of the composition of individual traits of using technology (IB).

The last individual technology factor and considered most important for consumers before IBSA is the amount of information they have about technology. Guiltinan and Donnelly (1983) posited that "information about the benefits of using a product/service", is as an essential service/product promotion strategy. 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". Howard and Moore (1982) emphasized that "consumers must become aware of the new brand" before they decide to adopt. It is important to create awareness of the product or service among consumers before they can adopt it. “Don't assume good products sell themselves" (Cooper, 1997).

The study that conducted in Australia by Sathye (1999) identified awareness of technology as one of the most important factors that has an impact on adoption. Although IBS is a relatively new experience, lack of awareness of internet banking can cause people not to use IBS. Another empirical study of Australian consumers found that many consumers are unaware about the possibilities, advantages/disadvantages of IBS. Howcroft et al. (2002) also confirmed that lack of awareness of IBS as well as the benefits can influence consumers’ not to use IBS. In addition, in KSA, Al-Somali *et al.* (2009) used TAM to investigate factors that encourage IBSA. The finding revealed that the awareness of IBS and its benefits significantly affected IBSA.

In contrast, in Tunisia, Nasri (2011) conducted a study to determine the factors that influence IBSA, whereby the results revealed that online banking information did not affect customer adoption.

Finally, the personality dimensions influences behavior usage and is related to one's personality, meaning that the cognitive and affective structures of individuals can facilitate their adjusting to events, people and situations. Based on literature, these dimensions are believed to be significant in influencing customers toward IBSA. Figure 2.9 explains the individual factors of technology. A summary of the literature citing the influence of individual differences is shown in Table 2.6.

Table 2.6
Summary of previous studies shows Individual differences

Author	Constructs	Area	Result
Zmud (1979)	A comprehensive review of the literature in the area of individual differences	MIS Usage, Satisfaction, and Decision Performance	Refer to table 3.4 for more details.
Harrison & Rainer (1992)	Gender, age, education level, experience, fear, anticipation, pessimism, optimism, intimidation, anxiety, originality, and skill	computer skill	All predicting skill. All were significant except: education and optimism.
Sathey (1999)	Awareness of services and its benefits, ease of use, no resistant to change, reasonable price, no security concern, availability of infrastructure	Internet banking	This study identified awareness of technology and resistance to change as major factors impacting the adoption; also it reveals that lack of awareness about Internet banking and its benefits is major obstacles for IBSA in Australia.
Warkentin *et al.* (2002)	Trust and Risk	e-government information	Conceptual review with proposition that relates trust and risk to intention

Pavlou, 2003	Trust and perceived risk (PR).	Electronic commerce	Trust was significant in predicting PU, PEOU, intention and PR. PR was significant in predicting intention to transact.
Al-Gahtani (2004)	Age, gender, education, anxiety, org. level, sector, and nationality.	Computer acceptance	Usage was predicted by education, gender, nationality, org. level, and sector.
Thatcher and Perrewe (2002)	Trait anxiety, computer anxiety, personal innovativeness, and CSE.	Computer efficacy	Anxiety and All relationships were supported.
Venkatesh *et al*. (2003)	Facilitating conditions, Self-efficacy, Anxiety	User acceptance of information technology	Facilitating conditions effect stronger while Self-efficacy, anxiety is insignificant.
Mallat(2007)	Relative advantages, Compatibility, Complexity, Network externalities and creation of critical mass, Payment system security and trust in payment systems providers, perceived risk, perceived trust and cost.	mobile services adoption	This study indicates several barriers to the adoption of mobile payments, including premium pricing of the payments, complexity of payment procedures, a lack of perceived risks and widespread merchant acceptance.
Al-Somali, Gholami and Clegg (2009)	Resistance to change, Age, Education, Gender, Income, Trust, Social Influence, Awareness of services, Self Efficacy, Quality of Internet connection.	online banking Adoption	The result reveals that all factors have significant impact
Lu *et al*. (2011)	Perceived Cost, Perceived Risk, Relative Advantage, Compatibility, Image,Initial Mobile Payment Trust and Internet Payment Trust	Intention to use mobile payment services	About 75% of Chinese consumers today worry about transaction risks of using mobile payment services and customers perception of risk reduces their intention to use

Table 2.6*(Continued)*

			mobile payment services.
Nasri (2011)	Prior Internet knowledge , Perceived risk, Information on online banking, convenience, Security perception Demographic Characteristics	Internet banking services adoption	Usage of internet banking in Tunisia is mainly influenced by convenience, risk, security and previous internet knowledge, except for information on online banking. The results also propose that demographic have a significant factors impact on internet banking behavior, mainly, occupation and instruction.
Ibrahim (2012)	Self-ability, anxiety and external influence, perceived usefulness	actual usage behavior of the e-filing system	Self-ability and external influence are insignificant while perceived usefulness and anxiety are significant.
Avirutha (2012)	Internet technology literacy, level of education, age, user resistance to technology, perceived risk of the technology, social pressure, the availability of wireless and mobile technology infrastructure, and the availability of business website	Social media Adoption	The result reveals that technology literacy, the availability of wireless and mobile technology infrastructure, social pressure, perceived risk, and user resistant to technology are significant affected on the adoption of social media. While the availability of business website, age, and level of education are insignificant.

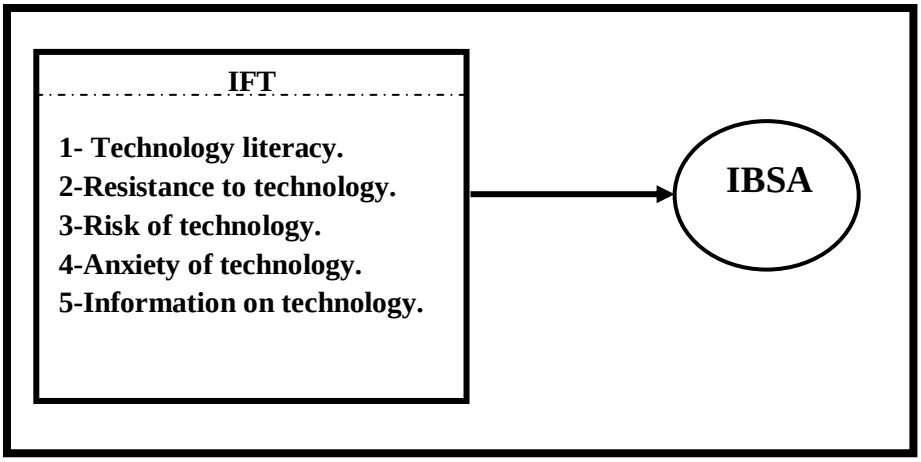

Figure 2.9
Individual Factors Technology (IFT)

2.5 DEFINITION OF ATTITUDE

The antecedent of individual intention to perform behavior was explained by Ajzen and Fishbein (1975) when proposed TRA. Attitude mirrors either negative or positive feeling to certain behavior. Therefore, this variable depends on whether it is negatively or positively estimated (Ajzen, 1980). Ajzen (1991), defined attitude as: The degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. Individual attitude is a product of certain beliefs while these beliefs are immediate antecedents of a person's attitude (Ajzen, 1991). Additionally, attitude toward a behavior is a product of prominent beliefs which represent perceived outcomes of certain behavior and favorable attitude that strengthens his/her desire use the technology (Ajzen, 1991). In addition, obtaining of negative or positive attitudes about a product or service depends on whether the product is associated with negative or positive characteristics (Ajzen & Fishbein, 2000). This may be achieved through direct or indirect observation by sourcing for information through inference process (Doll &Ajzen, 1992). In several instances,

such beliefs may persist while others may be forgotten and new ones formed (Bagozzi & Dabholkar, 2000).

2.6 ANTECEDENT OF ATTITUDE

TRA, and its extension TPB, have been used by several studies for the prediction and explanation of a wide range of behaviors with respect to limited set of constructs (Ajzen, 1991). In those theories, the salient beliefs are given important role. These are set behavioral beliefs that determine attitude toward the behavior (Ajzen, 1991). Therefore, attitude refers to individual's salient belief with respect to whether outcome of his/her behavior will either be positive or negative. Therefore, when the belief of customer about his/her belief is positive, he/she will have positive or negative attitude to perform the behavior (Ajzen & Fishbein, 2000). Additionally, attitude towards innovation is a consequence of an individual's beliefs that adopting the innovation will lead to certain consequences (Ajzen & Fishbein, 1980). It does imply that individual's negative or positive evaluation about performing the behavior has some implications for adoption. Importantly intention of an individual to carry out a behavior will likely occur if the individual evaluation about performance of behavior is positive. In other words, the more favorable the attitude with respect to a certain behavior, the stronger should be an individual's intention to adopt the behavior.

In view of the above, this study adopted DTPB (Taylor & Todd, 1995) to study the relationship between attitudinal belief and innovation by using four attributes of Perceived Usefulness (PU), Perceived ease of use (PEOU), compatibility, and perceived trust of an innovation by reviewing related literature. On the other hand,

the literature shows that variables of complexity and relative advantages of DOI are repetition of usefulness and ease of use (Taylor & Todd, 1995; Moore & Benbasat, 1991). In addition, the research models on attitude antecedents have been diversified and no consensus has been achieved, that explains why several models can be observed in past studies; from simple to complex attitude models (Lee, 2009; ALsajjan& Dennis, 2010; Curran & Meuter, 2005; Suh & Han, 2002).In Figure 2.10, we show the antecedents of the effects of customers' attitude acceptance and IBSA.

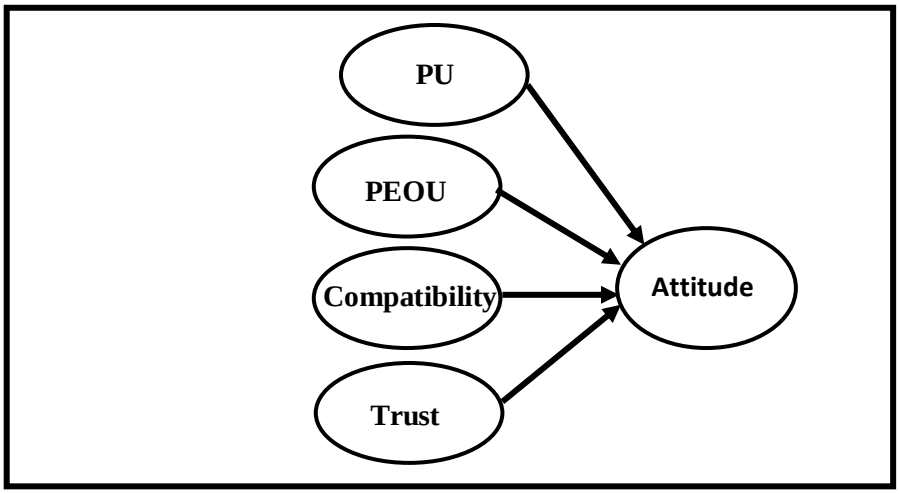

Figure 2.10
Antecedents of Attitude

2.6.1 The Relationship between PUand Attitude

Davis (1989) adapted TRA (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) to formulate TAM. The tenet of TAM is that attitude determines intentions while intention predicts behaviors. According to TAM, individual behavior to adopt is determined by his/her intention to use a particular system and the intention is subsequently determined by the attitude while attitude is subsquently determined by PU and PEOU of the system (Davis, 1989). According to Davis (1989, p. 320) PU refers to extent to which ‘’a person believes that using the system will enhance his /

her job performance''. In other words, PU of the knowledge a person gains depends on how that knowledge can be practiced in an exacting decision-making condition and is dependent upon the perceived meaningfulness of the particular knowledge, the perceived relevance of the goal, the perceived operational validity and the perceived innovativeness (Shrivastava, 1987).

When something is perceived to be useful, it is assumed that thing has the ability to offer a rationale upon which make decisions to utilize a product (Barczak, Ellen & Pilling, 1997). According to Suh and Han (2002), the perceived usefulness of a product depends on whether customers attitude to adopt a product or technology by one factor.

Importantly, several factors have considered the influence of PU on attitude of users towards IBSA. For instance, Suh and Han (2002) conducted a study in order to establish the relationship between PU and attitude of bank customers in Korea. The study found that PU factor positively and significantly influenced the attitude of MIS graduate students. In addition, the study of Jahangir and Begum (2008) conducted in Bangladesh found a positive and significant relationship between PU and the attitudes of the banks' customers. Further, through extension of TAM, ALsajjan and Dennis (2008) found that PU significantly influences the attitude of KSA and UK students towards the adoption of IBS.

Al-Somali et al, (2009) in another study that was conducted in KSA to determine those factors influencing customers' attitude towards adoption of online banking. Having extended TAM by adding additional constructs such as trust, resistance to

change, social influence, awareness of services, quality of internet connections, self-efficacy, education, gender, education and income. The finding of the study reveals that customer's attitude towards the adoption of IBS is significantly influenced by PU. In Malaysia, the study of Nor, Sutanonpaiboon, and Mastor (2010) was conducted with the purpose of establishing the influence of cultural traits of the Chinese and Malays on intention to use internet banking, as well as the impact of PU on consumers' attitude. The study found that attitude of both ethic groups was significantly influenced by PU. Similarly, Rouibah, Ramayah, and May (2011) conducted a study using TAM, TPB and TRA, for the purpose of determining those factors that influence the intention and attitude to use Internet banking. It was found that intention to use IBS was directly and positively influenced by PU and attitude.

In addition to the above, Lee (2009) found that PU is an essential variable that exerts strong influence on customers 'attitude of users of IBSA in Hong Kong. On the contrary, Curran and Meuter (2005) based on TAM, conducted a study in USA by examining those factors that influence bank's users toward IBSA. The result of this study showed that PU had an insignificant influence on customer's attitude toward adoption of this service.Table 2.7 shows that the summary of previous research examining the relationship between PU and individual's attitude.

Table 2.7
Summary of Previous Research examining on Relationship between Perceived Usefulness and Individual's Attitude related to IBS

Author	Area	Country	Respondent	D.V	Result
Suh & Han (2002)	Internet banking	Korea	Banks' customers	Attitude	Significant(positive)

Table 2.6*(Continued)*

Jahangir &Begum (2008)	Internet banking	Banglades h	Customers of private banks	Attitude	Significant(positive)
Curran	Internet	USA	Banks	Attitude	Insignificant(positive)

andMeuter (2005)	banking		‘customers		
ALsajjan &Deniis (2008)	Internet banking	SaudiArabia	University students	Attitude	Significant(positive)
Lee (2009)	Internet banking	Taiwan	Internet banking	Attitude	Significant(positive)
Al-Somali *etal*.(2009)	Internet banking	Saudi Arabia	Banks' customers	Attitude	Significant(positive)
Nor, Sutanonpaiboon, and Mastor (2010)	Internet banking	Malaysia	MBA students in four public universities in Malaysia 54% are Malay and 46% is Chinese.	Attitude	Significant(positive)
Rouibah, Ramayah, and May (2011)	Internet banking	Malaysia	Individual bank customers	Attitude	Significant(positive)

Davis (1989) adapted TRA (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) to formulate TAM. The tenet of TAM is that attitude determines intentions while intention predicts behaviors. According to TAM, individual behavior to adopt is determined by his/her intention to use a particular system and the intention is subsequently determined by the attitude while attitude is subsquently determined by PU and PEOU of the system (Davis, 1989). According to Davis (1989, p. 320) PU refers to extent to which ‘’a person believes that using the system will enhance his / her job performance’’. In other words, PU of the knowledge a person gains depends on how that knowledge can be practiced in an exacting decision-making condition and is dependent upon the perceived meaningfulness of the particular knowledge, the perceived relevance of the goal, the perceived operational validity and the perceived innovativeness (Shrivastava, 1987).

When something is perceived to be useful, it is assumed that thing has the ability to offer a rationale upon which make decisions to utilize a product (Barczak, Ellen & Pilling, 1997). According to Suh and Han (2002), the perceived usefulness of a product depends on whether customers attitude to adopt a product or technology by one factor.

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Al-Somali *et al*, (2009) in another study that was conducted in KSA to determine those factors influencing customers' attitude towards adoption of online banking. Having extended TAM by adding additional constructs such as trust, resistance to change, social influence, awareness of services, quality of internet connections, self-efficacy, education, gender, education and income. The finding of the study reveals that customer's attitude towards the adoption of IBS is significantly influenced by PU. In Malaysia, the study of Nor, Sutanonpaiboon, and Mastor (2010) was conducted with the purpose of establishing the influence of cultural traits of the Chinese and Malays on intention to use internet banking, as well as the impact of PU

on consumers' attitude. The study found that attitude of both ethic groups was significantly influenced by PU. Similarly, Rouibah, Ramayah, and May (2011) conducted a study using TAM, TPB and TRA, for the purpose of determining those factors that influence the intention and attitude to use Internet banking. It was found that intention to use IBS was directly and positively influenced by PU and attitude.

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In the preceding discussions, the outcomes from various studies revealed that correlation between individual attitude and PU is significant in most of the studies discussed. However, only the study of Curran, (2005) revealed that PU had an insignificant effect.

Apart from IBS settings, several other studies have discussed the relationship between individuals' attitude and PU toward the usage the new technology. Taylor and Todd (1995) for instance used the DTPB model in the field of information technology and found that PU significantly and positively influenced the attitudes of users of computer resources' in Canada.

In addition, Zheng (2012) conducted a study in China to investigate consumers' willingness to accept mobile commerce and what factors influence their acceptance. Based on TAM and TPB, the research result showed that consumers' attitude toward using mobile commerce is significantly influenced by perceived cost, PU, and perceived entertainment.

In addition, Lu et al, (2005) established a significant and positive relationship between attitude and PU in a study conducted among students who used the wireless internet services in the USA. Amoroso and Hunsinger (2008) also conducted a study among graduate students in USA and Australia with respect to their attitude towards online purchase purchases. The outcome of this study indicates a significant and positive relationship between attitude and adoption of online purchases. In addition, Wang (2011) conducted a study in Taiwan with the purpose of understanding customers purchase intentions among 206 customers who had experience with online shopping. The finding of the study reveals that attitude is significantly influenced by PU in online shopping. The study that was conducted by Rouibah *et al.* (2011), in the field of e-shopping revealed that PU significantly and positively influences attitude among 151 students of College of Business Administration in Kuwait University.

Alternatively, Chu and Wu (2004) found conducted a test to ascertain the influence of PU factor on the attitudes of insurance companies' employees. It was discovered that the relationship between PU and intention usage towards e-filing of tax in Taiwan; which affected their actual usage of such services.Table 2.8 shows the summary of previous research to examine the relationship between PU and individual's attitude (IT field).

Table 2.8

Summary of Previous Research on the Relationship between PU and Individual's Attitude (IT field)

Author	Area	Country	Respondent	D.V	Result
Taylor & Todd (1995)	Computer resource center	Canada	Potential users of resource center	Attitude	Significant (positive)
Lu *et al.* (2005)	Internet wireless	USA	Internet users - students	Attitude	Significant (positive)
Chu & Wu (2004)	Tax payer information	Taiwan	Life assurance clerks	Attitude	Insignificant (positive)
Amoroso & Hunsiger (2008)	Internet purchasing	USA, Australia	Undergraduate students	Attitude	Significant (positive)
Rouibah *et al.* (2011)	E-shopping	Kuwait	Students of COB at Kuwait University.	Attitude	Significant (positive)
Wang (2011)	Online shopping	Taiwan	Customers had the experience with online shopping	Attitude	Significant (positive)
Zheng *et al.*(2012)	mobile commerce	China	Chinese consumers with questionnaire	Attitude	Significant (positive)

Past studies on the relationship between attitude and PU towards the adoption of different technology services showed that the correlation between these two factors is inconclusive. For instance, while many of these studies reveal significant relationship between PU and attitude, few other studies indicate non significant relationship. In addition, from the previous discussion, the PU was used in different models such as TAM, TRA and TPB. Moreover, little attention has been to the relationship between PU and intention by researchers with regards to the adoption of IBS in Iraq and Middle East. According to Rouibah, Abbas, and Rouibah (2011), the PU has been playing most important role in determining behavior of users in IT acceptance.

2.6.2 The Relationship between PEOU and Attitude

This construct is central to TAM. Many past studies have proven that this construct determines intention to use different technologies (Legris *et al*., 2003). In the online behavior context, this related to level of ease or complexity with which the Internet technology can be understood by adopters (vanderslice, 20000). Henceforth, the adoption or adoption process of the innovation, as in IBS technology, depends upon the time the adopters take to understand the intricacies of IBS technology mechanism, its application, and advantage and benefits that can be harvested through its proper utilisation in their individual business. Basically, the easier to understand the technology and its application, the faster and more immediately the adoption process and vice versa. PEOU is "the degree to which a person believes that using a particular system would be free of physical and mental effort" (Davis, 1989, p.320). Davis (1989) indicated that customers will be more willing to adopt the new technology, when he or she perceives the ease of its use.

Many of past studies have discussed and investigated the type of this relation in variety technological settings; for example: computer adoption, M-commerce, online purchase services and other new technology services. In the paragraphs below, we review previous literature that discussed and investigated the relationship between PEOU and the individuals' attitude towards acceptance of IBS. For example, a study was conducted in Taiwan by Yu and Lo (2007) using the employees of insurance companies as sample, to evaluate the rate of influence PEOU on the employees' attitudes toward acceptance of IBS. The result of this study suggested that PEOU construct is highly significant and has a positive influence on those employees' attitudes.

Furthermore, in KSA, and based on TAM, Al-Somali *et al.* (2009) conducted a study to examine the factors which affect customers' attitude to accept IBS. The findings revealed that PEOU is an important factor and significantly and positively impacted on customers' attitude. Also, based on TAM, there was study conducted by Lee (2009) to investigate the factors that influence customers' attitude toward IBS. The finding of this study showed that PEOU has a significant influence on customer's attitude to accept such services. Also, PEOU has been found to be an important construct that influences bank clients' attitude toward IBSA in Hong Kong (Lai and Li, 2005). The study showed that PEOU has more effect than other constructs like PU. Moreover, Rouibah, Ramayah, and May (2011) conducted a study on intention to adopt IBS. Their respondents' were 239 individual bank customers in Malaysia. They examined the dominantfactor(s) which influenced the user toward IBSA, by using TAM, TPB and TRA. The results found TAM model has the best explanatory power, and then the TPB and TRA models. The finding of this study showed that the relation between PEOU and individual attitudes has a direct positive effect on behavioral intention to use Internet banking. Al-majali and Mat (2010a) conducted a study in Jordan to investigate the factors that influence IBSA, and found that PEOU has a significant effect on and positive relationship with customer's attitude.

By contrast, there are some studies indicating that the relationship between the PEOU and individual attitudes of customers is insignificant. The first study was conducted in USA by Curran and Meuter (2005), and second study was conducted in Estonia by Eriksson *et al.* (2005).

Additionally, Cheng *et al.* (2006) developed a theoretical model based on TAM with new additional factors to determine how the customers adopt IBS and which factors

play the most important role. The findings indicated that the relationship between the PEOU and users' attitude toward IBSA is insignificant in Hong Kong. Further, Nor and Pearson (2007) used DOI to conduct a study on the university students in Malaysia, to investigate the factors that effect on customers' attitude to accept or adopt IBS. This study indicated that PEOU has an insignificant effect on the students' attitude toward adoption of similar services. Table 2.9 summarizes the previous research which examined the relationship between the PEOU and individual's attitude toward IBSA.

Table 2.9

Summary of Previous Research on the Relationship between PEOU and Individual's Attitude related to IBS

Author	Area	Country	Respondent	D.V	Result
Curran and Meuter (2005)	Internet banking	USA	Banks' customers	Attitude	Insignificant (positive)
Eriksson *et al.* (2005)	Internet banking	Estonia	Banks' customers	Attitude	Insignificant (positive)
Yu & Lo (2007)	Internet banking	Taiwan	Life insurance clerks	Attitude	Significant (positive)
Cheng *et al.* (2006)	Internet banking	Hong Kong	Internet banking users	Attitude	Insignificant (positive)
Nor & pearson (2007)	Internet banking	Malaysia	University students	Attitude	Insignificant (positive)
Al-Somali *et al.*(2009)	Internet banking	Saudi Arabia	Banks' customers	Attitude	Significant (positive)
Lee(2009)	Internet banking	Taiwan	Internet banking users	Attitude	Significant (positive)
Rouibah, Ramayah, and May (2011)	E - banking	Malaysia	individual bank customers	Attitude	Significant (positive)
Al-Majali and Mat (2010)	Internet banking	Jordan	University employee	Attitude	Significant (positive)

In other hand, there are many past studies which examine this relationship toward acceptance/using/adoption of new innovation by employment of different models out of IBS. For example, Fogelgren-Pedersen (2003) conducts a study to tackle the issue of mobile online services adoption. The results show that the ease of use factor significantly and positively affects the users of these services. Also, in the field of

education online services usage or adoption in Malaysia, (Nudbisi, 2006) which was conducted on a number of students at the government universities in Malaysia, results revealed that the relationship between the ease of use factor and the attitude towards adopting such kind of services is significant and positive. Moreover, in turkey there was study conducted by Ozkanand Kanat (2011) to investigate the factors that may affect users toward adoption of G2C e-Government services. The results indicate that constructs ease of use plays an important role in determining citizens' perceived and positive effect on the attitude toward the use of e-Government service.

By contrast, Cho & Cheung (2003) which was conducted in Hong Kong upon several internet users and those who are interested in the legal services pointed out that the ease of use factor has no influence (insignificant) upon the attitudes of the electronic means users towards using these services. Moreover, Taylor and Todd (1995) note that the relationship between the ease of use factor and the attitudes of the computer resources' potential users in Canada is insignificant. Moreover, the study conducting in Taiwan by Wang (2011) to understand better the customers' purchase intentions. The number of surveys completed was 206 and, all customers had the experience with online shopping. The finding of this study reveals that PEOU insignificant influences attitude to use online shopping.

All in all, from the literature reviewed so far, it can be seen that the PEOU has been investigated in a diverse way. In addition, the results were indeed inconsistent, many of the past studies indicate that significant relationship between perceived ease of use and attitude, and others have shown insignificant relationship. Moreover perceived

ease of use is receiving little attention from researchers specifically in examining its relationship with the impact on customer's attitude toward adoption of IBS in Iraq. The Table 2.10 shows that the past research examining the relationship between perceived ease of use and individual's attitude (IT field).

Table 2.10

Summary of previous Research on the Relationship between PEOU and Individual's Attitude related to IT

Author	Area	Country	Respondent	D.V	Result
Taylor & Todd (1995)	Computer resources	Canada	Potential users of resources	Attitude	Insignificant (positive)
Fogelgren-Pedersen (2003)	Internet Mobile	Via Internet Web	Internet mobile users	Attitude	Significant (positive)
Cho& Cheung (2003)	Online legal services	Hong Kong	Potential of online -legal	Attitude	Insignificant (positive)
Ndubisi et al (2006)	e-learning	Malaysia	Student of public universities	Attitude	Significant (positive)
Wang (2011)	Online shopping	Taiwan	Customers had the experience with online shopping	Attitude	Insignificant (positive)
Ozkan and Kanat(2011)	G2C e-Government	Turkey	Students online	Attitude	Significant (positive)

2.6.3 The Relationship betweenCompatibility And Attitude

The compatibility is defined by (Rogers, 1983 p.224) as: "The degree to which an innovation is perceived as being consistent with the existing values, needs, and past experiences of potential adopters ". In other words, compatibility is the degree to which an innovation is apparent as being reliable with the existing values, past experiences, and needs of potential adopters. An idea that is mismatched with the values and norms of a social system will not be adopted as quickly as an innovation that is compatible.Another widely investigated aspect of the compatibility of

innovation has been how the new technology will fit in with experiences of the potential adopters and enhance their tasks.

Tornatzkey and Klein (1982) reported that an innovation is more likely to be adopted when it is compatible with the job responsibilities, value system and belief of the individual. Therefore, it may be predictable that compatibility relates significantly to adoption. Moreover, Mcquail (2005) showed that compatibility as the consistency between the new innovations and the user's values, beliefs, ideas and needs.

There are many researchers include this factor into their models due to the significance it holds. For example, Chen *et al*. (2002) added the factor of compatibility to their model when they discussed the e-legal services in their study. This study described the compatibility as the consistency between the e-legal services and the user's values and beliefs; on one hand, and the ideas and needs of those services' potential adopters. From other hand, in the area of IBSA, compatibility is considered very preferential when there is a pre-attitude and some expertise in using the modern technology, such as dealing with the internet and computers (Tan & Teo, 2000).

In light of the foregoing research, there are a lot of previous studies addressing the relationship between the compatibility factor and the attitude towards adopting the new innovations, especially in the IT fields (Chen *et al*., 2002; Eriksson, Kerem & Nilson, 2008; Chakravarty & Dubinsky, 2005).Also, in the field of IBSA, several previous studies discussed the effect of the compatibility factor upon the customers or users' attitudes towards IBSA. For example, in Estonia, Eriksson et al. (2008)

tackled the influence of the compatibility factor upon the bank clients' attitudes. The finding of this study indicated that the relationship between the compatibility factor and those clients' attitudes towards the IBSA is significantly and positively. Moreover, there is study that conducted in Malaysia by Nudbisi and Sinti (2006) indicated that compatibility is a determinant that has significant effect on customer's attitude toward adoption of IBS, Also, the researchers indicated that high compatibility of IBS to customers banking norms and lifestyle will make a greater diffusion of IBS in Malaysia context.

Shih and Fang (2004) was that conducting a study in Taiwan to get result of comparing among three models which (TAM, TPB and DTPB) and these consider IT technology acceptance theories. The result of this study shows that the relationship between the compatibility factor and the bank customers' attitudes to accept the IBS has an insignificant effect in the type of DTPB. Also, same result were arrived it by Nor and Pearson (2007) when they conducted study on students of college where the result of this study indicated that the compatibility factor insignificantly effects on the those' attitudes towards the IBSA in Malaysia. In addition, Al-majali and Mat (2010a) conducted study in Jordan to investigate the factors that may influence internet banking adoption. The result of this study indicates that compatibility has insignificant effect toward customer's attitude. According to Mansumitrchai and Chiu (2012) conducted study to identify the characteristics of UAE consumers and their attitudes toward the internet banking.The result showed that the relationship between compatibility factor and users' attitude is significance and positive for both adopters and non-adopters.

In a different setting, the study conducted in Hong Kong and China by Cho and Cheung (2003) asserted that the relationship between the compatibility and the attitudes of a number of e-legal services users is significantly and positively. Furthermore, it had been discussed this relationship by Sun and Zhang (2006).The result found that the relationship between the compatibility factor and the attitudes of the multimedia online services users is high significant and influential. Moreover, Jie, Peiji, and Jiaming (2007) conducted study in China to examine the antecedent which affecting consumer's attitude towards online shopping. The results found the compatibility factor significant influence on consumer's attitude towards online shopping. Moreover, in Canada conducted study by Shareef *et al.* (2011) to discovery of the critical factors that enable citizens to adopt e-Government (e-Gov) at different stages of service maturity .The finding of this study revealed that compatibility an important critical factor on consumer's attitude towards use those systems.

By contrast, the study that conducting in USA by Chakravarty & Dubinsky (2005) on the stock markets and carried on a referendum among those who visited the USA for study. Those visitors are asked about the influence of the compatibility factor upon their attitudes towards adopting the online stock trading services. The result reveals that compatibility has an insignificant effect upon the attitude towards adopting the online stock trading services. The two Tables (2.11, 2.12) show that summary of previous research examining the relationship between compatibility and individual's attitude related to IBSA and IT field respectively.

Table 2.11

Summary of previous research on the relationship between the compatibility and individual's attitude related to IBS.

Author	Area	Country	Respondent	D.V	Result
Shih & Fang (2004)	Internet banking	Taiwan	Personal banking customers	Attitude	Insignificant (positive)
Nudbisi & Sinti (2006)	Internet banking	Malaysia	Banks' customers	Attitude	Significant (positive)
Nor & Pearson (2007)	Internet banking	Malaysia	Public university students	Attitude	Insignificant (positive)
Eriksson *et al.* (2008)	Internet banking	Estonia	Banks' customers	Attitude	Significant (positive)
Al-Majali & Mat (2010)	Internet banking	Jordan	University employees	Attitude	Insignificant (positive)
Mansumitrchai & Chiu (2012)	Internet banking	UEA	Consumers from both private and government sectors	Attitude	Significant (positive)

Table 2.12

Summary of previous research examining the relationship between the compatibility and individual's attitude in IT field.

Author	Area	Country	Respondent	D.V	Result
Cho & Cheung (2003)	OnlineLegal service	HongKong	Potentialuser of online legal	Attitude	Significant (positive)
Chakravarty &Dubinsky (2005)	Financial Market	USA	Investors inthe United State	Attitude	Insignificant (positive)
Sun & Zhang (2006)	Blog media	Via internet	Internet users(blog users)	Attitude	Significant (positive)
Jie, Peiji, and Jiaming (2007)	online shopping	China	Online consumers	Attitude	Significant (positive)
Shareef *et al.* (2011)	e-government adoption	Canada	users of the Canadian e-Gov system	Attitude	Significant (positive)

The previous sections discussed the relationship between compatibility and individual's attitude toward actual behavior, in variety settings, using different models. It can be clearly seen from the discussion that compatibility factor has

inconsistent results; although most previous studies showed that the relationship between compatibility and customer's attitude toward actual behavior has a significant effect, a few indicated that the relationship is insignificant. Furthermore, little empirical evidence discusses this relationship, i.e., the compatibility impact on customers' attitude to adopt IBS in Iraq.

2.6.4 The RelationshipbetweenTrust and Attitude

Trust is perhaps a more critical component in building economic relationships in an online environment due to a greater perception of risk and uncertainty. This may be due to a higher threat of possible inappropriate opportunistic behaviors such as failure to deliver goods or services as promised, and misuse and unauthorized distribution of personal information (Gefen, 2002; Mansumitrchai and Chiu, 2012; Almajaly, 2011; Gefen& Straub, 2004; Gefen, Karahanna & Straub, 2003). Generally, across disciplines, there is agreement that trust only exists in an uncertain and risky environment. Mayer *et al.* (1995), as cited in Sonja and Ewald (2003), explained that trust is unnecessary if there is total certainty and no risk. Trust in e-service is very important because in a virtual environment, the degree of uncertainty of internet transactions is higher compared to traditional setting (Rotchanakitumnuai & Speece, 2003; Almajaly, 2011).

Trust has several definitions, according to Moorman, Deshpande and Zaltman (1993), trust is: "The perceived credibility and benevolence of a target of trust". Doney, Cannon and Mullen (1998) defined trust as: "A willingness to rely on exchange partners in whom one is confident". According to McKnight and Chervany, (2002), typology of trust related to e-service consumer actions comprises

four concepts: disposition to trust, institution-based trust, trusting belief andtrusting intention. In many cases, trust is based on previous interactions (Gefen, 2000).

Trusting online activities is very important, and is a key to e-commerce development (Abushanab *et al*., 210; Suh & Han, 2002).According to Alsajjan & Dennis (2006), trust is even more vital for online banking compared to offline. Many researchers concur that trust is more important in online services in general, and in IBS, in particular. This is due to the fact that online banking transactions include sensitive information and users are concerned about access to critical files and information transferred via the internet (Wang, 2011; Bradley & Stewart 2003; Mukherjee, Nath & Pal, 2003; Suh & Han 2002).

Literature proves that lack of trust is one of the major reasons why consumers are reluctant to adopt IBS (AL-Majali, 2011; Rotchanakitumnuai & Speece 2007; Grabner-Krauter & Faullant 2008).

For e.g., Gefen and Straub (2004) also considered trust issues as crucial drivers of IBSA. Stewart (2003) indicated that at higher levels of trust, customers tend to perceive a website as being more useful. In addition, George (2002) indicated that the online services needs the trust element; since trust is one of the main additions influencing the electronic setting. Furthermore, trust may act as a barrier against the clients' dealing with a certain environment; this occurs when the client loses trust in this environment (Shareef *et al*., 2011; Mcknight, Choudhury & Kacmar, 2002).

For successful IBSA, individuals must be confident of trust, since IBS deals with financial transactions (Abushanab& Pearson 2007), and banks have to avail a secure and reliable environment (AL-Somali *et al*. 2009).

Several past studies have addressed the importance of the trust concept in the field of the new technology services adoption; given that IBS is included within these technology services. For instance, a study was conducted in Korea by Suh and Han (2002) that discussed and investigated the impact of trust upon the bank customers' attitudes towards the acceptance of IBS. The results of statistical analyses indicated that trust significantly and positively impacts customers' attitude towards IBSA. Moreover, Jahangir and Begum(2008)considered that trust as having a major influence on the attitudes of the IBS users. The study indicated that the relationship between trust and users' attitudes is highly significant and positive effect. Nor and Pearson (2007) conducted a study to test the influence of trust on several attributes of IDT on IBSA. The survey used 1164 MBA and business students in four Malaysian public universities. Using SEM to analyze the data, the results showed that trust significantly influences those students' attitude toward using IBS.

Grabner-Krauter and Faullant (2008) confirmed that the relationship between the trust factor and the attitudes of a number of the bank clients' positively influenced their attitudes towards adopting this kind of internet technology services. Furthermore, through a revised TAM, ALsajjan and Dennis (2008) conducted a study to examine the factors influencing consumers' acceptance of IBS. In this study, the survey distributed 618 questionnaires to university students in the UK and KSA. The findings of this study showed that the UK customers perceive bank's trustworthiness

as more influential, compared to their counterparts in KSA. Also, in KSA and based on TAM, with the incorporation of additional important control variables, such as trust, Al-Somali *et al*. (2009) conducted a study to investigate what encourages customers towards IBSA. The finding of this study indicated that trust has a significant influence on the attitude towards IBSA. In Jordan, a study was conducted by Al-majali (2011) to understand what factors impact the customer's attitude toward IBSA among Jordanian public university employees who have used IBS. This study found that the construct of trust is a significant factor that influences customer's attitude towards IBSA. Mansumitrchai and Chiu (2012) conducted a study to identify the characteristics of UAE consumers and their attitudes toward the IB, using both qualitative and quantitative data. The respondents were from private and public sectors. The result showed that adopters and non-adopters had different attitudes toward three factors of adoption, of which trust was the most important factors for non-adopters. Also the finding from this study indicated that the relationship between trust factor and users' attitude is significant and positive for both adopters and non-adopters.

Outside the range of IBS but related to IT, many previous studies investigated and examined the relationship between the influences of trust on the users' attitude toward actual behavior. For example, in online purchase services field, Chi and Tang (2008) conducted a study to examine the influence of the trust factor on the attitudes of a number of higher education students in Taiwan and the relationship was found to be significant and positive.

In another field, a study was conducted in Hong Kong by Cho and Cheung (2003) on the relationship between trust and users' attitude. The result pointed out that the trust factor is one of the most significant factors influencing the attitudes of the potential Internet users towards using e-legal services. Another study was conducted in USA and Australia by Amoroso and Hunsinger (2008) to discuss the trust factor and the impact it has upon the attitudes of a number of graduate students. The finding indicated that the relationship between the trust and the attitudes of those students towards the IBSA is significant and positive. Furthermore, a study was conducted in Taiwan by Wang (2011) to understand better the customers' purchase intentions. The number of surveys completed was 206 and, all customers had experienced online shopping. The finding of this study revealed that trust factor significantly influenced attitude to use online shopping. In Turkey, a study was conducted by Ozkanand Kanat (2011) to investigate the factors that may affect users toward adoption of G2C e-Government services. The results indicated that construct of trust is important in determining citizens' perceived and positive effect on the attitude toward the use of e-Government service and confirmed that trust and attitudes successfully explained the e-Government service adoption. Table 2.13 shows the summary of previous research on the relationship between the trust and individual's attitude in IT field.

Table 2.13
Summary of previous Research examining the relationship between the trust and Individual's Attitude related to IT field.

Author	Area	Country	Respondent	D.V	Result
Suh & Han (2002)	Internet banking	Korea	Bank customers	Attitude	Significant (positive)
Cho & Cheung (2003)	Online legal	Hong Kong	Potential users of online legal	Attitude	Significant (positive)
Jahangir & Begum(2008)	Electronic banking	Banglades h	Customers of private banks	Attitude	Significant (positive)
Nor & Pearson(2007)	Internet banking	Malaysia	University students	Attitude	Significant (positive)

Table 2.13 *(Continued)*

Grabner & Faullant (2008)	Internet banking	Australia	Bank customers	Attitude	Significant (positive)
Chi &Tang (2008)	Online shopping	Taiwan	Executive MBA students	Attitude	Significant (positive)
ALsajjan & Dennis (2008)	Internet banking	UK and KSA	university students	Attitude	Significant (positive)
Amoroso & Hunsiger (2008)	Internet purchasing	USA, Australia	Undergraduate students	Attitude	Significant (positive)
Al-Somali *et al.* (2009)	Internet banking	Saudi Arabia	Customers of private banks	Attitude	Significant (positive)
Wang (2011)	Online shopping	Taiwan	experience customers online shopping	Attitude	Significant (positive)
Ozkan & Kanat(2011)	G2C e-Government	Turkey	Students online	Attitude	Significant (positive)
Al-majali (2011)	Internet banking	Jordan	university employees	Attitude	Significant (positive)
Mansumitrchai & Chiu (2012)	Internet banking	UEA	Consumers from both private and government sectors	Attitude	Significant (positive)

Many previous studies have found that trust is one of the most important attributes IBSA (Mansumitrchaiand Chiu, 2012). In addition, prior discussion showed that the relationship between trust factor and customers' attitude toward adoption of the new technology has a significant and positive effect; these results postulate the importance of trust, especially when the customers are dealing with online transaction via the internet. In addition, trust's effect on customer's attitude has been investigated in a diverse way. Although the relationship between trust and customers' attitude has been examined in different countries in an IBS setting, however, such a study has not been carried out in Iraq.

2.7 SUBJECTIVE NORM DEFINITION

According to Bearden *et al.* (1986), subjective norm refers to "the individual's perceptions of the social pressures, whether or not adopt an innovation. Social influence causes a normative influence that occurs when individuals conform to the expectations of others". The definition of subjective norm in TRA by Fishbein and Ajzen (1975, p. 302) is: "The person's perception that most people who are important to him think he should or should not perform the behavior in question". On the other hand, as stated in TPB, the subjective norm is defined by Ajzen (1991, p. 188) as: "The perceived social pressure to perform or not to perform the behavior". Furthermore Taylor and Todd (1995, p.149) defined subjective norm as stated in DTPB as: "Perception that significant referents desire the individual to perform or not to perform the behavior".

Subjective norm refers to an individual's perceptions of the social pressure to engage in a certain behavior. The idea suggests that attitudes and beliefs of others in groups to which an individual belongs will shape his or her behavior toward the usage of a specific technology (Ajzen 1991). Ajzen and Fishbein (1980) viewed social pressure or expectations from people in general (subjective norm), or specific groups or individuals (normative beliefs), which form social norms. Based on this thought, the TPB proposes that subjective norm may have a significant effect on one's behavior to adopt a certain technology.

Past studies have identified several reference groups (peers and superiors) who can exert social pressure on individuals to perform certain behavior (Taylor & Todd 1995). For example, Parthasarathy and Bhattacherjee (1998) showed that friends,

colleagues, and relatives influence users to form their initial adoption decisions. In addition, Nor and Pearson (2008) indicated that friends, family members and colleagues or peers may affect individuals' perceived social pressure (i.e., subjective norm) on whether or not to adopt IBS. Based on the above, it can be seen that subjective norm antecedents have been investigated in fragmented and diverse ways; furthermore, as mentioned in Chapter one (problem statement), lack of campaign promotions by the prestigious media to promote the IBS in Iraq could be one of the main reasons that prevents customers from adopting IBS in Iraq. Moreover, there is also a noted lack of past studies regarding the topic in an IBSA setting. This study identifies the dimension of third party support influence in terms of social recommendation and prestige media. Figure 2.11 shows the relationship between the dimension of third party support in terms of social recommendation influence and prestige media influence and subjective norm.

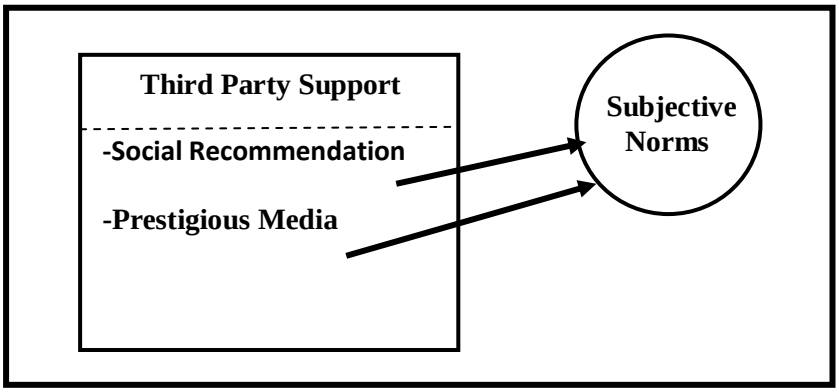

Figure 2.11
Relationship between third party support and Subjective norms

2.7.1THIRD PARTY SUPPORT

An innovation create uncertainty (Rogers, 1995).Individuals tend to be uncomfortable with uncertainty and try to increase interaction with a third party to interpret the innovation (Karahanna *et al.*, 1999). This increased interaction

influences the behavioral decision (Nilsson, 2007; Karahanna *et al*, 1999). Informational influence occurs when relevant others of the individual inform of their own personal experience and evaluation of the innovation or when the individual can observe the relevant others using the innovation. Furthermore, normative pressure from relevant others to adopt or use the innovation can reduce the risk of adoption and uncertainty, since it can provide proof that the behavioral decision to adopt is good.

Third party support may involve endorsement by previous customers (can be a great third party support to potential customers), social recommendations from friends/relatives, or from prestigious media. Lim *et al*. (2006) found that satisfied customer endorsement by peers can increase consumers' normative beliefs about a store, thereby positively influencing consumers' attitudes and their willingness to buy from that store ultimately leading to actual buying behaviors. Also, media, such as well-known business magazines or newspapers, greatly influence consumers in their decisions making. Social recommendation from friends/relatives based on their previous purchase experience and recommendations is also an important and influential factor (Zhou & Tian, 2010).

Therefore, this research aims to validate the influence of third party support construct on the subjective norms within the Iraqis environment. Moreover, this research attempts to address the influence of this construct, in the context of internet banking, recently introduced in the social networking domain. This research may contribute for more insights about the perceptions of potential online customers toward third party support in terms of social recommendation and prestigious media.

2.7.1.1 Social Recommendations

Several studies show that individuals have a preference to turn to friends and family members for help, compared to strangers or formal agencies (Nilsson, 2007; Amato, 1990; Burke & Weir, 1975; Croog *et al.*, 1972).

Social recommendation is defined in this research as all potential online consumers' family members, friends, and colleagues ' support and assurance of a certain internet banking transaction (Nor & Pearson, 2008) . Many referral sets, such as peers and superiors, have been determined by researchers, as having the ability to create social stress on a person regarding the usage of computers (Taylor & Todd, 1995). It has been found by online practices research that relatives, colleagues, and friends can affect individuals to form initial acceptance decision (Parthasarathy and Bhattacherjee, 1998; Limayem *et al*. 2000). In terms of a consumer-oriented service, the consumer-relevant groups around the individual (family, friend, etc.) may influence the individual's adoption. Rouibah (2008) indicated that the Arabic culture is directly influenced by both Islamic habits and traditions, values and behaviors dictated by Islamic teachings upon the family, which in turn control the individual's behaviors. The researcher then found that the family, and its members, influences the individual's behaviors in a specific manner.

The social recommendation can be obtained and developed from entities around which individuals organize their social relationships. For e.g., it can be developed in a social, psychological, legal, or physical entity around which joint activities are organized (e.g., workplaces, voluntary organizations, hangouts, families, etc.) (Feld, 1981).

Furthermore, many behavioral researchers consider social recommendation (i.e., friends, family members and colleagues or peers) as one of the behavioral subjective norms that has an influence upon the individuals' behaviors (Taylor & Todd 1995).With regards clients' behaviors towards IT usage, especially toward the new technology services adoption, there are some previous studies which confirm that social recommendation (i.e., friends, family members and colleagues or peers) is one of the subjective norm determinants of technology services. For e.g., based on DTPB to assess the peers' influence (such as friend) upon a number of computer center's potential users conducted by Taylor and Todd (1995), using students as participants, result showed that the peers (friends of student) are significantly and positively related to subjective norm. Lau (2002) investigated factors that influence the adoption of online trading and showed that competitors, customers, decision makers and employees were are significant reference groups influencing brokers' decision to adopt the technology. Furthermore, Ng and Rahim (2005) conducted a study in Singapore and posited that family and peer influence plays a significant and positive role as one of the behavioral subjective norms in relation to the usage of the internet services among number of college students through their home computers.

In addition, Zhou & Tian (2010) conducted a study to investigate what factors contribute to consumers' trusting beliefs in online shopping in a relatively low-trust environment. College students in China were used as sample for this study. The finding of this study revealed that perceived reference power (previous customers, social recommendations and referrals from prestigious media) is an influential antecedent to the trusting beliefs of consumers.

Related to IBSA, a study was conducted in Malaysia by Nor and Pearson (2008) to examine the factors that influence customers to accept IBS. They also evaluated its impact on an individual's intention to adopt Internet banking. The finding of this study confirmed the important role played by the family, friends and colleagues in the behavior of a number of college students. Also, the study referred to the relationship between them and found the subjective norms are influential and positive. In the IBS field, Al-majali (2011) conducted a study in Jordan to investigate what factors influence the customer's attitude to adopt IBS. This study used a survey data of 700 Jordanian public university employees who have used IBS. The finding of this study revealed that family is a significant factor that influences subjective norm.

By contrast, a study conducted in Taiwan by Chu and Wu (2004) in the field tax payer information stated that the family influence on the subjective norms may not be positive. The result of this study, which was conducted on a number of insurance companies' employees, found that family insignificantly and positively influences the subjective norms. Table 2.14 shows the summary of previous research on social recommendation's influence in the IT field.

Table 2.14
Summary of Previous Research on Social Recommendation Influence in IT field

Author	Area	Country	Respondent	D.V	Result
Taylor & Todd (1995)	Computer resource center	Canada	Potential users of computer resource center	Subjective norm	Significant (positive)
Lau (2002)	online trading	Hong Kong	Mail randomly, broker firms	Subjective norm	Significant (positive)
Ng& Rahim (2003)	Home computer user	Singapore	Undergraduate students	Subjective norm	Significant (positive)

Table 2.14 *(Continued)*

Chu & Wu(2004)	Tax payer information	Taiwan	Life insurance clerks	Subjective norm	Insignificant (positive)
Nor& Pearson (2008)	Internet banking	Malaysia	University students	Subjective norm	Significant (positive)
AL-Majali (2011)	Internet banking	Jordan	public university employees	Subjective norm	Significant (positive)
Zhou & Tian, (2010)	Online Shopping	China	college students	Trusting Beliefs	Significant (positive)

2.7.1.2 Prestigious Media

According to Zhou and Tian (2010, p.153), prestigious media includes well-known business magazines, newspapers, etc. Ng & Rahim (2005, p. 239) defined this factor as "The influence or pressures from the prestigious media to perform the behavior and included mediums of communication, such as newspapers, radio, television, Internet, broadcast e-mails, official announcements made by authorities, etc., that are designed to reach the mass of the people". Based on TBP model, the mass media was introduced by Ajzen (1985) as a construct related to subjective norm. The result revealed that mass media influences clients when it comes to using IT. Besides, the prestigious media is considered one of the main information sources in many fields, due to their coverage of wide areas and promotional campaigns that attract people's attention and promote the activities from which the community may get benefits (Agostinelli & Grube, 2002; Zhou & Tian, 2010).

Rogers (1995) indicated that the mass media is one of the most significant means when it comes to social influences. For e.g., advertisements in the mass media can encourage people to consume healthy food. Additionally, Chan (1998) pointed out

that the mass media plays a vital role in influencing the clients' behavior in a positive or negative manner.

In the IT setting in general, the literature indicates that there are some previous studies on the influence of the mass media upon the clients' behavior concerning the usage and adoption of various services. For e.g., Chu and Wu (2004) considered the influence of the mass media factor as one of the subjective norms upon the behavior of the insurance companies' employees in Taiwan regarding the adoption of the e-filling of tax system documents. The findings revealed that the relationship between the mass media factor and the employees' behavior is significant and positive.In addition, the study by Fogelgren-Pedersen (2003) discussed the influence of the mass media factor upon the behavior of a number of internet users in relation to their usage of mobile online services. The results indicated that this factor has a significant and positive influence upon those users' behaviors. Woon and Kankanhalli (2007) conducted a study on a number of IS employees in Singapore and discussed the influence of the mass media factor upon the behavior of those employees concerning their usage of the e-filling system. The results show that the relationship is significant and positive. In addition, Pederson and Nysveen (2004) looked at the influence of the mass media factor upon the subjective norms with regard to using online message services by general secondary education students in the USA. The findings show that the relationship is significant and positive, as well.

Ng and Rahim (2005) studied the influence of the mass media factor as one of the subjective norms upon the behavior of a number of graduate students in Singapore. The study showed that the mass media positively affects the behavioral intentions of

those students concerning their usage of security and anti-virus programs on their home computers. Table 2.15 presents a summary of previous research on prestigious media influence in the IT field.

From previous discussions in sections 2.7.1.1 &2.7.1.2, it can be seen that social recommendation that results from friends, members of family, or colleagues, is an important referent group to determine individual behavior towards adoption of a new innovation. In an IBS setting, the social recommendation plays a significant role in determining normative beliefs for customers' behavior to adopt IBS. Social recommendation influence was also examined in another area, using different models.

Table 2.15
Summary of previous Research on Prestigious Media influence in IT field

Author	Area	Country	Respondent	D.V	Result
Fogelgren-Pedersen, Andersen & Jelbo(2003)	Internet mobile	Via Internet web	Internet mobile users	Subjective norm	Significant (positive)
Chu & Wu (2004)	Taxpayer information	Taiwan	Life insurance clerks	Subjective norm	Significant (positive)
Pedersen & Nysveen (2005	Use text message	USA	Upper secondary school	Subjective norm	Significant (positive)
Ng & Rahim (2005)	Usecomput er security practice	Singapore	Undergraduate students	Subjective norm	Significant (positive)
Woon & Kankanhalli (2007)	Secure developme nt of application	Singapore	Information system professional	Subjective norm	Significant (positive)
Zhou & Tian, (2010)	Online Shopping	China	College students	Trusting Beliefs	Significant (positive)

In addition, most past studies showed that social recommendation influence has a significant effect on subjective norm. Furthermore, only one study showed that the

social recommendation (family) influence has an insignificant effect on subjective norm as stated in Chu & Wu (2004), which could lead to the relationship between social recommendation influence and subjective norm having inconclusive results. Furthermore, Iraq is one of the Islamic countries that emphasize social recommendation influence on an individual's behavior. Therefore, this research can contribute by introducing new antecedents of subjective norms in IBSA.

Also, the prestigious media has a strong influence on subjective norm toward behavior. In addition, it can be seen that the prestigious media influence has been discussed in several IT fields, but not in IBS settings.

The researcher will thus investigate and test the influence of the third party support dimension in terms of social recommendation and prestigious media upon the individuals' behavior concerning IBSA in Iraq. Moreover, this dimension's influence has been investigated in fragmented and diverse ways in the IT field in general (Alshammari & Mohd, 2012; Zhou & Tian, 2010), not specifically in the IBS area.

2.8 PERCEIVED BEHAVIOR CONTROL (PBC) DEFINITION

PBC refers to "individuals' beliefs of their ability to perform a behavior"(Ajzen, 1991). PBC is defined by Ajzen (1991, p. 188)as: "The perceived ease or difficulty of performing the behavior or people's perceptions of their ability to perform a given behavior". Beliefs are affected by both internal as well as external factors. The internal perception of behavioral control reflects one's self-confidence in the ability to conduct the behavior.It is compatible with Bandura's (1991) concept of self-efficacy, which suggests a person's behavior is strongly influenced by one's

confidence to perform it. The external perception of behavioral control, reflects one's beliefs regarding the availability of resources (e.g., money, time, and other resources) to engage in the behavior.

Based on the TPB, PBC deals with the attendance or absence of necessary resources and opportunities. Those control beliefs could be based, in part, on past experience with the behavior, but they will frequently be influenced by second-hand information about the behavior, by the experiences of associates and friends, and by other factors that increase or decrease the perceived difficulty of performing the behavior in question. The more resources and opportunities individuals believe they have, and the fewer obstacles or impediments they expect, the greater should be their perceived control over the behavior (Ajzen, 1991).

2.9 ANTECEDENTS OF PBC

On the basis of the above mentioned conceptualization, the literature breaks down PBC into internal factor (self-efficacy) and external factor (resource facilitating conditions). Accordingly, an individual with the self-assured skill to use a computer and the internet is more inclined to adopt IBS (Ndubisi *et al*., 2004). As an external factor, the government can play an intervention and leadership role in the diffusion of innovation (Goh, 1995). Additionally, as supporting technological infrastructures become easily and readily available, internet commerce applications, such as banking services, will also become more feasible (Tan & Teo, 2000). In addition, internet users would be expected to be more inclined to adopt IBS. These three components are discussed and explained through the literature, to see the effects of self-efficacy,

government support and technology support on customer's decision to adopt IBS and other IT services.

In this study, the problem statement is related to PBC antecedents, as mentioned in Chapter one (problem statement). Lack of self-efficacy, lack of government support and insufficient internet technology infrastructure are what make for low usage of IBS technology. This study identifies three antecedent influences of PBC as shown in Figure 2.12.

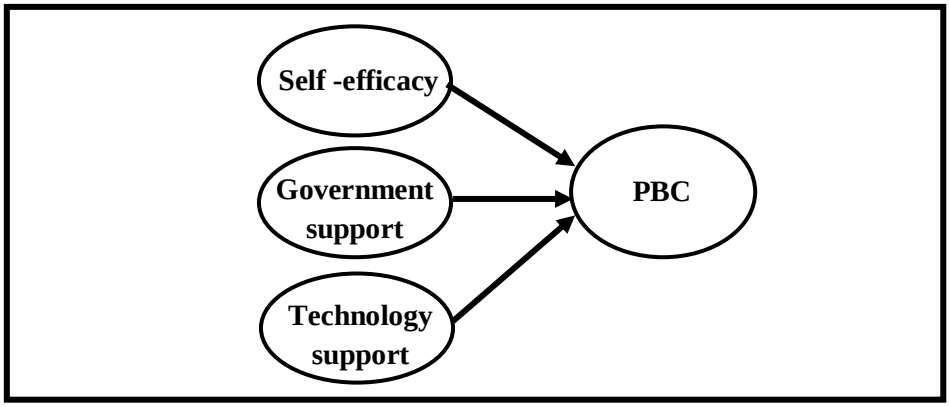

Figure 2.12
Antecedents of Perceived behavior control

2.9.1 The Relationship between Self-efficacy and Perceived Behavior Control

Compeau and Higgins (1995, p. 191) defined self-efficacy as: "The Judgment of one's ability to use a computer to accomplish a particular job or task". It is also defined as "an individual's self-confidence to perform tasks across multiple computer application domains" (Monsuwe, Dellaert & Ruyter, 2004). In the same vein, Compeau and Higgins (1995) confirmed that self-efficacy issue is a vital matter because it entails that the person possesses much expertise and practice in order to make use of the services online. In addition, Hill, Smith and Mann (1986) indicated that self-efficacy is considered an important issue in relation to advanced technology

services usage, as it requires that the individual are needed to engage in Internet banking activities such as access to computers and the Internet, so that he/she can use this technology.

Several studies have investigated the effect of self-efficacy on PBC. For example, in Malaysia, a study was conducted by Nor and Pearson (2008) about the importance of the effect of self-efficacy on the PBC of a number of students with regards to IBS usage. The result found that the relationship between self-efficacy and PBC is significant and positive. In addition, Al-majali and Mat (2010a) conducted a study in Jordan to investigate the factors that may influence IBSA. This study's finding showed that self-efficacy has significant effect toward customer's PBC and is found to be very important. In Tunis, Nasri & Charfeddine (2012) conducted a study to examine the factors that affect IBSA by Tunisian bank customers. They employed in their model, security and privacy, self-efficacy, government support, and technology support, PU, PEOU, attitude, social norm, and PBC the IBSA. The study revealed that the relation between self-efficacy and PBC was significant and positive.

By contrast and in same field, the study conducted also in Malaysia by Dauda *et al.* (2007) found that self-efficacy factor does not influence PBC of a number of students when it comes to IBS usage. The relationship is insignificant for those students.

In another field, in the USA, Pederson and Nysveen (2004) conducted a study on a number of students in senior classes to investigate the influence of self-efficacy factor upon PBC to adopt online message services usage. The result showed that self-

efficacy factor positively influences on the PBC. In other words, the students will be able to use this technology once they have the required self-efficacy.

Furthermore, Ng and Rahim (2005) conducted a study in Singapore and stated that the self-efficacy factor influence plays a significant and positive role as one of the PBC in relation to the usage of the internet services among college students through their home computers. Another study conducted in Canada by Taylor and Todd (1995) indicated that the self-efficacy factor significantly and positively affected PBC and it is one of the main additions influencing the computer center's potential users. A study was also conducted in Malaysia by Suki and Ramayah (2010) to examine the factors that determine acceptance of e-Government services by users, the result indicating that the relationship between self-efficacy and PBC is significant and positive. By contrast, the study conducted in Singapore by Woon & Kankanhalli (2007), indicated that the relationship between the self-efficacy and PBC is insignificant when it comes to using the online system.

In the above paragraphs, self-efficacy as one of the first components of PBC remains indecisive due to its being examined in a fragmented manner. Moreover, the discussion of the previous studies indicates that self-efficacy has been found to be correlated significantly to PBC in the adoption of new innovations. In the previous studies, only two showed self-efficacy's insignificant effect on customers' control toward actual behavior. These results indicate that the relationship between self-efficacy and PBC has inconsistent results. In addition, the aspect of determining the influence of an individual's ability to decide to adopt internet banking has not been

given proper attention in Iraq. Table 2.16 shows the summary of previous research on the relationship between self-efficacy and PBC in the IT field.

Table 2.16
Summary of previous Research on Relationship between Self- efficacy and PBC related to IT field

Author	Area	Country	Respondent	D.V	Result
Taylor & Todd (1995)	Computer resources center	Canada	Potential users of computer	PBC	Significant (positive)
Pedersen & Nysveen (2004)	Use textmessage	USA	Uppersecondary schools	PBC	Significant (positive)
Ng & Rahim (2005)	Home computer	Singapore	Undergraduate student	PBC	Significant (positive)
Dauda, *et al.* (2007)	Internetbanking	Malaysia	Individualbanking customers	PBC	Insignificant (positive)
Woon & Kankanhalli (2007)	Secure development of application	Singapore	Information system professional	PBC	Insignificant (positive)
Nor& Pearson (2008)	Internet banking	Malaysia	Universitystudents	PBC	Significant (positive)
Suki and Ramayah (2010)	E-government	Malaysia	Employees, and USM staff	PBC	Significant (positive)
Al-Majali and Mat (2010a)	IBS	Jordan	University employees	PBC	Significant (positive)
Nasri & Charfeddin (2012)	IBS	Tunis	Tunisian bank customers	PBC	Significant (positive)

2.9.2 The Relationship between Government Support and PBC

Government support is defined as "Creation of a suitable environment to encourage the clients and the organizations to use the technology and adopt the technological developments" (Goh 1995). Goh (1995) indicated that resource facilitating

conditions (government support) plays important role in the innovations diffusion process and technology existence.

In the same vein, governments set appropriate and effective policies and laws regarding electronic commerce that can encourage and increase technology adoption in the country (Shih & Fang 2004).The success IBS depends on the updates carried out by the banks in tandem with support of the government. In this regard, the government assists in securing internet services, allowing the bank to improve their websites and providing them with incentives (Eriksson *et al.* 2005). Furthermore, Tan and Teo (2000) confirmed that the government support for the IBSA and e-commerce may contribute to increasing awareness of the clients on the new technology, besides highlighting its advantages when clients deal with this technology.

Several previous studies discussed the impact of government support factor on the clients' acceptance of the technology services, particularly the influences related to acceptance of IBSA. For e.g., a study was conducted in Jordan by Al-majali and Mat (2010a) to investigate the factors that may influence IBSA. The finding indicated that government support has significant effect on customer's PBC. Moreover, in Tunis, Nasri & Charfeddine (2012) conducted a study to examine the factors that affect IBSA by Tunisian bank customers, where it was revealed that the relationship between government support and PBC was significant and positive towards IBSA.

By contrast and in the same IBS field, the study conducted by Hernandez & Mazzon (2007) indicated that the relationship between government support factor and PBC was non-influential on the IBS users in Brazil.

Outside the IBS setting, a study was conducted in Malaysia by Ndubisi *et al.* (2006) to examine the government support factor's influence upon PBC in education online services adoption. This study used students of government universities in Malaysia as a sample. The result showed that this factor significantly and positively effects on PBC.

By contrast, the study conducted in Canada by Taylor and Todd (1995) indicated that the government support factor insignificantly affects PBC among the computer center's potential users. Table 2.17shows the summary of previous research on the relationship between government support and PBC in the IT field.

Table 2.17
Summary of previous Research on Relationship between Government Support and Perceived Behavior Control in IT field

Author	Area	Country	Respondent	D.V	Result
Taylor & Todd(1995)	Computer resource center	Canada	Potential users of computer resources	PBC	Insignificant (positive)
Ndubisi*et al.* (2006)	E-learning	Malaysia	Students of public universities	PBC	Significant (positive)
Hernandez & Mazzon (2007)	Internet banking	Brazil	Internet banking users	PBC	Insignificant (positive)
Al-majali and Mat (2010)	Internet banking	Jordan	University employees	PBC	Significant (positive)
Nasri & Charfeddine (2012)	Internet banking	Tunis	Tunisian bank customers	PBC	Significant (positive)

2.9.3 The RelationshipbetweenTechnology Support and PBC

There are many countries that are lagging behind in terms of ICT development, because of lack of access to computer or internet. Technology support, the third component of PBC, is defined by Goh (1995) as: "The Effort of providing the

suitable infrastructure, the needed appliances, Internet access and software for using the technology". Technology support positively affects the flexibility of the technology services, internet services and IBS, thus enabling the client to use and adopting IBS. Technology has the advantage of allowing users to easily utilize the technology services with more flexibility (Shih & Fang, 2004).

Given that the play important role this factor has upon the usage of online services, several researchers have been supported its influence upon the individual' behavior related to IBSA. For e.g., the study conducted in Singapore by Tan and Teo (2000) indicated that the technology support factor does not affect among of the internet users' usage of the IBS. Also, the result showed that the relationship between the technology support factor and PBC is non-influential. In the same vein, the study conducted by Hernandez & Mason (2007) indicated that the relationship between technology support and PBC is non-influential on IBS users in Brazil, and has an insignificant effect. In addition, Al-majali and Mat (2010a) conducted a study in Jordan to investigate the factors that may influence IBSA, which showed that technology support factor has insignificant effect on customer's PBC toward IBSA.

In the same IBS field, in Tunis, Nasri & Charfeddine (2012) conducted a study to examine the factors that affect IBSA by bank customers in Tunisia, which revealed that the relationship between technology support and customers' PBC had a significant and positive effect on IBSA.

In other fields, Taylor and Todd (1995) investigated the relationship between the technology support and PBC, and found the technology support had an insignificant

effect on PBC of computer center's' potential users in Canada. A study was conducted in Malaysia by Ndubisi *et al.* (2004) to investigate the factors that influence students in government universities in Malaysia to adopt the education online services. The finding revealed that technology support factor had a significant and positive effect on PBC for those students. Table 2.18 shows the summary of previous research on the relationship between technology support and PBC in the IT field.

Table 2.18
Summary of previous research on relationship between Technology support and perceived behavior control in IT field

Author	Area	Country	Respondent	D.V	Result
Tan & Teo (2000)	Internet banking	Singapore	Internet users	PBC	Insignificant (positive)
Hernandez &Mazzon (2007)	Internet banking	Brazil	Internet banking users	PBC	Insignificant (positive)
Ndubisi (2006)	E-learning	Malaysia	Students of public universities	PBC	Significant (positive)
Taylor & Todd (1995)	Computer resource center	Canada	Potential users of computer center	PBC	Insignificant (positive)
Al-Majali & Mat (2010a)	IBS	Jordan	University employees	PBC	Insignificant (positive)
Nasri & Charfeddin (2012)	IBS	Tunis	Tunisian bank customers	PBC	Significant (positive)

Based on the above findings, the relationship between technology support and PBC is very inconsistent, and examined in diverse and fragmented ways. Not much has been studied in this context in Iraq.

2.10 OPERATIONAL DEFINITION

The operational definition refers to the editing process of conceptual definitions of the variables and dimensions to make them measurable in a tangible way to be

involved in a research process (Zikmund *et al*., 2010). According to Sekaran and Bougie (2010), operational definition involves identifying the behavioral dimensions, facets, or properties denoted by specific concepts. In this process, the abstract notion or concepts are reduced to observable behaviors and characteristics.It helps to establish an accurate definition of the variables to be considered in the study. In fact, each construct under investigation needs to be operationalized through the selection of scale items and scale type (Hinkin, 1995). The operational definitions of the factors to be used in this research are listed in Table 2.19.

Table 2.19

Operational Definitions of the Critical Success Factors of Internet Banking Adoption

Variables Name	Definition
Internet Banking Services Adoption (IBSA)	The client's usage of multiple services represented in inquiring about the account balance, applying for a loan, remitting money from one account to another and many other services that are basically achieve through Internet (AL-Majali & Mat, 2011, P.2).
Attitude (ATT)	The degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question (Ajzen 1991, p. 188).
Perceived ease of use(PEOU)	The extent to which a person believes that using the system will be free of effort (Davis 1989, P. 320).
Perceived Usefulness (PU)	The extent to which a person believes that using the system will enhance his/her job performance (Davis 1989, P. 320).
Perceived Compatibility (PC)	The degree to which an innovation is perceived as being consistent with the existing values, needs, and past experiences of potential adopters (Rogers, 1983, p. 224).
Trust (T)	The belief that the promise of another can be relied upon and that, in unforeseen circumstances, the other will act in a spirit of goodwill and in a benign fashion toward the trustor (Suh and Han, 2002, p. 249).
Subjective Norm (SN)	Perception that significant referents desire the individual to perform a behavior or not (Taylor & Todd 1995, p. 149).
Social Recommendations(SR)	The influence or pressure from sources known (friends, family members and colleagues or peers) to perform the behavior (Nor and Pearson, 2008, P.43).
Prestigious Media (PM)	The influence or pressures from the mass media to perform the behavior (Ng& Rahim 2003, p. 239).

Table 2.19*(Continued)*

Perceived Behavior Control (PBC)	Considered as reflecting the perceptions of internal and external constraints on behavior (Taylor & Todd 1995, p. 149).
Self-Efficacy (SE)	Judgment of one's ability to use a computer to accomplish a particular job or task (Compeau & Higgins 1995, P. 191).
Government support (GS)	Creation of a suitable environment to encourage the clients and the organizations to use the technology and adopt the technological developments (Goh, 1995).
Technology Support (TS)	Effort provided for the suitable infrastructure, the needed appliances, Internet access and software for using the technology (Goh, 1995).
Internet Technology Literacy (ITL)	The prior experience of technologies (Internet), particularly prior experience of using computers, can make consumers familiar with technologies and facilitate their appreciation of the added value of the technologies (Nasri, 2011 P. 147).
Resistance to Technology (RT)	Customers' resistance to change from traditional ways of conducting banking activities to new technology ways (Internet banking) (Al-Somali et al., 2009 P132).
Risk Technology (RIT)	The uncertainty resulting from the potential for a negative outcome perceived risk represents the subjective expectation of a loss or sacrifice in using the risky technology. Perceived risk is the expectation of losses associated with using a risky technology (Pavlou, 2003, P109).
Anxiety of Technology (AT)	Evoking anxious or emotional reactions when it comes to performing a behavior (e.g., using a computer) (Venkatesh et al. 2003, P 432).
Information on Technology (IOT)	The amount of information they have about internet banking, to measure amount of information about the possibilities, advantages/disadvantages involved with IBS (Sathye, 2003; Nassri, 2011, P. 147).

2.11SUMMARY

This chapter explores and gives brief detail about underpinning theories. It also addresses the definition of IBSA and its antecedents, individual factors of technology, attitude and its antecedents, subjective norm and its antecedents, PBC and its antecedents; all these discussions are conducted by reviewing the literature. It is used as a basis for the conceptual framework in the next chapter. Operational definitions of constructs are also provided.

CHAPTER THREE

METHODOLOGY

3.0 INTRODUCTION

The previous chapter has critically and thoroughly reviewed the existing literature related to IBSA. Then, this chapter developed a conceptual model and outlined a set of hypotheses concerning the factors that influence or inhibit the process of IBSA; and covers an overview of methodology used to arrive at the logical sequence of the research processes. The research methodology employed to discuss the research design, sampling methods, structured questionnaire and analysis method.

3.1 THEORETICAL FRAMEWORK OF THE STUDY

A theoretical framework is a collection of interrelated concepts that leads to the research, and determines the things to be measured, and the relationships required from the data (Borgatti, 1999). Furthermore, a theoretical framework is a representation of reality; it explains in greater detail those aspects (variables) of the real world the scientists consider to be relevant to the problem being investigated, and clarifies the significant relationship among them (FrankfortNachmias & Nachmias, 1996).

As mentioned previously, the theoretical model for this study will be based on DTPB (Taylor and Todd, 1995), which includes thirteen components (see Chapter two, Figure 2.5). These components are: (1) actual behavior, (2) behavioral intention, (3) attitude, (4) subjective norm, (5) perceived behavior control, (6) perceived usefulness, (7) perceived ease of use, (8) compatibility, (9) peer influence, (10) superior influence, (11) self-efficacy, (12) facilitating condition sources, and (13)

facilitating technology sources. The main reason for choosing the DTPB, is because it provides a complete understanding of actual usage by focusing on the factors which can influence systems use in general, and offers a number of advantages, such as rendering a more transparent and easier to grasp relationship among beliefs, attitudes and intentions, as well as enabling application of the model to a variety of situations. This is more relevant because it helps to determine specific factors that lead to adoption and use of new technology (Taylor & Todd, 1995). In addition, it identifies specific salient beliefs that may influence information technology usage. Specifically, the model is found to have better predictive powertoward actual usage;when compared to the traditional TAM and TPB (Taylor & Todd, 1995).

DTPB model will be extended to include 18 main components as constructs of IBSA as shown in Figure 3.1 in this chapter. The new components in the framework will be: individual factors of technology (Internet technology literacy, resistance to technology, anxiety about technology, risk of technology, and information on technology); trust. In addition, four components from DTPB (peer influence, superior's influence, resource facilitating conditions and technology facilitating conditions) will be replaced with third party support dimension in terms of social recommendation, rather than peers' influence; and prestigious media rather than superior's influence, we will also replace facilitating conditions with government support and technology facilitation with technology support.

Taylor and Todd (1995) suggested that a set of attitudinal beliefs derived from the literature which describes DOI (Rogers, 2010, 1995), has been included in previous studies on new technology adoption. This theory found that five perceived

characteristics of an innovation that influence adoption are relative advantages, compatibility, complexity, trialability, observability (Rogers, 2010) Three out of these five were found to be consistently related to adoption decision: relative advantages, complexity and compatibility (Moore & Benbasat, 1991, Taylor &Todd, 1995). Relative advantage means: "the degree to which an innovation provides benefits which supersede those of its precursor and may incorporate factors, such as economic benefits, image enhancement, convenience and satisfaction" (Rogers, 1983). This is similar to the PU construct in TAM (Davis, 1989), defined as "the degree to which a person believes that using a particular system would enhance his or her job performance". Both relative advantages and PU have similar definition and are related to improvement and performance. Both constructs were also found to have been operationalized in terms of their relative impact on performance (Davis, 1989, Moore & Benbasat, 1991).

According to Rogers (2010), complexity represents the degree to which an innovation is perceived to be difficult to understand, learn or operate. This construct is in contrast to the PEOU construct in TAM (Davis, 1989). Compatibility is "the degree to which the innovation fits with the potential adopters' existing values, previous experiences and current needs" (Rogers, 1983). Taylor and Todd (1995) suggested that the relative advantages and compatibility constructs contribute to increasing the customer's attitude toward information technology adoption or usage, while complexity decreases the customer's attitude. He suggested that the attitude toward information technology should become more positive. Such an outcome would be consistent with the general diffusion of innovation literature and with

specific results observed for information technology adoption (Davis, 1989, Moore & Benbasat, 1991).

For the current study, the researcher is interested to add the trust construct in the model, as the study will examine IBSA, which involves private information and security. Previous studies (Mansumitrchai & Chiu, 2012 p.111; Almajali, 2011, p. 2; Rotchanakitumnuai & Speece, 2007; McKnight *et al*., 2002; Suh and Hun, 2002; Mayer *et al*., 1995), asserted that the attribute of trust is considered as one of the most important dimensions in an online environment in general, and in IBS, specifically. Hence, trust is a major factor influencing IBS growth (Suh and Hun, 2002 p. 250).Customers' attitudes have also been determined by the level of their trust (Suh and Hun, 2002; Grazioli and Jarvenpa, 2000).

One chapter in this study, the problem statement indicates that there are several factors causing low IBSA in Iraq. As mentioned, due to lack of trust, customers are reluctant to divulge sensitive personal information to websites. Their reluctance has more to do with lack of trust and not so much on Internet banking security. Therefore, this study intends to examine this construct on the customer's attitude toward IBSA in Iraq. Thus, the attitudinal belief in this study will consist of four antecedents: PU, PEOU, compatibility and trust. Moreover, it has been proven that these antecedents have a direct effect on attitude toward IBSA (see Chapter two).

For normative beliefs, Taylor and Todd (1995) suggested that in the original DTPB model, there are two beliefs, namely: peer influence and superior's influence, which are related in an organizational setting. Because social influence could be one reason

for low IBSA in Iraq, and it has been found to have a significant effect on IBSA, as mentioned in the problem statement, the current study will attempt to discuss the influence of third party support terms of social recommendation and prestigious media. Social recommendation is a referent group, i.e., those who are close to individuals in Arab countries (Rouibah, 2008), such as family members, friends, or colleagues. The prestigious media could also influence individuals more than the referent group itself (Battacherjee, 2000). The original DTPB showed peer influence and superior's influence as antecedents of subjective norm, but in this study, these antecedents will be removed and replaced with a new dimension third party support, as this is considered as an antecedent of subjective norms in this study.

For this study, the control beliefs or PBC in the original DTPB, will include two constructs, i.e., the internal notion of individual (self-efficacy) and external resource constraints or facilitating condition, which also comprises two constructs - resource facilitating conditions and technology facilitating conditions (see Chapter three). For this study, self-efficacy remains but facilitating conditions and technology facilitating conditions will be replaced with government support and technology support. This replacement will give the study more opportunities to examine the effect of customers' self-efficacy, since it is also an important reason for low IBSA in Iraq. Moreover, the discussion of the problem statement shows that the lack of government support and insufficiency of internet infrastructure are other factors that could cause low IBSA in Iraq.

For proposed extensions to DTPB, the personality dimensions are those factors that are expected to influence actual behavior and are related to one's personality, i.e.,

internet technology literacy, resistance to technology, risk of technology, anxiety of technology, and information on technology. Based on literature, the following dimensions are believed to be significant in influencing IBSA (see Chapter two). Technology literacy has been explored in the literature and found to have a significant influence on usage; the ability to learn new technology is related to the innovation that it can be used as an indicator of an increased rate of technology adoption (Kaminer, 1997). The experiences of technologies, especially with Internet technology, influence IBSA; thus, familiarity with technologies can facilitate its appreciation. Karjaluoto *et al.* (2002) posited that past experiences with technologies influence on actual behaviors.

Based on the social cognitive theory (SCT) literature and the work of Harrison and Rainer (1992), the anxiety about technology will influence IBSA inversely. Our study will include anxiety as part of the composition of personality traits. Another individual factor that has a similar inverse effect is perceived risk of technology. The work of Pavlou (2003) supported the direct effect of risk on actual behavior. Also, there is an inverse relationship between the consumers' decision and technology adoption to usage; this happens because of user resistance to technology. Based on the literature (see Chapter two), we believe there is a direct effect between user resistance to technology and actual behavior (Al-Somali *et al.* 2009).

Finally, consumers need to have sufficient information about IBS before they make a decision to keep up the adoption. In a study of Australian consumers, Sathye (1999), found that consumers did not know about the pros and cons of IBS, thus leading to low IBSA.

Therefore, our study intends to examine these dimensions: Internet technology literacy, resistance to technology, risk of technology, anxiety of technology, information on technology, and the influence on IBSA. In addition, some customers view technology as a threat because it requires change, and technology conflicts with their prior beliefs. This is because they may be committed to an old way of doing business and the technology may create a high degree of change in their routines leading to low IBSA in Iraq. This study adds these factors to examine their impact on IBSA. The researcher proposes a new model including two types of variables, as follows:

(1) Exogenous variables: PU, PEOU, compatibility, trust, third party support in terms of social recommendation, and prestigious media. Internet technology literacy, resistance to technology, risk of technology, anxiety about technology, information on technology, self-efficacy, government support and technology support.

(2) Endogenous variables: Attitude, subjective norm, PBC, and IBSA.

Figure 3.1 illustrates the framework model that will be developed for this study. This model shows IBSA as the main endogenous variable with four antecedents: attitude, subjective norm, PBC, and individual factors of technology (Internet technology literacy, resistance to technology, risk of technology, anxiety about technology, and information on technology). Attitude has four antecedents: PU, PEOU, compatibility, and trust. There is one dimension of subjective norm, which is a third party support in term of social recommendation and prestigious media. The research model also shows that there are three antecedents for PBC: self-efficacy, government support and technology support.

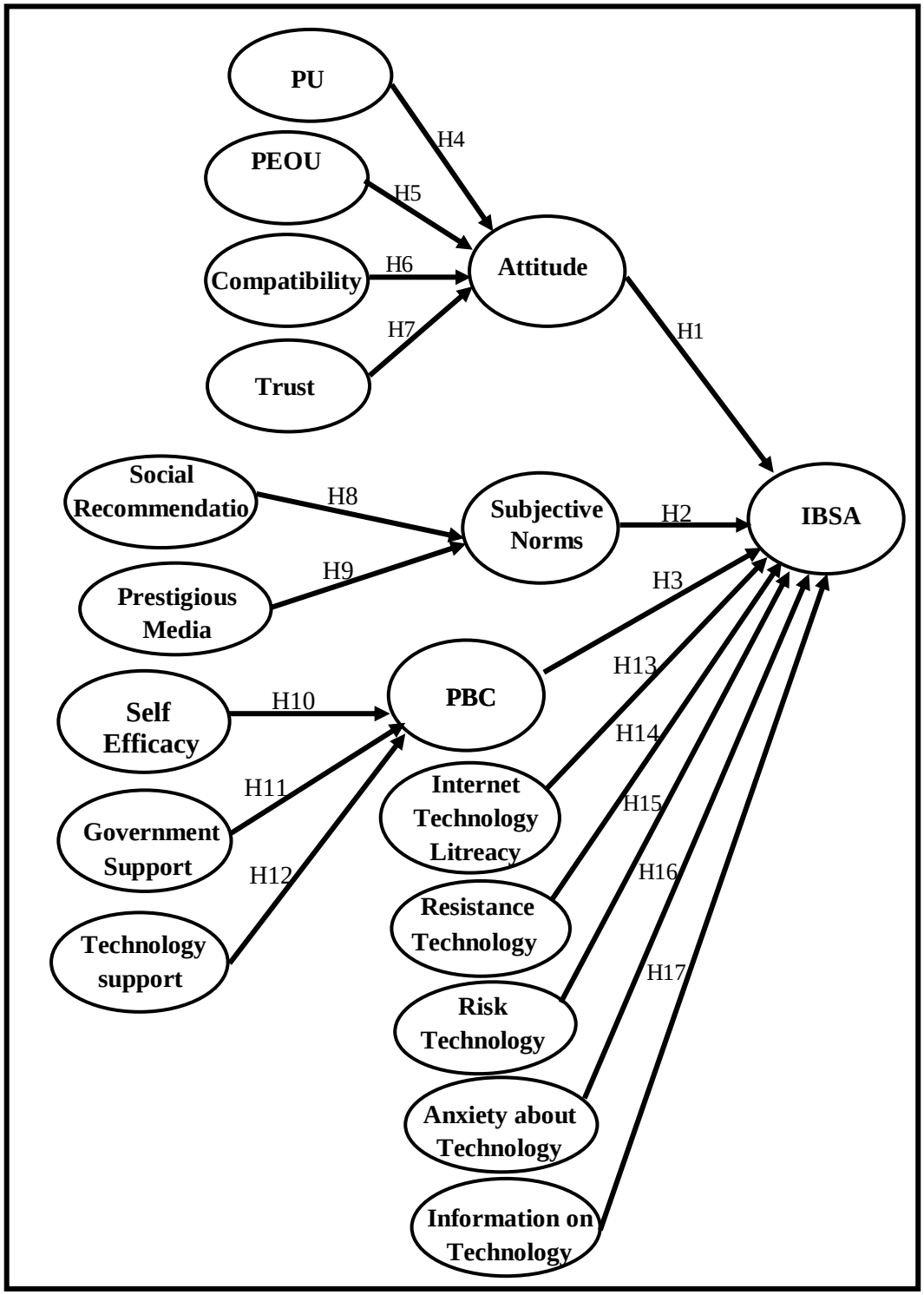

Figure 3.1
Theoretical framework

3.2HYPOTHESES/PROPOSITIONS DEVELOPMENT

A hypothesis is a formal proposition of the logically guessed relationship between two or more variables, which is based on the theory of theoretical framework that is empirically testable to find the expected solution to the problem statement (Sekaran & Bougie, 2010; Zikmund, Babin, Carr, & Griffin, 2010). The main argument of present study is that successful IBSA implementation could lead to adopt of Internet banking continuity, consequently, there are causal relationships among core requirements of IBSA implementation, which were tested under PLS-SEM (see Figure 3.1). In this section, the researcher will provide the literature that supports these relationships together with the development of hypotheses that define the causal relationships. In the development of the hypotheses, the word 'influence' is used to reflect the fact that when there is a change in one variable, it will have impact on the other whenever applicable. Therefore the following paragraphs discuss each relationship between the constructs of the present study.

3.2.1 The Relationship between Attitude and IBSA

An attitude towards adopting an innovation is derived from an individual's beliefs that adopting the innovation will lead to certain consequences (Ajzen & Fishbein, 1980). It indicates an individual's positive or negative evaluations about performing the behavior. Ajzen (1991) advocates that attitude is a product of belief about a behavior and the individual's evaluation of the outcome resulting from that behavior. As mentioned in the underpinning theory of DTPB model, and as can be seen in Figure 2.5, this linkage was excluded, because most of the previous studies examined the relationship between attitude and behavioral intention. However, only a few past studies found that attitude is a more accurate predictor of behavior than behavioral

intention (Bentler& Speckart, 1979; Albrecht & Carpenter, 1976). The influence of attitude on the individual's behavior to use information technology has been theorized and validated by five studies (AL-Majali & Mat, 2010b; Shi *et al*., 2008; Martinez Guerrero *et al*., 2007; Ndubisi & Sinti, 2006; Karjaluoto *et al*., 2002). Based on the finding have found by Ibrahim (2012), the variables that affect the behavioural intention can also be tested as the factors that affect the actual usage behavior.

However, most prior studies were conducted outside the Middle East countries, and not much was done in Iraq. Therefore, this study intends to fill this gap by examining customer's attitude toward IBSA in DTPB theory in the Iraqi context. Based on the previous discussions and the literature in Chapter two, the conceptual relationship between attitude and IBSA is positive. Given that, the researcher hypothesizes that:

H1: Attitude has significantly and positively influences IBSA.

3.2.2 The Relationship between Subjective Norm and IBSA

Subjective norm refers to an individual's perceptions of the social pressure to engage in a certain behavior. The idea suggests that attitudes and beliefs of others in groups to which an individual belongs will shape his or her behavior toward the usage of a specific technology (Ajzen 1991). In spite of the original (TRA, TPB and DTPB) models that discussed the relationship between subjective norm and behavioral intention, there are very few empirical studies which examined the relationship between subjective norm and IBSA (Shi *et al*., 2008; Duda *et al*., 2007; Hernandez & Mazoon, 2007).

There is inconsistency in the results in previous studies in IBSA settings; some of the previous studies found a significant relationship between subjective norm and IBSA (Shi et al., 2007; Hernandez &Mazoon, 2007), while a few studies found that there is an insignificant relationship (Duda *et al.*, 2007; AL-Qisie, 2008). Furthermore, based on the discussions in previous paragraphs and the literature in Chapter two, this study will include the direct path as another important antecedent for IBSA. Based on literature and in comparison, there is no study conducted in Iraq related to IBSA settings to examine the relationship between subjective norm and IBSA. The conceptual relationship between subjective norm and IBSA is positive. Given that, the researcher hypothesizes that:

H2: Subjective norm has significantly and positively influences on IBSA.

3.2.3 The Relationship between Perceived Behavior Controland IBSA

Perceived behavioral control refers to one's perception of the ease or difficulty of performing the behavior of interest (Ajzen, 1991; Ajzen & Madden, 1986). It reflects one's beliefs regarding access to the internal (e.g., ability and self-efficacy) and external factors (e.g., time and money) that may impede performance of the behavior.. According to DTPB model, PBC may directly influence the actual usage by intensifying the efforts to help with the achievement of goals (Taylor & Todd, 1995).

Based in literature, there are few previous studies regarding the relationship between PBC and actual behavior in different areas (Gopi & Ramayah, 2007; Fusilier &Durlabhji, 2005; Pedersen & Nysveen, 2004, George, 2004). In contrast, there are very few past studies that were done to examine the relationship between PBC and

actual IBSA settings.

Beside that, there is inconsistency in the results revealed in previous studies about PBC and actual behavior relationship; some previous studies found a significant relationship between PBC and actual behavior (Gopi & Ramayah, 2007; Fusilier & Durlabhji, 2005; George, 2004) ,while few studies found that there is an insignificant relationship (Pedersen & Nysveen, 2004). Based on past discussions, the following hypothesis is proposed:

H3: Perceived behavior control has significantly and positively influences IBSA.

3.2.4 The Relationship between Perceived usefulness and Attitude

The PU refers to the degree to which an innovation is perceived as being better than its precursor (Rogers, 1995). It reflects one's assessment of the extrinsic benefits received when the innovation is adopted or used.The link between perceived usefulness and attitude has been supported by numerous studies related to IT usage (Davis *et al*., 1989; Moore & Benbasat, 1991; Taylor & Todd, 1995; Plouffe, Hulland &Vandenbosch, 2001; Baron & Harris, 2006; Hernandez & Mazzon, 2007; Gounaris & Koritos, 2008). Moreover, the link between perceived usefulness and attitude has been supported by numerous studies related to IT usage(Al-Somali *et al*., 2009; Lee, 2009; Celik, 2008; Jahangir & Begum, 2008; Cheng *et al*., 2006; Lai & Li, 2005 Eriksson *et al*., 2005; Curran & Meuter, 2005; Chau & Lai, 2003).

However, most of these studies were conducted in western countries and out of the Iraqi context. In addition, despite the fact that most of the studies found a significant relationship between PU and individual attitude toward IBSA, one study found this

relationship to have an insignificant effect (Curran & Meuter, 2005). Morover, studies by Gerrard and Cunningham (2003) and Sohail and Shanmugham (2003) revealed that the adopters of Internet banking have more positive attitude toward the technology compared to non-adopters. They found the adopters perceived the service to be convenient. Given that, we theorize the influence of PU and customer's attitude as follows:

H4: Perceived usefulness has significantly and positively influences attitude toward IBSA.

3.2.5 The Relationship between Perceived Ease of Use and Attitude

PEOU is "the degree to which a person believes that using a particular system would be free of physical and mental effort" (Davis, 1989, p.320). Davis (1989) indicated that customers will be more willing to adopt the new technology, when he or she perceives the ease of its use.

Actually, the effect of perceived ease of use on individual's attitude toward IBSA has been theorized and validated by numerous studies(Al-Somali *et al*., 2009; Celik, 2008; Jahangir & Begum, 2008; Nor & Pearson, 2007; Cheng *et al*., 2006; Lai & Li, 2005; Curran & Meuter, 2005; Eriksson *et al*., 2005). However, there are inconsistent findings produced in past studies, for example, some of them found a significant influence (Al-Somali *et al*., 2009; Celik, 2008; Jahangir & Begum, 2008; Lai & Li, 2005), while others reported an insignificant relationship (Nor & Pearson, 2007; Cheng *et al*., 2006; Curran & Meuter, 2005; Eriksson *et al*., 2005). Additionally, there is no study which took into account PEOU in IBSA setting in Iraq as an antecedent of customers' attitude. Thus, based on the above discussion, we also

hypothesize those individuals who perceive Internet banking as easy to use will have a positive attitude toward using the technology as follows:

H5: Perceived ease of use has significantly and positively influences attitude toward IBSA.

3.2.6 The Relationship between Compatibility and Attitude

The compatibility is the degree to which an innovation is apparent as being reliable with the existing values, past experiences, and needs of potential adopters. An idea that is mismatched with the values and norms of a social system will not be adopted as quickly as an innovation that is compatible. Overall, the Internet can be considered as part of our everyday life. Indirectly, our daily usage of the Internet, in addition to factors such as parking and long hours of work, will encourage us to perform transactions electronically. In the long run, performing transactions online is expected to become part of our everyday life. Several studies have investigated the link between compatibility and the prior studies have inconsistent findings for the relationship between compatibility and customer's attitude (Eriksson *et al*., 2008; Nor & Pearson, 2007; Nudbisi & Sinti, 2006; Shih & Fang, 2004; Tan & Teo 2000; Liao *et al.*, 1999). However, the prior studies have inconsistent findings for the relationship between compatibility and customer's attitude; some of them found significant impacts (Eriksson *et al*., 2008; Nudbisi & Sinti, 2006; Tan &Teo, 2000; Liao *et al*., 1999), while few studies found that there is an insignificant relationship (Al-majali& Mat, 2010a; Nor & Pearson, 2007; Shih & Fang, 2004).

In line with the argument and findings discussed above, we would expect individuals who perceive Internet banking as compatible with their values will likely have a positive attitude towards using the technology. This leads us to the sixth hypothesis:

H 6: Compatibility has significantly and positively influences attitude toward IBSA.

4.2.7 The Relationship between Trust and Attitude

Trust is willingness to rely on exchange partners in whom one is confident(Doney, Cannon and Mullen, 1998). Trusting online activities is very important, and is a key to e-commerce development (Abushanab *et al*., 210; Suh & Han, 2002).According to Alsajjan & Dennis (2006), trust is even more vital for online banking compared to offlin. Several of the previous studies asserted that trust is the most important factor positively influencing customer's attitude toward using IBS (Mansumitrchai & Chiu, 2012; Jahangir & Begum, 2008; Jahangir & Begum, 2008; Nor & Pearson, 2007; Cho & Cheung, 2003; Suh& Han, 2002).

Moreover, Fishbein and Ajzen's TRA model asserts that attitude toward a behavior is determined by relevant beliefs (Davis, Bagozzi, & Warshaw, 1989). Trust is my confident belief in my favorable expectations about what the other party will do, based on our previous interactions (Gefen, 2000). Grazioli and Jarvenpaa (2000) argued that customers' attitudes are determined by their trust.

However, the main reason to study this linkage is the fact that few such empirical studies have been found in the Iraqi setting that examined the relationship between trust and customer's attitude toward IBSA. Therefore, the conceptual relationship

between trust and customers' attitude is positive based on previous studies and past literature (see Chapter three). Thus, this study hypothesizes a positive relationship as follows:

H 7: Trust has significantly and positively influences attitude toward IBSA.

3.2.8 The Relationship betweenThird party support in terms of social recommendation and Subjective Norms.

The eighth hypothesis represents the linkage between social recommendation and subjective norm. The individuals prefer to turn to friends, family members, or colleagues for assistance rather than to strangers or formal agencies (Zhou & Tian, 2010; Nilsson, 2007; Amato, 1990; Burke & Weir, 1975; Croog et al., 1972). It has been found by online practices research that relatives, colleagues, and friends can affect individuals to form acceptance decision (Limayem et al. 2000; Parthasarathy and Bhattacherjee, 1998). Furthermore, many behavioral researchers considered social recommendation (i.e., friends, family members and colleagues or peers) as one of the behavioral subjective norms that has an influence upon the individuals' behaviors (Taylor & Todd 1995).

Most previous studies found that this factor has significant effect on subjective norm. Moreover, in non-IBS setting, there are also some past studies that found it to be significant (Ng & Rahim, 2005; Taylor & Todd, 1995). In contrast, Chu and Wu (2004) found it to be insignificant. However, the main reason to study this linkage is the fact there are few previous studies in Iraqi IBSA settings. The conceptual relationship between social recommendation and subjective norm is positive based on previous studies and past literature (see Chapter two). Thus, this study

hypothesizes a positive relationship as follows:

H8.Third party support in terms of social recommendation has significantly and positively influence subjective norm.

3.2.9 The Relationship between Third party support in terms of prestigious media and Subjective Norms.

The ninth hypothesis represents the linkage between prestigious media and subjective norm. Several the previous studies were conducted in different settings (Zhou & Tian, 2010; Woon & Kankanhalli, 2007; Ng & Rahim, 2005; Pederson & Nysveen, 2004; Fogelgren-Pedersen, 2003; Battacherjee, 2000).

Furthermore, the researcher has not found any study in the context of Iraq in IBSA setting that investigatedbetween prestigious media and subjective norm toward IBSA. There is a positive relationship between prestigious media and subjective norm as shown in past studies (see Chapter two).Given that, the researcher theorizes the influence of prestigious media and subjective norm toward IBSA as follows:

H9. Third party support in terms of prestigious media has significantly and positively influences subjective norm.

3.2.10 The Relationship betweenSelf-Efficacy and Perceived behavior control

Self-efficacy refers to the Judgment of one's ability to use a computer to accomplish a particular job or task (Compeau and Higgins, 1995, p. 191).The effect of self-efficacy on perceived behavioral control has been supported by several studies (Suki & Ramayah, 2010; Nor & Pearson, 2008; Shih & Fang, 2004; Tan & Teo, 2000).

While few past studies found it to have insignificant effect (Dauda *et al.*, 2007; Woon & Kankanhalli, 2007).

Therefore, the important issue that led to the inclusion of this factor is due to several previous studies in IBSA setting introduced inconsistent results. Beside that, there are few studies that have been investigated in Middle East in general and in Iraqi, specifically, in IBSA setting. The conceptual relationship between self-efficacy and PBC is positive. In line with the argument and findings discussed above, the researcher hypothesizes the relationship as follows**:**

H10: Self-efficacy has significantly and positively influence perceived behavior control toward IBSA.

3.2.11 The Relationship between Government support and Perceived behavior control

Goh (1995) indicated that resource facilitating conditions (government support) plays important role in the innovations diffusion process and technology existence.The effect of resource facilitating conditions (government support) on perceived behavioral control has been supported by several studies (Ndubisi *et al.*, 2004; Teo & Pok, 2003). In contrast, some of other studies found that the relationship between government support and PBC were an insignificant relationship (Hernandez & Mazzon, 2007; Tan & Teo, 2000).

Given that, the previous studies have inconsistent and limited conducted in Arab countries in general, and in Iraq in particular in IBSA settings. Consequently, this study includes government support as important factors of PBC toward IBSA

transformation. In line with the argument and findings discussed above, the researcher hypothesizes the relationship as follows:

H11: Government support has significantly and positively influences perceived behavior control toward IBSA.

3.2.12 The Relationship between Technology support and Perceived behavior control

Technology support refers to the Effort of providing the suitable infrastructure, the needed appliances, Internet access and software for using the technology (Goh, 1995). Technology support positively affects the flexibility of the technology services, internet services and IBS, thus enabling the customers to use and adopting IBS. Technology has the advantage of allowing users to easily utilize the technology services with more flexibility (Shih & Fang, 2004; Ndubisi *et al*., 2004). Technology support positively affects the flexibility of the technology services, internet services and IBS, thus enabling the customers to use and adopting IBS.

However, there are few studies in IBSA setting in Iraq to examine the influence of technology support on PBC. According to past studies, there is a positive relationship between technology support and PBC. In this is regard, the conceptual relationship between technology support and PBC is positive. The researcher hypothesizes the relationship in this study as follows:

H12: Technology support has significantly and positively influences perceived behavior control toward IBSA.

3.2.13 The Relationdhip between Individual Factors of Technology and IBSA

With regards to individual factors of technology on IBSA, it is important to understand usage as the dependent variable, and present the basic conceptual framework underlying the class of models to explain individual acceptance of information technology which will be the basis of this research. Examining the factors underpinning usage behavior is crucial to increase the take-up rate of Internet banking as shown in literature review (see Chapter two).

Most of the past studies were conducted in different settings (Ibrahim, 2012; Avirutha, 2012; Lu et al., 2011; Mallat, 2007;Al-Gahtani, 2004; Pavlou, 2003;Warkentin *et al*., 2002; Thatcher & Perrewe, 2002; Sathye, 1999; Harrison &Rainer,1992; Zmud, 1979), while there is no study that took up this dimension, i.e., individual factors of technology (internet technology literacy, resistance to technology, risk technology, anxiety of technology, and information on technology) in IBS setting generally. However, the researcher has not found any study in Iraq in IBSA setting that included this dimension as an antecedent of IBSA. As long as the IBS is a kind of online technology services, this study stresses the importance of these factors to assess the influence of the individual factors of technology upon the consumers' behavior when it comes to IBSA.

Consumer behavior in the adoption of IB may parallel aspects of online consumer behavior in general. Li et al. (1999) found that knowledge and experience of the internet channel, has a key influences on online consumer behavior. Based on previous studies as shown in the literature (Avirutha, 2012; Nasri, 2011; Lassar, 2005; Karjaluoto *et al*., 2002), Internet technology literacy (prior experience with

technologies) directly influence both attitudes towards online banking and actual behaviors. Consequently, the following hypothesis is proposed:

H13: Internet technology literacy has significantly and positively influenceon customers' adoption of Internet banking.

The fourteenth hypothesis reflects the relationship between user resistance to technology and IBSA. User resistance to technology is the most critical factor that inhibited the adoption of technology (Nov & Ye, 2009). According to Dewan, Lorenzi, and Zheng (2004), user resistance prevented technology adoption. In the context of Internet, and telephone banking, brick and mortar branches are the existing modes of transacting banking business. Adoption of new technologies often results in a certain amount of resistance to change from present ways of operating. Daniel (1999) found in his study that there is a high level of customers' inertia in changing their established banking activities to online banking. According to Quinn and Mueller (1982), human beings are what they are; they tend to resist changing. Given that, the researcher hypothesizes that:

H14: Resistance to technology has significant impact on customers' adoption of Internet banking.

Personal risk is because of potentially unsafe products and services. The perceived risk associated with on-line transactions may reduce perceptions of behavioral and environmental control, and this lack of control is likely to negatively influence transaction usage. However, consumers are likely to transact on-line if their risk perceptions about behavioral and environmental uncertainties are alleviated, so that they gain control over their on-line transactions. Additionally, the consumers believe

that the complicated nature of technology creates user stress and risk of technology use.TRA predicts that consumers would be willing to transact if their risk perceptions were low. The fifteenth hypothesis reflects the relationship between risk of technology and IBSA. However, there is few empirical study conducted in IBSA setting in Iraq as yet. Therefore, to fill this gap this study intends to examine the level of the perceived risk of technology and customers' influences toward IBSA directly. It is expected that risk propensities will have a negative and direct effect on IBSA:

H15: Risk of technology has significantly and negatively influences on customers' adoption of Internet banking.

Individual anxiety is an important factor for technology implementation because anxiety is often one of the main reasons a technology adoption fails (Venkatesh, *et al.*, 2003).We hypothesize here that anxiety will influence IBSA based on the social cognitive theory (SCT) literature and the work of Harrison and Rainer (1992).The sixteenth hypothesis reflects the relationship between anxiety of technology and IBSA:

H16: Anxiety about technology has significantly and negatively influence on customers' adoption of Internet banking.

The important factor that consumers consider before adopting is the amount of information they have about IB. In this context, Sathye (1999) said that it is a major factor impacting adoption. Hence, for IBSA, it is necessary that the banks ensure the consumers are aware about the availability of IBS and explain it benefits over other products. For e.g., promotions via marketing advertisements, web sites, branches and other promotional tools, will have a positive effect on consumers' IBSA. Hence, the

researcher posits that:

H17: The amount of Information on internet banking has significantly and positively influence on customers' adoption of Internet banking.

To answer the research questions and achieve research objectives of the present study, Zikmund *et al*. (2010) argued that the hypotheses of research should be related to the research questions and research objectives. Table 3.1 illustrates the logical link between the research questions, research objectives and hypotheses of the present study.

Table 3.1
Research Question, Research Objective, and Hypotheses of Research

Research Question	Research objective	Hypotheses of Research
What are the most important factors that determine customers' perception toward IBSA in Iraq?	To identify the most important factors that determines customers' perception toward IBSA in Iraq?	H1-Attitude has significantly and positively influences IBSA H2-Subjective norm has significantly and positively influences IBSA H3-Perceived behavior control has significantly and positively influences IBSA. H13-Technology and Internet literacy has a significantly and positively influence on customers' IBSA. H14- : Resistance to technology has significant impact on customers' adoption of Internet banking. H15-Risk of technology has significantly and negatively influence on customers' IBSA. H16-Anxiety of technology has significantly and negatively influence on customers' IBSA. H17-The amount of Information on internet banking has significantly and positively influence on customers' IBSA.

Table 3.1*(Continued)*

What are the significant factors of attitude toward IBSA in Iraq?	To investigate the significant factors of attitude toward IBSA in Iraq.	H4-Perceived usefulness has significantly and positively influences attitude toward IBSA. H5-Perceived ease of use has significantly and positively influences on attitude toward IBSA. H6-Compatibility has significantly and positively influences attitude toward IBSA. H7-Trust has significantly and positively influences attitude toward IBSA.
What are the significant factors of subjective norm toward IBSA in Iraq?	To investigate the significant factors of subjective norm toward IBSA in Iraq.	H8-Third party support in terms of social recommendation has significantly and positively influences subjective norm. H9-Third party support in terms of prestigious media has significantly and positively influences subjective norm
What are the significant factors of perceived behavior control toward IBSA in Iraq?	To investigate the significant factors of perceived behavior control toward IBSA in Iraq.	H10-Self-efficacy has significantly and positively influences perceived behavior control toward IBSA. H11-Government support has significantly and positively influences on perceived behavior control toward IBSA. H12-Technology support has significantly and positively influences on perceived behavior control toward IBSA.
How can the underpinning theory of DTPB be used to explain IBSA in Iraq?	To evaluate the applicability of DTPB to explain the antecedents of IBSA in Iraq.	H1,H2,H3,H4,H5,H6,H8,H9,H10,H11, H12.

3.3 Hypothesis Summary

The Table 3.2 shows the summary of hypotheses for this study based on Research Framework that illustrated in Figure 3.1.

Table 3.2

Summary of hypotheses

No.	Hypotheses
H1	**Attitude has significantly and positively influences IBSA.**
H2	**Subjective norm has significantly and positively influences IBSA.**
H3	**Perceived behavior control has significantly and positively influences IBSA.**
H4	**PU has significantly and positively influences attitude toward IBSA.**
H5	**PEOU has significantly and positively influences attitude toward IBSA.**
H6	**Compatibility has significantly and positively influences attitude toward IBSA.**
H7	**Trust has significantly and positively influences attitude toward IBSA.**
H8	**Third party support in terms of social recommendation has significantly and positively influences subjective norm.**
H9	**Third party support in terms of prestigious media has significantly and positively influences subjective norm.**
H10	**Self-efficacy has significantly and positively influence perceived behavior control toward IBSA.**
H11	**Government support has significantly and positively influences perceived behavior control toward IBSA.**
H12	**Technology support has significantly and positively influences perceived behavior control toward IBSA.**
H13	**Technology and Internet literacy has a significantly and positively influence on customers' adoption of Internet banking.**
H14	**Resistance to technology has significant impact on customers' adoption of Internet banking**
H15	**Risk of technology has significantly and negatively influence on customers' adoption of Internet banking.**
H16	**Anxiety of technology has significantly and negatively influence on customers' adoption of Internet banking.**
H17	**The amount of Information on internet banking has a significantly and positively influence on customers' adoption of Internet banking.**

3.4 RESEARCH DESIGN

The research design depends on making a strategic plan that includes specific methods and procedures for collecting and analyzing the required data about a study population to arrive at a solution for the problem statement (Sekaran & Bougie, 2010; Zikmund *et al*., 2010). For this study, the researcher employed a quantitative data collection method using the surveyapproach to collect data concerning the usage of internet banking by banks customers.

In the domain of methodology, there are two main research approaches, namely positivist (Hussey and Hussey, 1997), and interpretivist (Mingers 2001). Positivist approach is widely known as a scientific approach and it is quantitative in nature while the interpretivist approach is commonly known as a qualitative approach. However, both philosophical approaches have positive and negative impacts on different context of research in one way or another but the main concern is the same (Bryman, 2001).The quantitative research approach is based on deductive reasoning. A postulate is set a priori, and data is gathered to test the validity of the hypothesis. While qualitative research is based on induction,data is collected and examined, and theories are built on the evidence extrapolated from that data. The table 3.3 provides a summary of the main differences between these two approaches.

Table 3.3
Main features of positivistic and interpretivist research paradigms

Positivist	Interpretivist
Uses large sample size	Uses small sample size
Researcher does not get involved into problem domain	Researcher gets involved into the problem domain
The location is artificial	The location is natural
Data is precise and specific	Data is subjective
It is concerned with testing hypothesis It is concerned with developing theories Generalises from sample to population	Generalises from one setting to anothersetting

The positivism believes that research can be conducted byusing well developed hypotheses, which are derived from the literature or existing theory,and are tested and requiring large number of sample selected randomly (Bambale, 2014), thus positivism focuses on quantifiable observation of phenomenon as well as generalizing about the phenomenon through statistical analysis.

The quantitative research is defined as a type of research in which phenomenaare explained by collecting and analyzing numerical data using statistically based methods (Creswell, 1994). This approach tends to view reality as objective and something that can be measured and uncovered by a neutral researcher (Gall *et al*., 2007; Lichtman, 2006). This stance has also been named positivism; a term associated with the French philosopher Auguste Comte in the first half of the nineteenth century and has been used through to the current day, and historically it has been the dominant paradigm in research inquiry (Cohen *et al*., 2007). The positivist paradigms rely on a host of scientific methods that produce numeric and alphanumeric data (Orlikowski & Baroudi, 1991). Hussey and Hussey (1997) pointed out that the positivistic paradigm is related with the facts or causes of social phenomena. In this research paradigm, investigators apply the language of theories, variables, and hypotheses. Being a scientific approach, it deals with the numbers in an objective fashion and applies statistical tools for data analysis.

According to positivistic school of thought, researchers need to remain disinterested by keeping their biases aside, and being emotionally uninvolved with the objects and participants of study (Tashakkori & Teddlie, 1998). These seem to be appropriate for the current study, because the purpose of the concerned study was to develop

hypotheses and investigate the influence of factors on usage of internet banking by assess customer's banks behavior towards IBSA. In the current study, the positivist was mainly adopted for these reasons.

1. In social science research, positivists claim objectivity, rationality, and the presence of a replicable term. In relation to the current research, these trends and traits of positivists' research are primary to the main objectives of this study. The researcher will re-use a method used by researchers in different regions of the world, which will meet this study's requirements.

2. Positivist research is very methodological (Koch & Harrington, 1998), and based on values, like rationality, prediction, objectivity and control (Streubert *et al.*, 1999), which are suitable for this study. The quantitative approach will be used to analyze customer's banks attitudes, towards IBSA. Hypothesis testing will also be used on a relatively large sample, so that the findings can be generalized to all customers of the banks. Both objectivity and control are necessary in this research for many reasons. The first one is to avoid prejudice by banks customers on the topic of IBSA, which will be based on their opportunity. The second is to collect data, which will be statistically and objectively analyzed. Then, all participants will be assessed using the same instrument under the same conditions.

Moreover, to meet the research objectives, such as the one specified in the present study, the use of a quantitative approach is considered suitable. Quantitative research is a formal, objective, systematic process used to describe and investigate the expected causal relationships and compute interaction effects among variables (Burns & Grove, 2005). Therefore, the quantitative approach to data analysis can be of great value to the researcher looking for significant results from data collected. In

addition, the approach allows for a summary of the analysis results in numeric statistical values to provide a high degree confidence (Alexei, 2002; Zikmund *et al*., 2010).

3.5SAMPLING METHOD

Sampling is the process of selection in which a number of individuals arechosen for a study in such a way that they may represent larger population to whichthey belonged. According to Gay and Airasian (2000), the aim of sampling is to getinformation about the population by using the sample. The more the selected sample represents the population, the more the research results are to be found generalisable to the population.According to Sekaran (2003), there are two techniques of sampling, namely probability sampling and non-probability sampling. In current study employed the probability sampling. This technique provides everyindividual an equal opportunity/chance of being selected as the sample object (Sekaran, 2003). One of the major benefits of this sampling technique is that there is no bias of the researcher against the choice of sample objects (Salkind, 2003). The technique is also regarded for high generalizability (Cavana, Delahaye & Sekaran, 2001). The main purpose of the probability samples in quantitative studies is to achieve representativeness to the extent in which the sample accurately represents the entire population.

The next sections will explain the background information of the Iraqi public universities through provides a discussion on the population, sampling frame, sample size and distribution of questionnaire to respondents.

3.5.1 Population

Population of the study refers to the entire group of people, events or things of interest that the researcher wishes to investigate (Sekaran & Bougie, 2010). The focus of this study is on employees who are working in public universities in Iraq. Since employees of public universities in Iraq have bank accounts and are using the IBS (Al-majali & Mat, 2010b; Akinci *et al*., 2004), they have been chosen as the respondents of this study. Iraqi public universities are located in all regions geographically, with universities in the Middle, North, and South (Mohesr, 2012). Other reasons are:

1- The Credit Bank of Iraq (2013) confirms many public university staff is IBS customers.

2- The public university employees are divided into three categories (Academic staff, technical, and administrative staff), receiving salary, according to their qualification and experience (Mohesr, 2012). Choosing all categories will provide a comprehensive sample.

3- Staff of public universities receive higher pay compared to other Iraqi employees (Parliament, 2008) are more likely to be IBS users (Ismial & Osman, 2012).

4- Since the Iraqi Higher Education Ministry credits the staff salary directly to their bank accounts, all staff are likely to have opened accounts in licensed banks in public universities (LAD-MOHE, 2012; Qicard, 2012).

5-Universities in Iraq have good internet infrastructure: wireless fidelity (WI-FI) services, Digital Subscriber Line (DSL), land line services, and Wireless Broad Band (WBB) (MOC, 2013). Thus, it is likely university staff are internet savvy.

6- It will be easy to obtain a list of employees for purposes of sampling.

3.5.2 Sampling Frame

A sample frame is constructed from decisions about the population elements to be selected (Sekaran & Bougie, 2010). As such, and after the respondent had been determined of the type, the task of getting the number of public universities in Iraq was based on statistics from the Ministry of Higher Education and Scientific Research in Iraq (Mohesr, 2012). These statistics indicate that Iraq has nineteen public universities distributed in all regions of the Republic (Mohesr, 2012), as shown in Table 3.4. To determine the number of employees in the public universities, database belonging to the statistics section in this Ministry was used. There are about eighty two thousand (82,000) employees distributed among nineteen universities as shown in Table 3.4 (Mohesr, 2012).

Table 3.4

Distribution of public universities in Iraq andNumber of Employees for each university

Name of Region	Name of university	Foundation Year	Number of Employees	Number of universities per region
Middle	1-University of Baghdad	1958	12285	10
	2-University Mustansiriyah	1963	6386	
	3-University Technology	1975	5215	
	4-University of Kufa	1987	4372	
	5- Wasit of university	1987	3989	
	6-University of Anbar	1987	3153	
	7-University of Aliraqia	1989	2839	
	8-University of Babylon	1991	4900	
	9-Alnahrain University	1993	4571	

Table 3.4*(continued)*

	10-University of Kerbala	2002	3102	
North	11-University of Diyala	1998	3643	4
	12-University of Mosul	1967	6838	
	13-Tikrit University	1987	3484	
	14-Kirkuk University	2003	1880	
South	15-University of Basrah	1967	7400	5
	16-Thi-Qar University	2002	2109	
	17- Alqadisiayah University	2003	2007	
	18-University of Misan	2007	1579	
	19-Almuthanna university	2007	1769	
Total			81521	19

As shown in Table 3.5, the number of public universities and the number of employees for each university (population of the sample) is divided into three main categories based on the geographic regions (Middle, South and North). The study being reported drew samples from three geographic regions, hence, the need for stratified randam sampling. Stratified randam sampling can either be proportionate or disproportionate. It is proportionate when the subjects are drawn from each stratum according to a specific percentage. While, it is disproportionate when the subjects are drawn from each stratum without regard to any specific percentage but number of the elements contained in each stratum (Bambale, 2014). This study adopted the proportionate sampling procedure. Since this type of sampling design explain more information related to sample size, hence it is considered more appropriate for this study.

Table 3.5

Number of university employees, according to the region

Region Name	Number of university	Number of employees
Middle	10	(50812)
North	4	(15845)
South	5	14864

Then, as mentioned previously the proportionate sampling was applied to determine the number of universities and number of sample employees that will enter into the sample scope for the present study (Table 3.6).The number of universities in the Middle region is the highest and the number of employees therein also scored the highest with around 62% of the total employees in all the universities. This is followed by the Southern region with 18%, and then lastly the Northern region with 20%.This is based on all universities in one region according to a specific percentage.

Table 3.6:

Proportions of the sampling universities and the percentage sampling

Region Name	No. of public University	Probability sampling of universities	Number of employees	%Percentage of sampling
Middle	10	6	50812	62%
North	4	1	15845	20%
South	5	1	14864	18%
Total	19	8	81521	100%

According to the above Table 3.6, the probability sampling for the Middle region is six universities out of ten and one university for each of the Northern and Southern

regions out of four and five respectively. The picking out the names of the universities by writing their names on small pieces of paper from a cup then the choosing of them by randomly.This type of choosing was also applied on the probability for South and North regions. The results of the universities names for the Middle region were University of Babylon, University Technology, University of Kerbala, University of Kufa, University of Anbar, and University Mustansiriyah. AlqadisiayahUniversity was the result for the South region and Tikrit University for the North region.

3.5.3 Sample Size

Sample size can be defined as the subset of a population required to ensure significant results (Sekaran & Bougie, 2010), and the role of sample size is crucial in all statistical analysis. According to Luck and Rubin (1987), the more sophisticated the statistical analysis the larger the sample size needed. Therefore, the sample size requirement in this study was based on the selected statistical analysis technique used that is, structural equation modelling (SEM). SEM, like other statistical technique, requires an appropriate sample size in order to obtain reliable estimates (Hair *et al*., 2006). According to Zikmund *et al*. (2010), researchers rarely study the entire population due to inherent difficulties in collecting data and examining all the elements in the population under study. Hence, they must choose the appropriate sample size from the population.

As mentioned earlier, there are around eighty two thousand (82,000) employees in all the public universities in Iraq. Therefore, for the population between 75,000 and 1000,000, Table 3.7 shows that 382-384 employees are suitable. This study will

select 384 employees as the sampling size (Sekaran and Bougie, 2009; Krejcie & Morgan, 1970; Cohen, 1969).

Table 3.7
Determining Sample Size of a Given Population

N	S
10000	370
15000	375
20000	377
30000	379
40000	380
50000	381
75000	382
1000000	384

Source: Sekaran and Bougie (2009.p, 295), N= is population size, S= is sample size

According to Sekaran and Bougie (2009, p. 295), 384 samples are targeted to be technically acceptable. In addition, the larger the sample size, the more flexibility is provided to the researcher in determining suitable response (Sekaran, 2003). For this reason, the researcher duplicated the sample size determined according to Table 3.7. Therefore, 768 (384 + 384) respondents were used as the sample size. Moreover, the results that are derived from a large sample could be generalized to the whole population (Hair *et al*., 2006). Based on this evidence, the researcher will used eight hundred (800) as the numbers of the samples.

Probability sampling of employee = NP * NS /T

(NP= Number of employees in each region; NS= Number of sample to be distributed; T= the total of the employees in all universities).

Table 3.8
The Probability sampling of employees for each university

Region	Number of employees	%of sampling	Probability sampling of employee
Middle(6 uni)	27128	83%	665
South(1uni)	2007	06%	49
North(1uni)	3484	11%	86
Total	32619	100%	800

From Table 3.8, the number of questionnaires to be distributed for each region is displayed. For the Middle region, 665 questionnaires will distributed in six universities - University of Babylon, University Technology, University of Kerbala, University of Anbar, University of Kufa, and University Mustansiriyah, 49 in AlqadisiayahUniversity in the south region and 86 in Tikrit University in the Northern region. Table 3.9 explains how many questionnaires should be distributed for each university.

Table 3.9
Number of questionnaire for each university

Name of the University	**No of employees**	**Number of respondents**
University of Babylon	4900	120
University Technology	5215	128
University of Kerbala	3102	76
University of Anbar	3153	77
University of Kufa	4372	107
University Mustansiriyah	6386	157
AlqadisiayahUniversity	2007	49
Tikrit University	3484	86
Total	32619	800

3.6 QUESTIONNAIRE DESIGN

Designing a questionnaire requires both artistic as well as scientific skills andexperience (Malhotra, 1999). The questionnaire should be designed in a way to try to obtain accurate and complete information about the research problem (Malhotra,1999). In the present study, the question items and response categories weredesigned such so as to motivate the respondents to participate in the research study.For this quantitative research study, the researcher developed a questionnaire in order to collect the data to meet the aims of the study, then the questionnaire will have three parts; as follows:

1. Part one- cover letter which will explain what the study is about, the purpose, as well as a guarantee of confidentiality; in addition, there will be a question to find out if the respondent is an IBS user. If the respondent says NO, then he or she will be thanked and told not to proceed. If YES, he or she can move to the second question.
2. Part two will have twelve questions to identify the demographic profile of respondent; like gender, age, marital status, job, residence, education, monthly income, period using internet technology, source of knowledge about IBS, period of using IBS, place of accessing IBS and the kind of IBS used.
3. Part three will consist of factors and dimensions that influence IBSA in Iraq.
4. On the very last page of the questionnaire, the researcher will thank the respondents for their contribution (see appendix A).

Part three of the questionnaire is designed to measure 18 variables. These are (1) IBSA, (2) customers' attitude, (3) subjective norm, (4) PBC, (5) customers' trust,(6) PU, (7) PEOU, (8) compatibility, (9) third party support in terms of social recommendation, (10) third party support in terms of prestigious media, (11)self-

efficacy, (12) government support, (13) technology support,(14) Internet technology literacy, (15) resistance to technology,(16) risk of technology, (17) anxiety about technology, and(18) information on technology. Factors from (1 to 4) are the endogenous variables; and factors from 5 to 18 are the exogenous variables.

Because of the data collection for this study was based on the opinions and beliefs ofrespondents towards this study as well as the large number of antecedent variables that have been selected for thecurrent study, the respondents may not like the long questionnaire; so to minimize possible complaints, poor response rate and incomplete responses, Therefore, the researcher made a careful selection of the instrument ,question development process employed the good question design principles, such as designing brief questions that can be used for all respondents, use of positive questions, and avoidance of leading questions as recommended (Cooper and Schindler, 2001; Frazer and Lawley, 2000; Zikmund, 2003). Several factors made the researcher decide on this instrument:

1 -Based on previous studies, it has high internal reliability (coefficient alpha).

2-Many previous researchers have used this instrument in an IBS setting.

3- This instrument has been proven to be easy to administer measures, for example by using the Likert-scale.

To ensure good results, the researcher modified the instrument to include: prestigious media influence and Individual factors technologies(IFT) (Internet technology literacy, resistance to technology, risk of technology, anxiety of technology, and information on technology), from another area(Electronic Filing System and Social

Media Adoption) because the researcher did not find suitable measurements for these variables in the IBSAarea.

As mentioned previously, the reliability test used and the scales selected for the questionnaire of this study is Cronbach's alpha, which is an experiment, test, for measuring procedures that yields the same findings on repeated trials. In addition, the instrument selection was also based on criterion-related validity, for example the relationship between IBSA intention and IBSA, which has been hypothesized for the present study because previous studies have supported this relationship. Therefore, the main criterion for choosing a variable and its subsequent measure was that it had shown significant and strong criterion-related validity in previous studies.

Because the vast majority of Iraqis talk and understand by Arabic language more than English, and to ensure that the content validity will be more acceptable, therefore the researcher decided to use Arabic language in this questionnaire.The use of Arabic language is practical because it is the lingua franca of the respondents. Sekaran and Bougie (2010) suggested that it is important to ensure that the questionnaire instrument is in the language preferred by each respondent in order to avoid response errors among the entire population.Therefore, the questionnaire was translated via a procedure called back-to-back translation. First the English version was translated into the Arabic language by two academics (see Appendix A). Later, the Arabic version will be re-translated into English language by a different academic staffto ensure the validity of the translation (Newmark, 1988). The questionnaire had been written in Arabic language to make it easy to be understood by the Arabic respondents. In relation to questions' content and wording, the

questions are designed to be short, simple and comprehensible to avoid ambiguous and double-barreled questions (Kassim, 2001). There were small variations but since these did not change meanings, they were retained, and some alterations were necessary since English is the business language in Iraq (see Appendix B).

3.7 VARIABLES MEASUREMENTS

According to Sekaran and Bougie (2010), the measurement is a tool or mechanism of describing some property of a phenomenon‘s variables of interest in the study by assigning numbers in a reliable and valid way. The survey measures 18 variables, which are: PU, PEOU, compatibility, third party support in terms of social recommendation and prestigious media influence, self-efficacy, government support, technology support, Internet technology literacy, resistance to technology, risk of technology, anxiety about technology, information on technology, trust, attitude, subjective norm, PBC, and IBSA. All these variables are adopted from previous studies except six - prestigious media influence, Internet technology literacy, resistance to technology, risk of technology, anxiety of technology, and information on technology, which were modified from a different area (e-commerce, social media adoption, E-government adoption, information technology usag,electronic filing system and practice computer security).All items (82) are considered to be highly reliable and have strong construct validityas shown in table3.10. The following is a summary of the instrument that will be used to measure all variables and its source with the coefficients alpha:

1. IBSA - by four items from Raman *et al*., (2008), for which the coefficient alpha produced by previous studies was is 0.81.

2. Attitude - by five items from Nor and Pearson (2008), which had a reliability coefficient alpha of 0.94.

3. Subjective norm - by five items from Nor and Pearson (2008), which has a coefficient alpha of 0.94.

4. PBC - by four items from Shih and Fang (2004), which has a coefficient alpha of 0.86.

5. Trust - by six items adopted from Suh &Han (2002), which has a coefficient alpha of 0.93.

6. PU - by six items from Lai & Li (2005) which has a coefficient alpha of 0.95.

7. PEOU - by four items from Ho &Ko (2008), which has a coefficient alpha of 0.90.

8. Compatibility - by four items from Nor & Pearson (2008); it produced a coefficient alpha of 0.87.

9. Social recommendation influence - by five items from Shih and Fang (2004) and Nor and Pearson (2008). The coefficient alpha produced by previous studies (Nor & Pearson, 2008; Shih &Fang, 2004) is 0.94 and 0.93, respectively.

10. Prestigious media influence - by five items; no coefficient alpha was found in previous studies in an IBS setting; so for this study, three items were adapted from past studies done by Ng and Rahim (2005) on home computer usage. Two items were also adapted from a related study done by Pederson and Nysveen (2004) in the text message area. No coefficient alpha was found in a past study by Ng and Rahim (2005), but they indicated that the coefficient for all variables in their study were higher than .70, while the coefficient alpha was found to be 0.63 in Pederson and Nysveen's (2004). Moreover, five items were modified for the current study as

shown in Table 5.7. For example, the statement "The prestigious media suggests that I should update my anti-virus software regularly within the forthcoming month" is modified to" .The prestigious media suggests that I should use internet banking regularly within the forthcoming month".

11. Self-efficacy - by five items from Tan &Teo (2000). The coefficient alpha from their previous study for this measure is 0.87.

12. Government support - by four items from Tan &Teo (2000) and the coefficient alpha is 0.92.

13. Technology support - by four items from Tan &Teo (2000) consisting of items that produced a coefficient alpha of 0.63.

14.Technology Internet literacy – by five items, three items of them from Nasri (2011) and tow items were adapted from past studies done by Poon W. C. (2008) on e-services adoption. The coefficient alpha from their previous studies for this measure is 0.868 and 0.9761 respectively.

15. Resistance to technology - by four items, three of them from Al-somail *et al*. (2009) and fourth one adapted from past studies done by Agrawal and Karahanna(2000) and the coefficient alpha is 0.766.

16. Perceived risk of technology - by four items from Grabner-Krauter &Faullant (2008) and Abushanab & Pearson (2010); four items were developed in an IBSA area. The coefficient alphas produced by past studies (Grabner-Krauter & Faullant, 2008; Abushanab & Pearson, 2010) are 0.92 and 0.732, respectively.

17. Anxiety of technology - was measured by four items, no coefficient alpha was found in previous studies in an IBSA setting, so for this study all items were adapted from past studies done by Ibrahim (2012) on the actual e-filing usage behaviour.

Thecoefficient alpha was found to be 0.89. Moreover, four items were modified for current study.

18. Information on technology - by four items from Al-Somali et al (2009). The coefficient alpha from their previous study for this measure is 0.767.

Table 3.10

Measurement of variables

Constructs	**Items statement**	**Source**
Internet Banking Services Adoption (IBSA)	1- I find internet banking is useful for managing my financial matters. 2- I believe internet banking is an easy way to conduct banking activities. 3- I find that internet banking is encouraging. 4- I feel fast internet access speed is important in internet banking	Raman *et al*. (2008) a=0.81
Attitude	1-Using Internet banking is a good idea. 2-I like the idea of using internet banking. 3-Using internet is a pleasant idea. 4-Using internet banking is an appealing idea. 5-Using internet banking is an exciting idea.	Nor & Pearson (2008) a=0.94
Subjective norms	1-People who influence my behavior think that I should use internet banking. 2-People who are important to me think that I should use internet banking. 3-People whose opinions I value think I should use internet banking. 4-People who are close to me think that I should use internet banking. 5-People who influence my decisions think that I should use internet banking.	Nor & Pearson (2008) a=0.94
Perceived behavior control	1 – I would be able to operate internet banking. 2- I have the resources to use internet banking. 3- I have the knowledge to use internet banking". 4- I have the ability to use internet banking.	Shih & Fang (2004) a=0.86
Trust	1- This Internet banking site is trustworthy. 2- I trust in the benefits of the decisions of this Internet banking site. 3- This Internet banking site keeps its promises and commitments. 4- This Internet banking site keeps customers' best interests in mind. 5- This Internet banking site would do the job right even if not monitored. 6-I trust this Internet banking site.	Suh & Han (2002) a=0.93
Perceived usefulness	1 - I can accomplish my banking tasks more quickly using Internet Banking. 2- Ican accomplishes my banking tasks more	Lai & Li (2005) a=0.95

Table 3.10 *(Continued)*

	easily using Internet Banking. 3- Internet Banking enhances my effectiveness in utilizing banking services. 4- Internet Banking enhances my efficiency in utilizing banking services. 5- Internet Banking enables me to make better decisions in utilizing banking services. 6- Overall, I find Internet Banking useful.	
Perceived ease of use	1 – I find that Internet banking is easy to use. 2. It is easy to find financial services on Internet banking. 3. It is easy for me to learn how to make use of Internet banking. 4. It is easy for me to be skillful at using Internet banking.	Ho & Ko (2008) a=0.90
Compatibility	1- I think Internet banking services is compatible with my lifestyle. 2- I think Internet banking services is compatible with the way I like to do banking activities. 3- I think using internet banking fits with my banking preferences. 4- I think internet banking services fits well with all aspect of my banking activities.	Nor & Pearson (2008) a=0.87
Social recommendation influence	1. I will use the Internet banking because my family, friends, or colleagues used it. 2. I will have to use the Internet banking if my family, friends, or colleagues already had used it. 3. I have to use the Internet banking because my family, friends, or colleagues thought I should use it. 4- My family, friends, or colleagues who are important to me would think that using Internet banking is a wise idea. 5. My family, friends, or colleagues who are important to me would think that using Internet banking is a good idea.	Nor& Pearson (2008); Shih & Fang (2004) ; a= 0.94, 0.93
Prestigious media influence	1- The prestigious media suggest that I should use the internet banking regularly within the forthcoming month 2- Prestigious media reports influence me to use internet banking regularly within the forthcoming month 3- I feel under pressure from the prestigious media to use internet banking services regularly	Ng & Rahim (2005) ; Pedersen & Nysveen(2004), a= 63

Table 3.10 *(Continued)*

	within the forthcoming month.	
	4- Prestigious media is full of reports, articles and news suggesting using internet banking services is a good idea.	
	5- prestigious media and advertising consistently recommend using internet banking services	
Self-efficacy	1- I am confident of using Internet banking if I have only the online instructions for reference.	Tan & Teo (2000) a=0.87
	2- I am confident of using Internet banking even if there is no one around to show me how to do it.	
	3- I am confident of using Internet banking even if I have never used such a system Before.	
	4- I am confident of using Internet banking if I have just seen someone using it before Trying it myself.	
	5- I am confident of using Internet banking if I have just the online "help" function for assistance.	
Government Support	1-The government endorses Internet banking in Iraq.	Tan & Teo (2000) a=0.92
	2- The Iraqis government is active in setting up the facilities to enable Internet banking service	
	3- The Iraqis government promotes the Use of the Internet for commerce such as internet banking services.	
	4-The Iraqis government expects me to use internet banking services.	
Technology Support	1-Advances in Internet security technology Provide for safer Internet	Tan & Teo (2000) a=0.63
	2- Faster Internet access speed is important for Internet banking	
	3- Internet technology makes Internet banking more feasible.	
	4- Offering of the technological resources makes Internet banking more feasible.	
Internet technology literacy	1-I feel comfortable when using computers in general.	Nasri (2011) a= 0,86; Poon W. C. (2008) a=0.9761
	2-I feel comfortable when using the internet technology.	
	3-I am satisfied with my current skills for using the internet	
	4-I believe computer literate keeps me using	

Table 3.10 *(Continued)*

	internet banking services 5-I believe Internet literate keeps me using internet banking services	
Resistant to technology	1- I am interested to hear about new technological developments. 2- Technological developments have enhanced our lives. 3- I feel comfortable in changing and using internet banking services for my financial activities. 4- I like to experiment with new technologies such as Internet banking services.	Al-somail et al (2009) a= 0.766; Agarwal & Prasad (1998) A=0.92
Perceived risk	1- I believe that money can be easily stolen while using Internet banking. 2- I believe that the decision to transact using IB is risky. 3- I believe that the decision to transact using IB is negative. 4-I am afraid that other people might get access to information about my Internet banking transactions.	AbuShanab & Pearson (2010) a=0.732; Grabner-Krauter &Faullant (2008) a=0.92
Anxiety technology	1-I feel nervous about using Internet banking. 2-It scares me to think that I could lose a lot of information using internet banking by hitting the wrong key. 3-I hesitate to use internet banking for fear of making mistakes I cannot correct. 4-The using of internet banking is somewhat intimidating to me.	Ibrahim (2012) a=0.89
Information on technology	1- I receive enough information about internet banking toward IBSA. 2- I receive enough information about the benefits of internet banking toward IBSA. 3 –I receive enough information of using internet banking. 4-1 am aware of Internet banking and its benefits	Al-somali et al (2009) a= 0.767
	Total items= 82	

3.8 QUESTIONNAIRE SCALES

The Likert scale has been used in current study to measure responses regarding to IBSA.This scale is a common format for E-business research (Garland, 1991). The Likert scale is a psychometric scale used in questionnaire surveys to get respondents' opinions regarding a specific level of agreement to a measurement statement (Sudha & Baboo, 2011). It has been extensively tested in both MIS and social science (Luck

& Rubin, 1987; Garland, 1991; Morgan & Hunt, 1994; Tan & Teo, 2000; Shih & Fang, 2004).

As suggested by one researcher, seven point Likert scales are preferable to a 5 point scale. This is due a smaller standard deviation and to the fact that an increasing number of points will bring the scale closer to a continuous scale and thus closer to the assumption of most the statistical techniques used by the practitioner (Kristensen and Eskildsen, 2010). Therefore, it was decided to use seven-point likert for the main study.The current study will use a seven-point Likert scale for measuring all variables in this study, from 1-7: (1) Strongly disagree, (2) Disagree, (3) Disagree somewhat, (4) Undecided, (5) Agree somewhat, (6) Agree, (7) Strongly Agree. Only three constructs will have different anchors: PEOU, PU and technology Internet literacy. PEOU and PU will be measured by using a seven-point Likert scale with anchors on extremely unlikely and extremely likely. Technology Internet literacy will be measured also by using a seven-point Likert scale with anchors on extremely uncomfortable and extremely comfortable, this for the first two items and for the third item extremely unsatisfied and extremely satisfied.

3.9 QUESTIONNAIRES PRE-TEST

A pre-test is a preliminary assessment of the measurement instrument in order to look at some possible difficulties that may be encountered by the potential respondents when filling it out. In other words, pretesting entails validating the content of the measurement instrument (Tojib & Sugianto, 2006). Content validity refers to the appropriateness degree of all items to the purpose of the measurement instrument (Zikmund *et al*., 2010). To ensure this, the expertise of 4 lecturers

withPhD qualifications from the College Administration and Economic at Kufa University (KUAE) and Othman Yeop Abdullah Graduate School of Business at Universiti Utara Malaysia (UUM OYA GSB) was solicited.In same vein, the pre-test was conducted using tow Iraqis banks managers (Credit Bank of Iraq, Kurdistan International Bank). Based on their feedback, improvements were made on the items asked, the sentence structure, appropriate choice of words and its arrangement. The improvements are necessary to ensure a high response rate.

3.10 PILOT STUDY

The pilot study is a primary test to assess the goodness of measure, which is the reliability, before administering the final questionnaire (Sekaran & Bougie, 2010; Zikmund *et al*., 2010). The researcher have been conducted a pilot study inorder to test the reliability, validity and viability of the research instrument as well as to determine the time that needed for conducting the main study. Inaddition, there are several advantages could get from conduct a pilot study; (1) developing and testing adequacy of research instruments, (2) identifying logistical problems that might occur during the data collection stage, (3) estimating variability in outcomes to help determine sample size, (4) establishing whether the sampling frame and technique are effective and (5) collecting preliminary data (Van Teijlingen, *et al*., 2001).

According to Cooper and Schindler (2008), the appropriate sample size of pilot study is around 25-100 respondents. Therefore, the sample size of the pilot study is fifty six (seven respondents from each university that was selected from among the Iraqis universities).

Table 3.11

Reliability Test Results of the Measurement Instrument

Variables	No. of Items	Pilot Cronbach's alpha Value	Original Cronbach's alpha Value
IBSA	4	0.678	0.81
Attitude	5	0.838	0.94
PU	6	0.867	0.94
PEOU	4	0.778	0.86
Compatibility	4	0.883	0.93
Trust	6	0.894	0.95
Subjective norm	5	0.857	0.90
Social Recommendation	5	0.888	0.87
Prestigious Media	5	0.886	0.85
PBC	4	0.883	0.63
Self Efficacy	5	0.823	0.87
Government support	4	0.944	0.92
Technology support	4	0.885	0.63
Internet technology literacy	5	0.752	0,868
Resistance technology	4	0.730	0.766
Risk technology	4	0.843	0.92
Anxiety of technology	4	0.842	0.89
Information on technology	4	0.829	0.767

In Table 3.11, the Cronbach's alpha coefficients indicate that all items used in the instrument are acceptable, with a range from 0.678 to 0.944. Based upon the feedback from the pre-test and the pilot study, the survey instrument is finalized, consisting of 82 items without any modification. The results of the Cronbach's alpha, conducted through the Statistical Package for Social Science (SPSS v22) (refer to Appendix C).

3.11 DATA COLLECTION PROCEDURES

This survey was conducted on the employees of Iraqi public universities who are IBS. The data was collected from the eight universities (Middle region, Southern region and Northern).The study was conducted within the period of eleven weeks starting from 20th of Feb to the 12th of May 2014.

As part of data collection process, it is necessary to visit the public universities, researcher and his eight assistants asked the respondents to fill the questionnaire. In this stage some challenges had been faced, the weather was cold in Iraq during the data collection period, unfortunately, the security situation was worsening too this was frustrating but inevitable. Similarly, some employees also refused to spend their time to answer the questions of survey. The data collection method was costly as a survey in Iraq is expensive.

3.12 OVERALL RESPONDENTS RATE

With the total of 800 questionnaires distributed to respondents who are employees of the public universities in Iraq, only 600 questionnaires were returned. After being returned, the 600 questionnaires were tested manually (Observation) and the researcher found that there are sixty-five (65) questionnaires that were incomplete, so these questionnaires were omitted. Therefore, only five hundred and thirty five (535) questionnaires were useful for further steps of analysis. Out of 535 questionnaires 80 respondents were from the University of Babylon with a response rate about 67%, 88 respondents from University Technology with a response rate about 69%, 55 respondents from University of Kerbala with a response rate of 72% and 45 respondents from University of Anbar with a response rate of about 58%, 77respondents were from theUniversity of Kufa with a response rate of 72%, 102 respondents were from the AL-MustansiriyahUniversitywith a response rate of 65%, 40 respondents were from the Alqadisiayah University with a response rate of 81%, the final one in Tikrit University,48 respondents with a response rate of 59%. Therefore, the overall response rate was 66.8% (535/800).

Questionnaires were randomly delivered and collected in person. Personal delivery of questionnaires was used so that the researcher could explain the purpose and benefits of the study to the respondents and motivate them to give honest responses (Sekaran & Bougie, 2010).Therefore, the acceptable response rate from the data was N=535.In addition, the personal delivery of questionnaires is yields a fairly high response rate of 70 to 84% (Webster, 1998). Besides that, to improve response rates, 15 phone cards valued at $5 (for every university) each were offered to early respondents as incentives to stimulate participation.

3.13VALIDITY TEST

Validity refers to a degree to which the data collection method accurately measures what it is intended to measure (Sekaran, 2003), while reliability shows how consistent the measurement is (Hair *et a*l. 2006). The main advantage to test validity and reliability to try of reducing the possibility of getting incorrect answers during the data collection stage. The common types of validity testing are content validity (face) and construct validity (convergent and discriminate validity). Each type of them is defined in the following.

3.13.1 Content Validity

According to Hair *et al.* (2006), content validity could be refers to the correspondence between the instrument items and the concept, this type of validity is tested by the use of expert judgment and pre-tes. In current study, the measurement scales selected along with its items were tested beforehand by seven experts, including two Iraq banks' managers and five PhD to assess the content validity of the research instrument. Their comments have been used to improve the questionnaire

(some questions about the demographic profile and a number of questions related to measurement of the variable).

3.13.2 Construct Validity

Construct validity refers to a degree to which measured items (measured variables) represent its intended constructs (latent variables). In this research two kinds of validity test were carried out, to assess the construct validity. They are convergent validity and discriminant validity (Hair *et al*., 2006), as explained in next sections.

3.13.2.1 Convergent Validity

Convergent validity refers to the degree to which a measure of a specific construct converges or shares a high proportion of variance in common (Hair *et al*., 2010). This type of validity is carried out for this reserch byused many criteria namely the factor loading, composite reliability (CR) and Average Variance Extracted (AVE) (Hair *et al*., 2010), as explained in Chapter four, Section 4.5.2.

3.13.2.2 Discriminant Validity

Discriminant validity refers to a specific variable (construct) that is truly distinct from other variables (constructs) (Hair *et al*., 2010). In other word, discriminant validity is one way of examining construct validity other than convergent validity. The discriminant validity was carried out any way by calculating Average Variance Extracted (AVE) for each pair of constructs and comparing its value with square of correlation between such constructs. According to previous studies, AVE values shouldn't be less than 0.50 for each construct (Bagozzi & Yi, 1989; Holmes-Smith, 2001), as explained in Chapter four, Section 4.5.3.The Average Variance Extracted

(AVE) is calculated by using the following formula to which a construct is truly distinct from other formulas (Kearns & Lederer, 2003):

Variance Extracted=$\sum$ *(factor loding)*^{2}/ {$\sum$ *(factor loding)*^{2}+ $\sum$ *(variance of error)}.*

3.14ANALYSIS METHOD

The data analysis procedure is a step that entails various activities such as data entry of responses, screening the data and selecting the suitable data analysis strategy (Churchill & Lacobucci, 2004; Sekaran, 2003). In order to identify data entry errors, data screening will be performed, which included (missing data, outlier, normality, linearity, homoscedasticity, multicollinearity, reliability, validity, descriptive data and test of response bias). SPSS will be utilized to carry out some of the statistical tests. The final stage involved using the Structural Equation Modeling (SEM) PLS to analyze data and do the hypothesis testing. In addition, SEM has potential to analyze multiple relationships between independent and dependent variables simultaneously.

3.15STRUCTURAL EQUATION MODELING- PLSAPPROACH

Structural Equation Modeling has become one of the criteria to be considered during the selection of research methodologies, particularly in the study of issues that are connected to social and behavioral sciences (Baumgartner & Homburg, 1996). SEM process consists of two major components: validating the measurement model, and fitting the structural model. It could be used to test different models of fit, and to build up an overall model that best presents the data, and in turn advances the development of theory (Hair *et al*., 2010).

The Partial Least Squares (PLS) modeling was proposed by Wold (1982, 1985) as cited by Lohmoller (1987, 1989), in the computational aspect of the LVPLS software.It has also been attributed to Wold through theoretical developments and by chin (1998, 2001) and Chin and Newsted (1999) for the new graphical interface (PLS-Graph) and for enhanced validation methods. The Lohmoller's program PLSX for units x variables data is the basis of the PLS-Graph software and eventually enables similar option.

3.15.1 The PLS Path Model

Method in the estimation of causal relationships in the field of path models involving latent constructs that are measured indirectly by many indicators. Previous studies by Wold (1982), Lohmoller (1989),Chin (1998), and Tenenhaus *et al*., (2005) explained the methodological basis and methods for outcome evaluation and provided some instances of this methodology.

A PLS path model's description is provided by two model; a measurement model linking the manifest variable (MVs) to their latent variables (LVs), and a structural model that related endogenous LVs to other LVs. The measurement model is referred to as the outer model while the structural model is referred to as the inner one.The inner model describes the relation between unobserved or latent variable while the outer one describes the relation between a latent variable and its manifest variable. An example of PLS path model figure 3.2. The general design of a PLS presented a recursive inner model that is exposed to predictor specifications.Therefore, the inner model comprises a casual chain system and included two varying types of outer models; the reflective and formative measurement models are represented by mode

A&B respectively. The choice of a particular outer mode is explained by theoretical rationals (Diamantopoulos & Winklhofer, 2001).

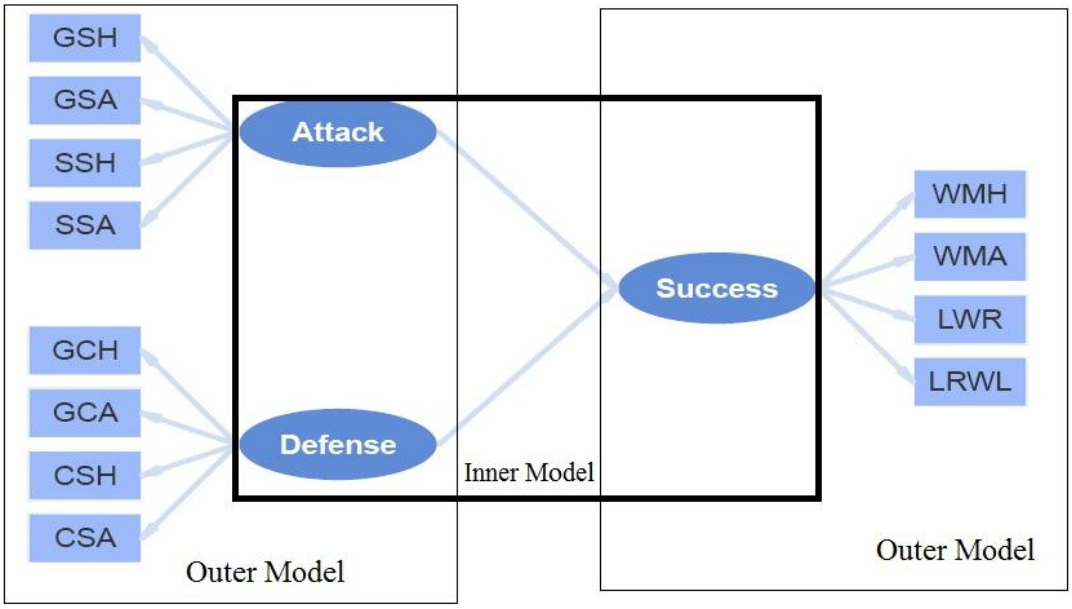

Figure 3.2
Example of a PLS path Model,
Source:Sanchez, G. (2013, p.20)

The reflective mode develops causal relations from the latent variable to the manifest variable in the block it is located in. Therefore, every manifest variable in a particular measurement model is perceived to be developed as a linear function of the latent variables along with the residual. On the other hand, the formative mode of model develops causal relation from manifest variable to the latent ones.

In addition, it is imperative to consider how the terms, "formative" and "reflective", and the implication linked with the classification of "causal" and "effect", highlight the distinction between the characterizations of the mode of the latent variable measurement models.

Despite the latent variable's original consideration as an exact linear combination of its indicators of the specifications of formative indicator or a causal indicator specification, the original term is broader as it considers both in an exact linear combination even when the indicators do not extensively determine the latent variable (Bollen & Davis, 2009).

3.15.2 The PLS Path Modeling Algorithm

The PLS algorithm is primarily regression sequence based on weight vectors. The weight vectors achieved at convergence achieve fixed point equation. Lohmoller (1989) suggested that the basic PLS algorithm includes the following three phases:

Stage 1: An iterative estimate of latent variable scores comprising a four-phase iterative process that is repetitive until the achievement of convergence. The steps included:

1- The external approximation of the latent variable score,

2- Inner weight estimation,

3- The latent variable scores internal approximation, and

4- Outer weights estimation.

Stage 2: The outer weight/loading and path coefficients estimation.

Stage 3: Location parameters estimation.

3.15.3 Methodological Characteristics

Literature concerning PLS path modeling and other publication causal modeling applications using the PLS path modeling method often highlight the method's beneficial feature (e.g. Falk & Miller, 1992; Fornell & Bookstein, 1982; Joreskog &Wold, 1982; Lohmoller, 1989).

The widespread use of PLS path modeling in the circles of scientists and practitioners stem from four basic features; (1) as opposed to singularly stressing on the common reflective mode, the PLS path modeling algorithm enables the unconfined calculation of cause-and-effect relationship models employing both reflective and formative measurement models (Diamantopoulos & Winklhofer, 2001);(2) PLS can be utilized in the estimation of path models in smaller sample sizes (Chin & Newsted, 1999); (3) PLS path models can turn very complex as they comprise of varying latent and manifest variable, but they never lead to issues of estimation (Wold,1985). Moreover, the PLS path modeling is considered as methodologically beneficial compare to CBSEM in cases when improper or non-convergent outcomes are possible (e.g. Heywood cases, see Krijnen, Dijkstra &Gill, 1998).

Furthermore, with increasing complex models, the amount of latent and manifest variables may be great in relation to the observation numbers. Finally, PLS path modeling can be utilized in highly skewed distribution (Bagozzi, 1994), or when the observation independence is not guaranteed because according to fornell (1982, P.443),"There are no distributional requirements".

3.15.3.1 Reflective and Formative Measurement Models

Structural equation models often include latent variables having multiple indicators. The measurement model or the outer model provides specifications of the relationship between indicators and latent variables. The direction of the path association per measurement model and hence, the causality existing between the

indicators and the latent variables are define either through a reflective or a formative method (Henseler*et al*., 2009).

The reflective measurement model originates from the classical test theory along with psychometrics (Nunnally & Bernatein, 1994). Every indicator reflects an erroneous measurement of the latent variable. The causality direction beings from the construct to the indicators and thus, observed measure construct are reflected in the indicators' changes (Henseler *et al*., 2009).

In certain circumstances, like the onset of the model development, it is suitable to determine causality from the measures of the construct as opposed to the other way around (Blalock, 1985). This type of circumstance reflects a formative measurement model, which is sufficient when a construct is defined as a combination of indicators. A good example is the marketing mix elements determined through the combination of variables (Fornel, 1982) and therefore, it has to be modeled as a typically linear combination of indicators along with disturbance term (Diamantopoulos, 2006).

As a result, construct modification are often revealed in the changes in the indicators. The latent variable is consequently described as weighted score across the representative indicator variable considered as one dimension. When the value of one indicator increases, a higher score is established for the composite variable, no matter what the values of the other indicators are (Henseler *et al.*, 2009).

On the other hand, the formative measurement model utilized the overall index domain where the indicators represent the overall important dimension or

independent sources of the latent variables. This implies that the omission of a single indicator could lead to the omission of specific part of the formative measurement model and modify the variable's meaning (Diamantopoulos & Winklhofer, 2001).

3.15.3.2 Sample Size

The debate surrounding sample size stems from the considerable challenges faced when carrying out CBSEM with smaller samples. A significant number of simulation studies dedicate to CBSEM made comparisons to alternative discrepancy functions and their estimation bias, robustness and accuracy in terms of sample size. For instance, Boomsma and Hoogland (2001) claimed that in small samples of 200 or less, there are issues of non-convergence and improper CBSEM solution. The auther conclude that CBSEM, based on the selected discrepancy function and the model complexity, calls for several hundred or sometimes thousands samples**.**

In PLS path modeling the size of the sample can be significantly smaller. This aspect of the sample is illustrated by Wold (1989) through the analysis of a path model on the basis of a data set comprising 10 observations and 27 manifest variables. Based on a rule thumb, for a robust estimation of PLS path modeling, the sample size should be equal to the larger of the following sizes (Barclay, Higgins & Thompson, 1995); (1) ten times the scale's numbers of indicator with the highest number of formative indicators or (2) ten times the highest number of structural paths concentrated on a specific construct located in the inner model.

Similarly, Chin and Newsted (1999) illustrated a Mount Carlo sample study concerning PLS with small samples. The selection of a suitable sample size hinges

on the relationship magnitude or the required degree of power. Clearly, it is important for the researcher to keep the following in consideration: the distributional characteristics of the data, potential missing data, the psychometric properties of the variables examined, and the relationships magnitude prior to deciding on a suitable sample size to utilize or to guarantee that an appropriate sample size concerning the phenomenon of interest is available (Marcoulides & Saunders, 2006).

Similarly, Goodhu *et al*. (2006) emphasized that although PLS path modeling appear to lack special in small sample size, its performance in light of statistical power, is at par with other method for normally distributed data. According to them PLS path modeling is still a method that is convenient and robust which is suitable for several research situations like complex research model with too small sample sizes for CBSEM methods. Consistent with their conclusion, Marcoulides and Saunders (2006), P.VIII) reveals that "PLS rule of thumb may be effective in some circumstances, it may fail in others.

3.15.3.3 Model Complexity

With the increase of model complexity, certain CBSEM discrepancy functions, such as GFI and AGFI, decline and they may become unsuitable for more complex models (Anderson & Gerbing, 1988). For instance, authors Boomsma and Hoogland (2001) conducted an experimental variation of model complexity by modifying the estimated parameters and the number of freedom levels and they revealed that the more parameters to be estimated, the more will be the occurrence of non-convergence and ineffective solution. In other word, the larger the number of estimation requirements, the more will be the information required.

Hence,PLS is widely used for its suitability in explaining complex relationships (Fornell, 1982; Fornell, Lorange&Roos, 1990). Similarity, according to wold (1985), PLS is prominent among larger models when the important moves from individual variables and parameters to group of variables and total parameters. Hence, in complex models having latent variables PLS is most common choice. In addition, the PLS algorithm enables a significant increase in model complexity and significant reduction between the distance of subject matter analysis and statistical methods within domains that are characterized by continuous access to data is reliable.

3.15.3.4 Evaluation of the PLS Path Model

The PLS path modeling does not employ the condition of global-of-fit. As such, Chin (1998) proposed a catalogue of criteria for the assessment of partial model structures. The criteria comprise of a two-phase process that covers (1) the outer model assessment.

At the onset of the tow level level processes, model assessment concentrates on the measurement models. The measurement reliability and validity is revealed by a systematic evaluation of PLS based on specific criteria linked with formative and reflective outer model. It is only reasonable to assess the inner path model estimates when the calculated latent variable scores reveal appropriate validity and reliability.

3.15.4 Covariance Based SEM (CBSEM) and Variance Based SEM (VBSEM) Approaches

1. The covariance structural equation modeling (CBSEM) was proposed as a confirmatory model and it is distinct from the PLS path modeling as the latter is prediction oriented.
2. CBSEM has always been the common approach for the estimation of SEMs. The popularity of PLS path modeling is recent, particularly in the consumer and service research field.
3. The PLS path modeling should be considered as more than a less strict replacement of CBSEM but as an approach that complements CBSEM (Lohmoller, 1989).
4. Covariance-based SEM, Components-based SEM along with PLS path modeling should be considered as methods that complement each other. The aim of the covariance-based SEM is to decrease the fit-function between the sample covariance matrix and the implied covariance one. As for the PLS path modeling, the estimates of parameters are acquired to decrease the residual variance of dependent variables, both manifest and latent. Nevertheless, conditions may exist when PLS path modeling may outperform the covariance-based SEM in its assessment of hierarchical construct models (Mathwick *et al.*, 2001).
5. Utilizing covariance-based SEM for the identification of reflective hierarchical models is a challenging task. Even in cases when the model is identified theoretically, it may take a backlash from empirical under-identification, which could lead to non-convergence and/or unsuitable solutions. As for formative hierarchical construct models or such models with a combination of formative and reflective constructs, the challenges are

multiplied. The PLS path modeling is not as vulnerable to identification issues and unsuitable solutions compared to covariance-based SEM (Mathwick *et al*., 2001).

6. Cassel *et al*. (1999) managed to present the robust deviation from normality of PLS path modeling with expectation of highly skewed distributions with the help of a Monte Carol simulation.
7. The PLS path modeling is more suited to complex models such as those with hierarchical constructs (with a complete disaggregation method), mediating and moderating impacts (Chin, Marcolin, & Newsted, 2003).
8. The formative constructs analysis in covariance-based SEM is challenging and it requires the identification of rules making its applications challenging particularly in multidimensional or hierarchical models. The PLS path modeling primarily enable for the convenient handling of formative constructs. Despite the well documented biasing impacts of incorrectly specifying formative constructs. Despite the well documented biasing impacts of incorrectly specifying formative constructs in Jarvis, MacKenzie, and Podsakoff (2003) literature review, Petter, Straub, and Rai (2007) stated that 30% of the constructs are specified in an incorrect manner.
9. The primary benefit of covariance based SEM that is superior to PLS path modeling is its use of formal testing procedures enabling for the assessment of the global model fit's validity (Bollen & Bollen, 1989; Chin, 1998; Tenenhaus *et al*., 2005). As for hierarchical construct models, the model fit is not the only thing that is assessed through formal testing procedures but also different alternative nested models (Edwards, 2001; Marsh & Hocevar, 1985;

Rindskopf & Rose, 1988). This is, however, impossible in the PLS path modeling and as a result, the model validity cannot be assessed globally.

10. In social sciences, unobserved heterogeneity and measurement errors are prominent. PLS path modeling applications are however often based on the rationale that the data analyzed stemmed from one population. This rationale of homogeneity is always unrealistic as individuals perceptions and evaluations of latent constructs are mostly heterogeneous that can impact both the measurement part (varying latent variables means in a single segment) and the structural part (varying relations between the latent variables in a single segment) of a causal model (Williams, Edwards, & Vandenberg, 2003).
11. There is a lack of a well-developed statistical instrument to extend and reinforce the PLS path modeling method
12. Monte Carlo simulations should complement the utilization of actual data sets. The Monte Carlo simulations may function as an effective tool in exploring the effect of improper solutions in covariance-based SEM for hierarchical models and the possibility for the PLS path modeling to solve the problem.
13. The PLS modeling has to be employed in the initial stage of theoretical development to assess and validate exploratory models. In addition, one of its powerful features is its suitability for prediction-oriented research where the methodology helps researches to concentrate on the explanation of endogenous constructs.
14. Another feature of PLS is its vulnerability to multicollinearity. PLS determines measurement models and structural models through multiple

regressions, and hence its estimates can be vulnerable to issues of multicollinearity.

15. PLS produces latent variables scores which are constructs proxies measured by one or more than one indicator (manifest variables).
16. PLS path modeling bypass issues of small sample size and it can hence be employed in certain situations where other methods are ineffective.
17. PLS path modeling is able to estimate highly complex models having various latent and manifest variables.
18. The PLS path modeling has looser assumptions regarding the variables distributions and erroneous terms.
19. The PLS path modeling can be utilized in reflective as well as formative measurement models.

3.16 HYPOTHESIS TESTING

This study is meant to test seventeen direct hypotheses,as discussed earlier in this chapter.Therefore, the next section discuss of testing the direct effect using PLS-SEM.

3.16.1 Direct Effect

Direct effects are the relationship between two constructs with a single path (Hair *etal*., 2006). In other words, a direct effect is the effect variables have on another in a direct relationship. The present study comprises seventeen direct effects and to ensure that all paths in the model are supported, the recommendation values of path coefficient (β), T-value, and P-value have to be ascertained. The T-value should be more than 1.64 to achieve recommendation value (Hair *et al*. 2014). However,

critical values for a two-tailed test are 1.65 with significance level=10%, 1.96 with significance level 5%, and 2.57 with significance level 1%, should be usually consider path coefficients with 5% or less probability of errors as significant (Hair *et al*., 2014, P.138).

3.17 SUMMARY

This chapter offers specific details regarding the research methodology and designs employed in the study. This chapter also has presented the theoretical framework, which explains the interrelationships among the variables developed based on DTPB. A quantitative approach, through the use of a structured questionnaire, has been used to collect the primary data for this study. The chapter also dealt with the validity issues through the use of pre-tests and a pilot study. In addition, this chapter includes discussed of the population, sample size, and the survey procedures, along with the minimum sample size requirements and the organization of the collection of data. Moreover, the present chapter dealt with the statistical techniques that will be used in current study.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.0 INTRODUCTION

The main aim of present study is to examine the relationships among variables. This chapter presents the results of the study acquired from the quantitative analysis.According to previous chapters, the relationships among these variables are coupled with the fact that studies are scarce, and their results are mostly inconclusive. The results of this study are in accordance with the research design and methodology described in previous chapters. The analysis includes the profile of the respondents, analyzing descriptive statistic, test of response bias, data screenings which consists of: missing data, outliers, normality, linearity, homoscedasticity,and multicollinearity.

After that, this study employed the Partial Least Square Structure Equation Modeling(PLS-SEM) to assess the measurement model as prerequisite for structural model assessment and hypothesis testing.

4.1 CODING AND DATA ENTRY

The acceptable respondents (535) are entered to analyses using SPSS software version 22. Coding is a process used to clarify the translation of respondent information and question responses to specific categories for the analysis procedures (Kerlinger & Lee, 2000). As recommended by Sekaran and Bougie (2010), the collected sample data needs to be coded to transcribe them from the questionnaire survey before they are entered into the dataset. Furthermore, each item in the

questionnaire survey must have a unique name, some of which clearly identify the information like gender, age, education, and so on (Schleicher & Saito, 2005).

4.2 DESCRIPTIVE STATISTICS

Descriptive analysis seeks to transform the raw data into usable information.Its primary function is to describe a set of variables in a situation that will make them simple to understand and interpret (Zikmund *et a*l., 2010). Data Descriptive Statistics (DDS) comprises an abstract description of the statistics of the main summary. DDS is used to find out the characteristics of IBS adopters - in other words, full details of this analysis were given of respondents 'demographic factors and variables for those who use IBS using 535 usable questionnaires. In this analysis raw data is transformed into new data that makes the provision of pertinent information that is used to explain a set of factors in a situation easy to understand and interpret (Sekaran 2003). This particular analysis uses frequency distribution, mean and standard deviation to recognize differences among groups for all the variables to provide a clear meaning of the entered data. For IBS adopters, the main descriptive statistics used are mean and standard deviation.

4.2.1 Descriptive Statistics of Respondents' Demographic

The respondents 'demographic factors were gathered to collect information about each respondent that participated in the survey. The questions were designed for the respondents to choose their answers. In the obtained results in Table 4.1, the final sample consisted of a total of 535 respondents from Iraqis. Most of the respondents that participated in the survey were males 62.4%, and only 37.6% of the females. Furthermore, the average age of the sample in this study is divided into four

categories. Moreover, at the top category is the one comprising respondents aged 31-40, which also took the highest proportion with 258 respondents, which was 48.2% of the total respondents. This indicates that the majority of the respondents have had considerable working experience. In addition, the majority of the respondents (428) were married, which made up 80%, followed by unmarried respondents, which were 107 in number and made up 20%, (refer to Appendix D).

In same vein, the results show that the vast majority of the respondents were living in urban places, like Baghdad,Babylon, Alqadisia,and the percentage is make up 93.8%.The educational level shows that the highest percentage of participation 50.3% was of the respondents that hold Bachelor‘s degrees, while(24.9%) of them had Masters Degrees, and PhD degrees made up 16.8%. The proportion of the respondents related to job positions were as follows 32.9%, 30.1%, 28.6%, and 8.4% in the as lecture, managerial, technical and others, respectively. In addition, the results show that most of the respondents have an income between 500,000-1000, 000ID.

In the obtained results in Table 4.1, indicates that highest percentage of the respondents have used the internet for a period between 6-10 years was (28.6%). In addition, the results show that a majority of the respondents, numbering 251 made up 46.9% percent,knew about IBS from the internet itself. Besides that, the results show that the majority of the respondents, 67.3%, access the IBS from their homes. Moreover, it shows that the high percentage that used IBS for a period one year's consisted of 291 respondents, or 54.4%. Finally, the frequency of descriptive analysis shows that the balance enquiry services were used more than other services (62.4%).

Table 4.1

The Profile of the Respondents' Demographic

Construct	Category	Counts	Percentage
Gender	Male	334	62.4
	female	201	37.6
Age	20-30 years	197	36.8
	31-40 years	258	48.2
	41-50 years	53	9.9
	More than 51 years	27	5.0
Marital status	Single	176	20.0
	Married	428	80.0
	Divorced	0	0
	Widowed	0	0
Occupation	Lecturer	176	32.9
	Managerial	161	30.1
	Technical	153	28.6
	Others	45	8.4
Residence Place	City	502	93.8
	Rural	33	6.2
	Desert	0	0
Educational level	PhD	90	16.8
	Master	133	24.9
	Bachelor	269	50.3
	Diploma	25	4.7
	Secondary	18	3.4
	Others	0	0
Monthly Income	500,000 – 1000,000 ID	310	57.9
	1,001,000 -1500,000 ID	130	24.3
	1501,000 – 2000,000ID	59	11.0
	More than 2000,000 ID	36	6.7
Period of using Internet	Less than one year	93	17.4
	1-3 years	101	18.9
	3-5 years	135	25.2
	6-10 years	153	28.6
	More than 10 years	53	9.9
Source of knowing IBS	Bank	92	17.2
	Social	195	36.4
	TV/Radio	106	19.8
	Newspaper / Magazine	35	6.5
	Internet	251	46.9
Places of accessing IBS	Home	360	67.3
	Working offices	308	57.6
	Internet café	53	9.9
Period of using IBS	Less than one year	291	54.4
	1-3 years	148	27.7
	3-5 years	60	11.2
	More than 5 years	36	6.7
IBS which often use	Money transfer	328	61.3
	Bill payment	130	24.3
	Downloading Information	114	21.3
	Investment activity	60	11.2
	Balance Enquiry	334	62.4
	Loan application	132	24.7

4.2.2 Descriptive Statistics of the Variables

The descriptive statistics of the variables have can give the researcher a detailed idea of how the participants in the survey have responded to the items in the questionnaire (Sekaran & Bougie, 2010). The descriptive statistics using SPSS v22 of each variable can be seen in Table 4.2 (for more details, see Appendix E).The Table 4.2 indicates that the government support (GS) has the lowest mean with (4.413) while the highest mean is self-efficacy (SE) with (5.509). Moreover, the standard deviation for all variables seems to fall between the ranges of (0.776 to 1.258) which reflect the existence of considerable acceptable variability.

Table 4.2
The Descriptive statistics for all variables (N=535)

Constructs	Code	NO. Item	Minimum	Maximum	Mean	Std. Deviation
IBSA	IBSA	4	2	7	5.174	1.190
Attitude	ATT	5	4	7	5.480	.832
Perceived usefulness	PU	6	3	7	5.398	1.017
Perceived ease of use	PEOU	4	2	7	5.019	1.050
Compatibility	COM	4	1	7	4.520	1.258
Trust	TRU	6	1	7	4.898	1.038
Subjective norm	SN	5	2	7	4.564	1.113
Social Recommendation	SR	5	2	7	4.475	1.051
Prestigious media	PMM	5	2	7	4.780	1.181
Perceived Behavior Control	PBC	4	1	7	5.051	1.201
Self Efficacy	SE	5	1	7	5.509	1.069
Government support	GS	4	1	7	4.413	1.246
Technology support	TG	4	2	7	5.068	1.104
Internet technology literacy	TIL	5	3	7	5.205	.776

Table 4.2*(continued)*

Resistance to technology	RTT	4	4	7	4.948	.821
Risk technology	PRT	4	2	7	4.784	1.145
Anxiety about technology	AOT	4	2	7	4.596	1.129
Information on technology	IOT	4	2	7	4.735	.907

4.3 DATA SCREENING

Data screening is a process that has to be gone through to guarantee that there are no ambiguous data characteristics that might negatively have an impact on the results. Going through the screening is imperative as former steps usually have an effect on the decisions to be made on the latter ones. It is consist of missing data, outlier detection, assessment of normality, linearity and homoscedasticity status and multicollinearity. These steps are discussed one by one in the following sections.

4.3.1 Missing Data

Missing data refers to the fact that not all respondents answered each question in the questionnaire survey. And it is considered the first step to do in data screening. This occurred for many reasons; they did not understand the question, did not know the right answer for the question, their ignorance of a certain topic, or they were not willing to answer the question (Sekaran & Bougie, 2010). Therefore, the missing data is a familiar problem in surveys (Hair *et al*., 2010). On the other hand, it is very crucial to use PLS because the statistical analysis techniques of the data will not run if there is any missing data (Hair *et al*., 2014). Missing data, as shown in previous studies, can be handled in different ways, such as deleting them, distribution of missing data or replacing them (Kline, 2011). Apart from the solution of deleting

missing data, the researcher can also replace the data with the mean value - this can only be the case if the missing data is below 30% of the total required data (Hair *et al.*, 2010; Sekaran, 2003).

Data from five hundred thirty- five (535) questionnaires were entered into SPSS 22; whereby the data were then carefully examined for missing tests. The descriptive data results show that twenty one (21 cases) questionnaires were discovered to have missing responses from the five hundred thirty-five returned questionnaires. They have data missing for rang (2-9) items, which was between (2% - 10%) but below the 30% cutoff,. Then mean replacement method was applied, because the missing data values were found to be missing in a totally random manner (Hawkins & Merriam 1991; Hair *et al*., 2006; Pallant, 2005).

4.3.2 Outlier

Ascited by Al-Somal(2012, P 260), "Both Hair et al. (1995) and Kline (2005) define outliers as cases displaying unreasonable characteristics and which are distinctively different from the rest in the dataset". In the current research, since most variables are measured with Likert 7-point scores ranging from strongly agree to strongly disagree, the threat of outliers is not a concern. If respondents answered strongly agree or strongly disagree, these response options became outliers as they are the extreme points of the scale.

4.3.3 Normality Assumptions

According to Hair *et al*. (2010), Normality refers to the bell-shaped curve of the data distribution for an individual metric variable and its correspondence to a normal

distribution. A normality distribution of sample data is depicted as a symmetrical bell-shaped curve that has the highest range of frequency in the middle with smaller range of frequencies towards the extremes (Gravetter & Wallnau, 2000).

Skewness and Kurtosis are the main tests that can be used to validate normality assumptions (Pallant, 2007). Skewness refers to the measure of normality assumptions by describing the balance of the sample data distribution, that is, is it unbalanced and shifted to right, left or centered side and symmetrical with about the same shape on both sides, while the Kurtosis refers to the measure of normality assumptions by comparing them with a "peakedness" or "flatness" of the sample data distribution (Hair *et al*., 2010).

A normal distribution happens when the value of its skewness and its kurtosis are both equal to zero (Tabachnick & Fidell, 2007). Skewness is clarified by comparing the distribution to a normal distribution. If it possesses a few large values and tails off to the right then distribution is said to be positively skewed. If on the other hand, the distribution has relatively few small values and tails off to the left then is said to be negatively skewed. According to Hair *et al*. (2006), if the Z-skewness of distribution falls outside of the range of -1 to +1, then it is substantially skewed. Z-Kurtosis on the other hand is the measure of the peakedness or flatness of a distribution and like skewness it is clarified by comparing it with a normal distribution. A relatively peaked distribution is denoted by a positive value while a relatively flat distribution is denoted by a negative value (Hair *et al*. 2006). In addition, several researchers indicate that the data is normally distributed if the Z-

value skewness< ±3.0 and the Z-value kurtosis < ±7.0 (Chou & Bentler 1995; Hu, Bentler & Kano 1992; Ghozali, Fuad & Seti 2005).

Despite the fact that PLS is not constrained by normality assumption (Chin, 1998), datasets were initially tested for normality (field, 2009). Normality can be verified by calculating the skewness and Kurtosis ratings in SPSS.

Skewness is a measure of the asymmetry of a distribution whereas Kurtosis measure the degree to which scores cluster in tail of distribution (Hair*et al*., 1995; field, 2009). Most authors consider that a data set is normality if the skwness and kurtosisare within the adequate range (i.e. -3.0 to +3.0) (Hair, et al., 2006). Some of the kurtosis scores were slightly higher than 3 which many authors still consider as acceptable (Hair, Anderson et al., 1995; Tabachnick& Fidell, 2008; Field, 2009). As shown in the table 4.3, the dataset was presumed to be distributed normality. Hence, no transformation remedy was required. Thus the present study also uses graphical methods to show the normality distribution for all the variables as shown in Figure 4.1 (for more details, see Appendix F).

Table 4.3
Results of Skweness and Kurtusis for Normality Test

Constructs	**Skewness**		**Kurtosis**	
	Statistic	**Std. Error**	**Statistic**	**Std. Error**
IBSA	-.588	.106	-.033	.211
Attitude	-.008	.106	-.488	.211
PU	-.438	.106	-.088	.211
PEOU	-.927	.106	1.872	.211
Compatibility	-.646	.106	.309	.211
Trust	-1.320	.106	3.059	.211

Table 4.3*(continued)*

Subjective norm	-.429	.106	-.259	.211
Social Recommendation	-.405	.106	-.602	.211
Prestigious Behavioral	-.652	.106	-.283	.211
PBC	-.965	.106	1.037	.211
Efficacy Self	-1.472	.106	3.861	.211
Government support	-.615	.106	.312	.211
Technology support	-.579	.106	.321	.211
Technology and Internet literacy	-.446	.106	-.085	.211
Resistance technology	.227	.106	-.823	.211
Risk technology	-.280	.106	-.457	.211
Anxiety of technology	-.101	.106	-.070	.211
Information on technology	-.387	.106	.135	.211

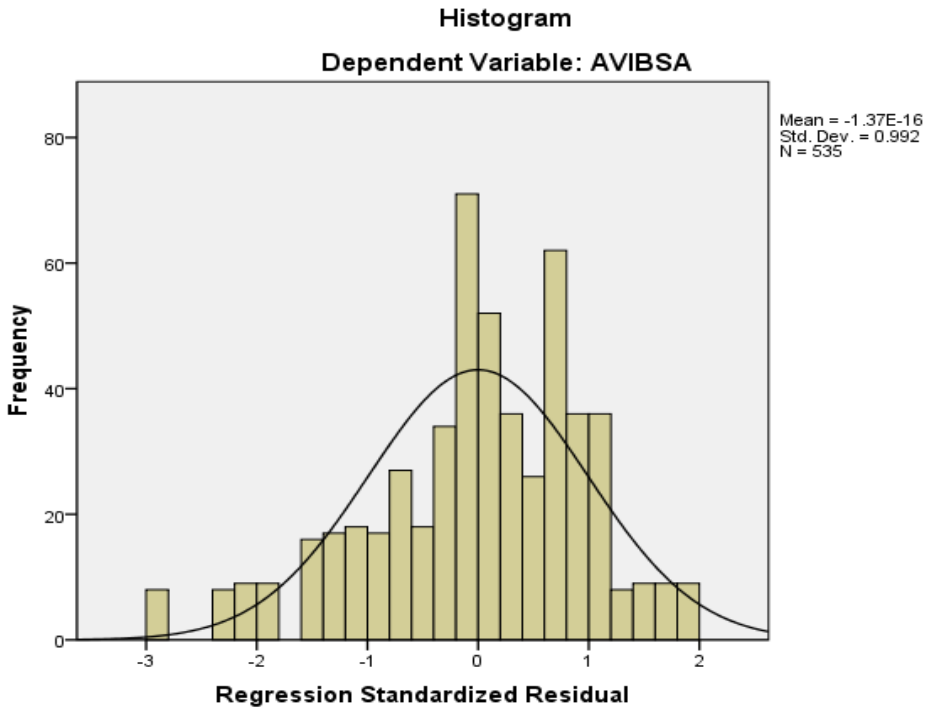

Figure4.1
Normality Assumption

4.3.4 Linearity Assumptions

Linearity shows the degree of change in the dependent variable related with the predictor variable being constant across the values range for the dependent variable (Hair *et al.*, 2010). However, it is considered as an implicit assumption of all multivariate analysis, such as multiple regression, logistic regression, factor analysis, and SEM, based on the correlation of the relationship. Since correlations represent only the linear relationships among variables, nonlinear effects will not be represented in the correlation value (Stamatis, 2003).

Because a linear assumption is appropriate for multivariate analysis, the researchers must assess the linearity of the relationship between the independent variable and the dependent variable by identifying residuals and examining residual plots (Hair et al., 2010; Sheather, 2009). A residual plot is a graph that shows the residuals on the vertical axis and the independent variable on the horizontal axis. If the residual plot shows a random scatter of the points around the horizontal axis, the linear assumption is present in the sample data (Hsu & Poole, 2011).

As can be seen from Figures 4.3, the residual scatter-plot using SPSS v22. The results indicate a straight-line association with predicted dependent variable scores mean of Internet Banking Service Adoption (MIBSA), and in turn did not show any support for non-linearity. Consequently, there was no proof to challenge the linearity assumption (MIBSA) as shown in Figure 4.2,(for more details, see AppendixF).

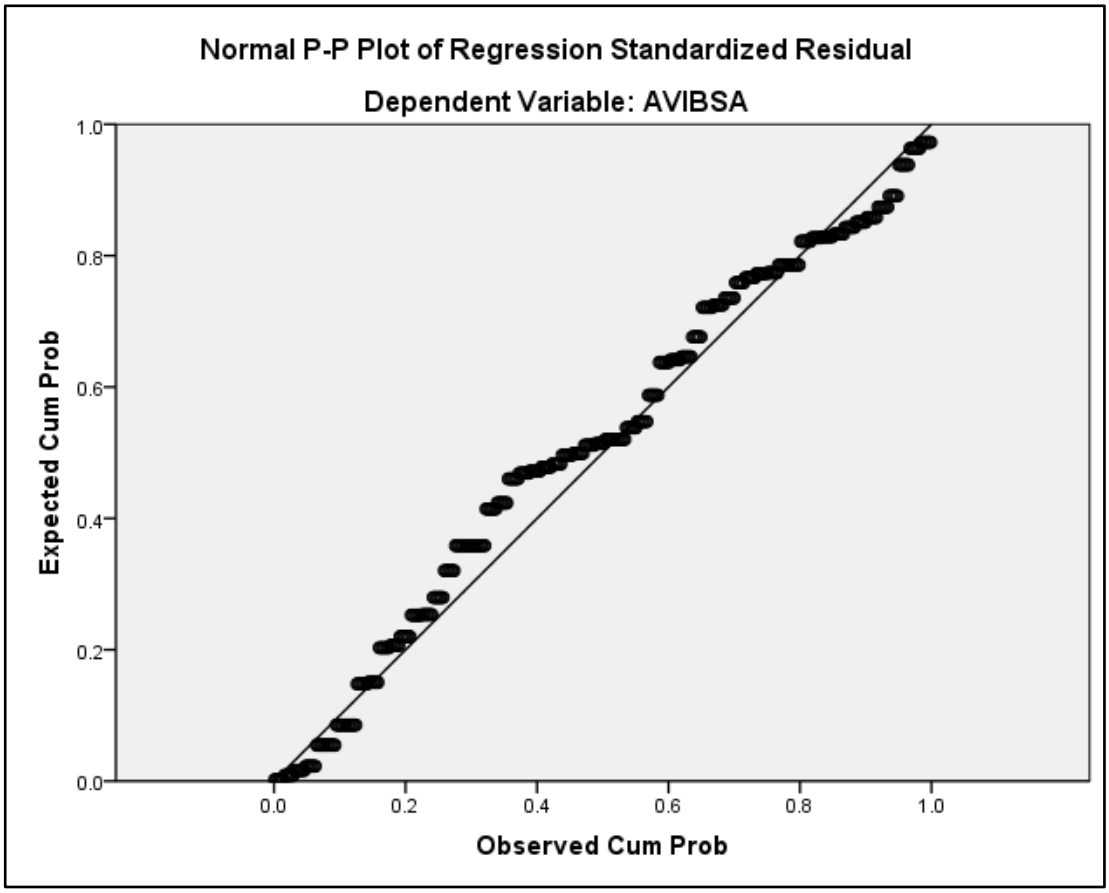

Figure 4.2
Linearity Assumption

4.3.5Homoscedasicity Assumptions

Homoscedasity is characterized by a cloud of dots. On the contrary, non-homoscedasicity can be accurately described as a funnel-shaped pattern that shows an increase in error in direct relation to an increase in the dependent variables (Hung et al., 2006). It is essential in multivariate analysis to avoid the opposite effects of heteroscedasticity, which lead to decreases in the correlation between variables (Hair et al., 2010). It can be checked by looking at the scatter-plot between dependent variables and independent variables. If the residual scatter-plot is captured approximately equal in width for all values of the predicted dependent variable, then

the sample data is homoscedasicity (Tabachnick & Fidell, 2008), as shown in figure 4.3.

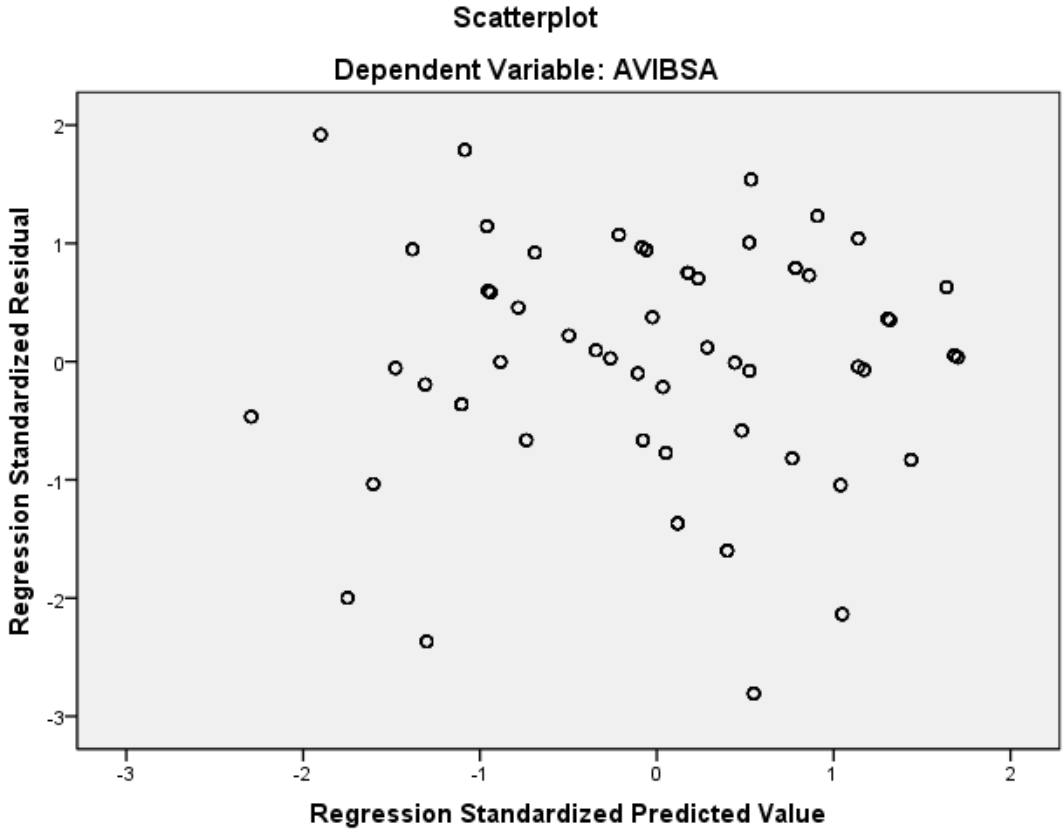

Figure 4.3
Homoscedasicity Assumption

Based on the results from SPSS v22, Figure 4.3 above confirmed that the sample data is assumed to be homoscedasicity. This is because the residual scatter-plot has the approximately equal width for all values of the predicted dependent variable. Furthermore, it also confirmed that the sample data meets the assumptions of normality and linearity (for more details, see AppendixF).

4.3.6MulticollinearityAssumptions

Multicollinearity refers to a problem that occurs when the independent variable is highly correlated with other independent variables within a correlation matrix. The problem leads to a complexity within to determine the specific contribution of each independent variable that predicts the dependent variable (Hair *et al*., 2010; Sekaran & Bougie, 2010). As strongly recommended by Hair *et al*. (2010), multicollinearity assumptions among independent and dependent variables are necessary before performing the hypotheses testing of the model. As generally agreed, the multicollinearity assumptions can be accomplished through testing the Tolerance value and Variance Inflation Factor (VIF) value (Pallant, 2005). Tolerance value is the indicator of determining the dependent variable prediction by other independent variables in the regression variate, while VIF is an indicator of the other independent variables that have impact on the standard error of a regression coefficient. It is Tolerance‘s inverse (Hair *et al*., 2010). Multicollinearity exists when the results show Tolerance values below or equal 0.10 and VIF values higher or equal 10 (Hair *et al*., 2010; Sekaran & Bougie, 2010). Table 4.4 below presents the results of the multicollinearity test using SPSS v22.

Table 4.4
Test of Multicollinearity

Model		**Collinearity Statistics**	
IVs	**DVs**	**Tolerance**	**VIF**
Attitude	IBSA	.733	1.365
Subjective norm		.638	1.566
Technology and Internet literacy		.200	4.990
Resistance technolog		.274	3.647
Risk technology		.551	1.814
Anxiety of technology		.544	1.839
Information on technology		.610	1.638
PBC		.521	1.919

Table 4.4 *(Continued)*

PU	Attitude	.563	1.777
PEOU		.504	1.983
Compatibility		.650	1.539
Trust		.816	1.225
Social Recommendation	Subjective norm	.594	1.684
Prestigious Behavioral		.594	1.684
Self-Efficacy	PBC	.981	1.019
Government support		.838	1.194
Technology support		.824	1.213

One important point observed from the results in Table 6.5, were that the results of tolerance values were in the range between .200 to .981, and VIF values were in the range from 4.990 to 1.019. Hence, the results confirmed that the multicollinearity issue was absent in the interaction among the variables of the present study (for more details refer to Appendix G).

4.3.7 Non-Response Bias

According to Sax *et al.* (2003), non-response bias refers to the prejudice that occurs when respondents' responses to the survey are different from those who did not respond due to diverse demographic factors such as (gender, age, etc.). In this case, Amstrong and Overton (1988) have argued that the respondents who respond late had similar characteristics to non-respondents. If the two groups did not differ in their responses, it is assumed that the non-response bias exists. Then, to determine whether a non-response bias exists, Pallant (2007) stated that the independent samples t-test can be used to test whether it is a non-response through comparison between the early and late responses. In this study, the researcher made use of the t-test to find out whether or not there was a statistically significant difference between the mean scores of the two groups of respondents.

An independent sample t-test was conducted on all variables. The researcher used the comparison with known values for the population method to ensure that the data is free from response bias (Danziger & Botwinick, 1980). Based on the response time (early and late response) discussed above, 450 respondents were classified as early responses and 85 respondents as late responses. Table 4.5 provides the results of the non-response test.

Table 4.5
Group Statistics of Independent Samples t-test (n=535)

Constructs	Early/ Late	N	Mean	Std. Deviation	Std. Error Mean
IBSA	Early	450	5.177	1.188	.056
	Late	85	5.159	1.208	.131
Attitude	Early	450	5.480	.833	.039
	Late	85	5.482	.833	.090
PU	Early	450	5.402	1.013	.048
	Late	85	5.376	1.043	.113
PEOU	Early	450	5.016	1.048	.049
	Late	85	5.035	1.066	.116
Compatibility	Early	450	4.526	1.265	.060
	Late	85	4.488	1.222	.133
Trust	Early	450	4.909	1.033	.049
	Late	85	4.841	1.067	.116
Subjective norm	Early	450	4.583	1.107	.052
	Late	85	4.459	1.142	.124
Social Recommendation	Early	450	4.491	1.049	.049
	Late	85	4.388	1.065	.115
Prestigious Behavioral	Early	450	4.780	1.185	.056
	Late	85	4.782	1.169	.127
PBC	Early	450	5.063	1.200	.057
	Late	85	4.988	1.210	.131
Self-Efficacy	Early	450	5.511	1.053	.050
	Late	85	5.500	1.160	.126
Government support	Early	450	4.434	1.234	.058
	Late	85	4.300	1.307	.142
Technology support	Early	450	5.080	1.103	.052
	Late	85	5.006	1.117	.121
Internet literacy	Early	450	5.214	.766	.036

Table 4.5 *(Continued)*

	Late	85	5.153	.827	.090
Resistance technology	Early	450	4.958	.818	.039
	Late	85	4.894	.838	.091
Risk technology	Early	450	4.802	1.144	.054
	Late	85	4.688	1.149	.125
Anxiety of technology	Early	450	4.608	1.127	.053
	Late	85	4.535	1.144	.124
Information on technology	Early	450	4.748	.907	.043
	Late	85	4.665	.908	.098

The mean for the first group responses and second group are nearly similar as shown above in Table 4.5 (e.g. attitude was 5.480, 5.482 respectively). This is indicated that respondents in both groups are free from data bias.

4.4THE RATIONAL BEHIND CHOOSING PLS-SEM

Since this study deals with latent constructs and the purpose is to explore and investigate relationships among these construct, the PLS could helps in construct testing of the psychometric properties of the scales used to estimate the parameters of a structure model , i.e. the strength and direction of the relationships among the model variables (Lohmoller, 1989; Fronell, 1982, 1987). Many authors have argued that PLS is particularly suited for “predictive applications and theory building" (Gefen, 2000; Straub et al., 2004). PLS-SEM technique is called a second generation structural equation modeling (Wold, 1982). The relatively new technique works well with structural equation models that contain latent variables and a series of cause-and-effect relationships (Gustafsson& Johnson, 2004). The PLS SEM approach is a good and flexible tool for statistical model building as well as prediction (Ringle, *et al.*, 2012).

Specifically, the PLS technique was used in this study for the following reasons. Firstly, structural equations models have been demonstrated to be superior models that perform estimations better than regressions for assessing model (Bambale, 2014; Brown, 1997; Iacobucci, Saldanha, & Deng, 2007; Mattanah, Hancock, & Brand 2004; Preacher & Hayes, 2004). It has been reported that PLS SEM accounts for measurement error and can provide more accurate estimates of construct effects (Chin, 1998a). Secondly, PLS path modeling becomes more appropriate for real world applications and more advantageous to use when models are complex (Fornell&Bookstein, 1982; Hulland, 1999). The soft modeling assumptions of PLS technique (i.e., ability to flexibly develop and validate complex models) gives it the advantage of estimating large complex models (Akter *et al*., 2011). The current study examined the relationships. Because of the complex relationships involved, the use of PLS SEM techniques was appropriate for better prediction.

Thirdly, in most social science studies, data tend to have normality problem (Osborne, 2010) and PLS path modeling does not necessarily require data to be normal (Chin, 1998a). Fourthly, PLS SEM offers more meaningful and valid results, while other methods of analysis such as a software package like SPSS often result in less clear conclusions and would require several separate analyses (Bollen, 1989). Additionally, Tabachnick and Fidel (2007) stated that SEM is one of the most powerful statistical tools in social and behavioral sciences that have the ability to test testing several relationships simultaneously.

In this study, the SmartPLS path modeling was used to establish measurement and structural models. Measurement model was used to explain or assess constructs'

reliability and validity of the current study. Structural model was used to conduct bivariate correlation analysis and simultaneous regressions analyses to establish correlations and relationship effects among the constructs under investigation.

Hair *et al*. (2010) stated that partial least squares (PLS) is now well known as an alternative to SEM method, which includes LISREL and AMOS, among other programs. The PLS path modeling is more suited to complex models such as those with hierarchical constructs (with a complete disaggregation method), mediating and moderating impacts (Chin, Marcolin, &Newsted, 2003). The PLS modeling has to be employed in the initial stage of theoretical development to assess and validate exploratory models. In addition, one of its powerful features is its suitability for prediction-oriented research where the methodology helps researchers to concentrate on the explanation of endogenous constructs. In addition, PLS determines the measurement models and structural models through multiple regressions, whose estimates can be vulnerable to issues of multicollinearity. Lastly, the PLS path modeling can be utilized in reflective as well as formative measurement models (Chin, 1998b; Chin& Newsted, 1999).

4.5TESTING THE MEASUREMENT MODEL

PLS is a second-generation multivariate techniques that helps in construct testing of the psychometric properties of the scales used to estimate the parameters of astructural model,i.e., the strength and direction of therelationship among the model variables (Lohmoller,1989;Fornell,1982,1987). Before, testing the hypotheses of the study, initially,the outer model or the measurement model was assessed by using partial least squares structural equation modeling (PLS-SEM). Here are twosteps

were followed to know the model's goodness of fit. Firstly, construct validity, which includefactor loadings, composite reliability, Cronbach's alpha and convergence validity, was ascertained. Secondly,discriminant validity that includes Fornell and Larcker (1981) criterion was determined. Figure 4.4 shows the model with its structural dimensions and hypothesis.

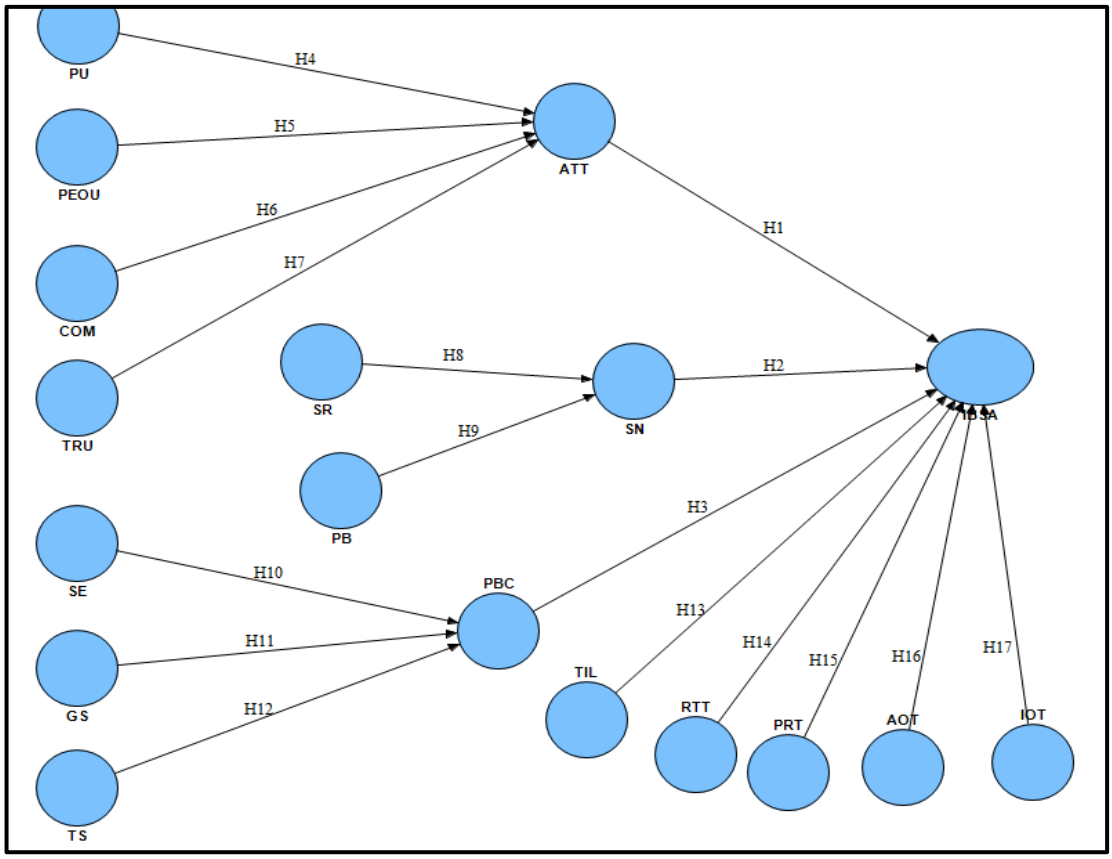

Figure 4.4
The research model

4.5.1 Construct Validity

Construct validity refers to the degree to which the items generated to measure a construct can appropriately measure the concept they were designed to measure (Hair *et al*., 2010). In other words, the researcher should check the construct validity of the research and tap the theorized concept, and in this case, the more construct validity is

utilized the more validity is constructed (Malhotra & Stanton, 2004). This type has two kinds of validity - Convergent Validity and Discriminant Validity.

More specifically, all the items designed to measure a construct should load higher on their respective construct than their loadings on other constructs. This was ensureby a comprehensive review of the literature to generate the items that already have been established and tested in previous studies.

Based on factor analysis, items were correctly assigned to their constructs. Construct validity was ascertained in two ways. Firstly, the items showed high loadings on their respective constructs when compared with other constructs. Secondly, the item loadings significantly loaded on their respective constructs (Fararah & Al-Swidi, 2014; Chow & Chan, 2008). There were only five items deleted which had loading less than 0.5, these items are (TIL3 = 0.499 from Internet technology literacy construct, IOT3 = 0.445 from information on technology construct, ATT1 = 0.496 from attitude construct, RTT3 = 0.294 and RTT2 = 0.079 from resistance to technology construct) for more details, see Appendix H.

4.5.2 Convergent Validity of theMeasurements

The convergent validity is defined as the degree to which a set of variables converges in measuring a particular concept (Hair *et al*., 2010). To establish the convergent validity, many criteria namely the factor loading, composite reliability(CR) and average variance extracted (AVE) were used simultaneously as suggested by Hair *et al.(*2010). In doing that, the items' loading were examined and all the items have

loading more than 0.5 which is acceptable level in the multivariate analysis literature (Hair *et al*., 2010).

The second aspect of the convergent validity is the composite reliability which indicates the degree to which a set of items consistently indicate the latent construct (Hair *et al*., 2010). The process was then to examine the composite reliability values as depicted in Table 4.8.

From the Table 4.8, it can be noticed the composite reliability values ranged from 0.736to 0.950. These values exceeded the recommended value of 0.7 (Fornell & Larcker, 1981; Hair *et al*., 2010). The average variances extracted (AVE) values ranged between 0.502 and 0.826, indicating a good level of construct validity of the measures used (Barclay *et al*., 1995). These results confirmed the convergent validity of the measurement model.

Table 4.6
Convergent Validity Analysis

Constructs	Items	Loading	Cronbachs Alpha	Composite Reliability	AVE
Anxiety of technology	AOT1	0.789	0.797	0.812	0.528
	AOT2	0.517			
	AOT3	0.648			
	AOT4	0.897			
Attitude	ATT2	0.625	0.727	0.832	0.556
	ATT3	0.726			
	ATT4	0.867			
	ATT5	0.745			
Compatibility	COM1	0.849	0.919	0.943	0.804
	COM2	0.899			
	COM3	0.933			
	COM4	0.904			
Government support	GS1	0.809	0.929	0.950	0.826

Table 4.8*(Continued)*

	GS2	0.953			
	GS3	0.947			
	GS4	0.919			
IBSA	IBSA1	0.880	0.748	0.841	0.582
	IBSA2	0.865			
	IBSA3	0.501			
	IBSA4	0.763			
Information on technology	IOT1	0.574	0.732	0.736	0.502
	IOT2	0.509			
	IOT4	0.957			
Prestigious Behavioral	PB1	0.792	0.897	0.924	0.708
	PB2	0.834			
	PB3	0.894			
	PB4	0.885			
	PB5	0.796			
PBC	PBC1	0.758	0.891	0.926	0.757
	PBC2	0.896			
	PBC3	0.915			
	PBC4	0.902			
PEOU	PEOU1	0.880	0.842	0.893	0.676
	PEOU2	0.827			
	PEOU3	0.809			
	PEOU4	0.769			
Risk technology	PRT1	0.792	0.850	0.892	0.674
	PRT2	0.821			
	PRT3	0.876			
	PRT4	0.792			
PU	PU1	0.695	0.863	0.897	0.594
	PU2	0.796			
	PU3	0.776			
	PU4	0.816			
	PU5	0.720			
	PU6	0.812			
Resistance technology	RTT1	0.611	0.453	0.761	0.625
	RTT4	0.936			
Efficacy Self	SE1	0.773	0.866	0.900	0.644
	SE2	0.833			
	SE3	0.856			
	SE4	0.811			
	SE5	0.736			
Subjective norm	SN1	0.792	0.859	0.899	0.641
	SN2	0.891			
	SN3	0.842			

Table 4.8 *(Continued)*

	SN4	0.753			
	SN5	0.712			
Social Recommendation	SR1	0.889	0.883	0.916	0.691
	SR2	0.885			
	SR3	0.919			
	SR4	0.535			
	SR5	0.866			
Technology and Internet literacy	TIL1	0.716	0.755	0.833	0.556
	TIL2	0.677			
	TIL4	0.823			
	TIL5	0.759			
Trust	TRU1	0.806	0.906	0.926	0.678
	TRU2	0.851			
	TRU3	0.884			
	TRU4	0.797			
	TRU5	0.709			
	TRU6	0.880			
Technology support	TS1	0.755	0.884	0.920	0.743
	TS2	0.852			
	TS3	0.932			
	TS4	0.898			

Note:
[a] Composite Reliability (CR) = $(\Sigma \text{ factor loading})^2 / \{(\Sigma \text{ factor loading})^2) + \Sigma \text{ (variance of error)}\}$
[b] Average Variance Extracted (AVE) = Σ (factor loading)^2 / (Σ (factor loading)^2 + Σ (variance of error)}

4.5.3 Discriminant Validity oftheMeasurements

The discriminant validity of the measure shows the degree to which items differentiate among constructs. Simply put, it shows that items used different constructs do not overlap. Therefore, constructs although correlated, yet measure distinct concept. This meaning was clearly explained by Compeau*et al.*, (1999) where he concluded that if the discriminant validity of the measures was established, it means that the share variance between each construct and its measures should be greater than the variance shared among distinct construct. For this study, the discriminant validity of the measures was confirmed employing the method of Fornell and Lacker (1981). As illustrated in Table 4.9, the square root of average

variance extracted (AVE) for all the constructs were placed at the diagonal elements of the correlation matrix. As the diagonal elements were higher than other element of the raw and column in which they are located, this confirms the discriminant validity of the model.

For more specific, to assess discriminant validity of the measurement model in PLS, an average variance extracted (AVE) analysis should be conducted (Gefen & Straub, 2005). AVEs can be calculated using the bootstrap technique offered in PLS. In AVE analysis, the square root of every AVE is supposed to be larger than the correlation of the specific construct with any of the other construct in the model(Gefen & Straub, 2005).

The discriminant validity of the measurements was confirmed by employing the method of Fornell and Larcker (1981). As showed in Table 4.9, the square root of average variance extracted (AVE) for all the constructs were placed at the diagonal elements of the correlation matrix. As the diagonal elements were higher than the other elements of the row and column in which they were located, this confirms the discriminant validity of the outer model.

In sum, having established the construct validity of the outer model, it is assumed that the obtained results pertaining to the hypotheses testing should be valid and reliable.

Table 4.7

Discriminant Validity Analysis

Constructs	**AOT**	**ATT**	**COM**	**GS**	**IBSA**	**IOT**	**PM**	**PBC**	**PEOU**	**PRT**	**PU**	**RTT**	**SE**	**SN**	**SR**	**ITL**	**TRU**	**TS**
AOT	**0.727**																	
ATT	-0.033	**0.746**																
COM	-0.188	0.589	**0.897**															
GS	-0.045	0.025	0.177	**0.909**														
IBSA	-0.301	0.595	0.449	0.001	**0.763**													
IOT	-0.097	0.714	0.593	0.225	0.602	**0.708**												
PM	-0.045	0.538	0.417	0.198	0.221	0.445	**0.841**											
PBC	-0.060	0.562	0.438	0.178	0.364	0.572	0.529	**0.870**										
PEOU	-0.183	0.604	0.584	0.307	0.561	0.737	0.323	0.385	**0.822**									
PRT	0.576	-0.217	-0.333	0.238	-0.398	-0.195	0.010	-0.085	-0.255	**0.821**								
PU	-0.015	0.653	0.445	0.148	0.585	0.806	0.430	0.585	0.640	-0.196	**0.771**							
RTT	-0.109	0.617	0.662	0.261	0.406	0.577	0.557	0.669	0.496	-0.158	0.539	**0.790**						
SE	-0.008	0.415	0.289	0.089	0.255	0.545	0.398	0.552	0.397	-0.199	0.650	0.460	**0.803**					
SN	0.090	0.454	0.347	0.219	0.164	0.359	0.541	0.435	0.322	-0.025	0.436	0.678	0.355	**0.801**				
SR	-0.044	0.601	0.590	0.222	0.357	0.625	0.664	0.732	0.392	-0.072	0.588	0.857	0.501	0.721	**0.831**			
ITL	-0.089	0.725	0.574	0.122	0.610	0.845	0.471	0.677	0.670	-0.239	0.815	0.799	0.637	0.533	0.761	**0.746**		
TRU	-0.078	0.487	0.477	0.290	0.292	0.362	0.432	0.668	0.313	-0.077	0.291	0.698	0.170	0.532	0.654	0.498	**0.823**	
TS	-0.315	0.149	0.248	0.395	0.203	0.207	0.074	0.295	0.261	-0.041	0.191	0.357	0.242	0.161	0.270	0.254	0.326	**0.862**

4.6 GOODNESS OF FIT (GOF) OF THE MODEL

According to Sekaran and Bougie (2010), the goodness of measurement instrument is used to ensure there are stability, consistency, and accuracy between items of each variable. As defined by Tenenhaus *et al*., (2005), a global fit measure (GoF) for PLS path modeling is the geometric mean of the average communality and average R square for endogenous constructs. Therefore, the goodness of fit measure account for the variance extacted by model. To support the validity of the PLS model, GoF value was estimated according to the guidelines set up by Wetzelz, Odekerken-Schroder, and Van Oppen (2009) as given in the following formula:

$$Gof = \sqrt{(\overline{R^2} \times \overline{AVE})}$$

For this study, GoF value was estimated according to this formula, the GoF value was (0.571) obtained.

Table 4.8
Goodness of Fit of the Model

Constructs	R Square	AVE
Anxiety of technology		0.528
Attitude	0.586	0.556
Compatibility		0.804
Government support		0.826
IBSA	0.543	0.582
Information on technology		0.502
Prestigious Media		0.708
PBC	0.337	0.757
PEOU		0.676
Risk technology		0.674
PU		0.594
Resistance technology		0.625
Self Efficacy		0.644
Subjective norm	0.527	0.641

Table 4.8 (*continued*)

Social Recommendation		0.691
Internet technology literacy		0.556
Trust		0.678
Technology support		0.743
Average	0.498	0.655
GOF		0.571

According to table 4.10that showsthe variance explained in dependent variable (IBSA) was 54% this could be explained influence of the IFT, attitude, SN, and PBC toward IBSA. Whereas PU, PEOU, COMP and trust explained 59% of the variance in attitude towards IBSA.Moreover, self-efficacy, TS and GS explained that 34% of the variance in PBC toward IBSA. Whereas, third party support in terms of prestigious mass media and social recommendation explained 53% of the variance in SN toward IBSA.

A comparison was made with the standard values of GoF (small = 0.1, medium = 0.25, large = 0.36), as suggested by Wetzels *et al.* (2009). The Table 4.10 shows that the model's goodness of fit was large, indicating an adequate level of global PLS model validity.

4.7 EFFECT SIZE

As illustrated in Table 4.11, the effect of Exogenous Constructs on the Endogenous Constructs are calculated by the following formula:

$$Effectsize(f) = \frac{R^2_{incl} - R^2_{excl}}{1 - R^2_{incl}}$$

However, the effect size of all theExogenous Constructs as illustrated in Table 4.11 which was between 0.004 and 0.461for all constructs; Therefore, this rang described

according to Cohen's (1988)criterion which 0.02 as small, 0.15 as medium and 0.35 as large.

Table 4.9
Effect Size

Endogenous Constructs	Exogenous Constructs	Effect Size
IBSA	Attitude	0.095
	Subjective norm	0.021
	PBC	0.004
	Technology and Internet literacy	0.047
	Resistance to technology	0.008
	Perceived Risk technology	0.017
	Anxiety of technology	0.039
	Information on technology	0.006
Attitude	PU	0.213
	PEOU	0.029
	Compatibility	0.058
	Trust	0.082
Subjective Norm	Social Recommendation	0.461
	Prestigious Mass Media	0.015
PBC	Self-Efficacy	0.368
	Government support	0.008
	Technology support	0.024

4.8PREDICTION RELEVANCE OF THE MODEL

As it is widely known in the literature of multivariate data analysis, R^2 of the endogenous variable account for the variance of a particular variable that is explained by the predictor variables. Therefore, the magnitudes of the $R^2$for the endogenous variables were considered as an indicator of predictive power of the model. In addition to that, the sample reuse technique was applied as developed by Stone (1974) and Geisser (1974) to confirm the predictive validity of the model. It

was argued by Wold (1982) that the sample's reuse technique to fit, very well, the PLS modeling approach (Gotz, Liehr-Gobbers & Krafft, 2010).

More specifically, the predictive relevance of the model can be examined by the Stone-Geisser non-parametric test (Chin, 1998a; Fornell &Cha, 1994; Geisser, 1974; Stone, 1974). This can be performed employing the blindfolding procedure embedded in smart-PLS 2.0 packages. Blindfolding procedure is design to remove some of the data and handle them as missing values to estimate the parameters.

As indicator by Fornell and Cha (1994), the cross-validated redundancy measure can be a reliable indicator of the predictive relevance of the examined model. If the test criterion, redundant communality was found to be larger than zero for the entire endogenous construct, the model is considered to have predictive validity, otherwise, the predictive relevance of the model cannot be concluded (Fornell & Cha, 1994). Result pertaining to the prediction quality of the model is illustrated in Table 4.12, which indicated that the cross-validated redundancy ofAttitude, IBSA, Subjective norm and PBC were 0.320, 0.311, 0.334and 0.252, respectively. Also the Cross-validated Communalityof Attitude, IBSA, Subjective norm and PBC were 0.556, 0.581, 0.641 and 0.758, respectively. These values were more than zero, indicating an adequate predictive validity of the model based on the criteria suggested by Fornell and Cha (1994). According to Chin (1998a) criteria for R^2 which as (0.67 substantial, 0.33 moderate and 0.19 week) Table 4.12 below shown the R^2 for all endogenous latent variables Attitude, IBSA, Subjective norm and PBC which assessed as moderate.

Table 4.10
Predictive Quality of the Model

Constructs	R Square	Cross-validated Redundancy	Cross- validated Communality
Attitude	0.586	0.320	0.556
IBSA	0.543	0.311	0.581
Subjective norm	0.527	0.334	0.641
PBC	0.337	0.252	0.758

4.9 ASSESSING THE HYPOTHESES TESTING PROCEDURES

After the goodness of the measurements model had been tested and confirmed, the next stage was to test the hypothesized relationships among the constructs.The results of this analysis are used to accept or reject the hypotheses based on the significance of the standardized path coefficient beta weight(β) which illustrates how strong is the relationships among constructs. The (R^2) value, which shows the amount of variance explained by independent variables. Both, (R^2) and path coefficients indicate that how well the model is performing. (R^2) shows the predictive power of the model and the value should be interpreted in the same way as (R^2) in regression analysis. The path coefficients should be significant and consistent with expectations (Chwelos *et al*., 2001).

The software package used to perform the assessment of research model was Partial Least Squares (SmartPLS 2.0).The results of statistical analysis of research model (hypothesized model) was tested by running the PLS algorithm and the path coefficients were then generated, as illustrated in Figure 4.5 and Figure 4.6.

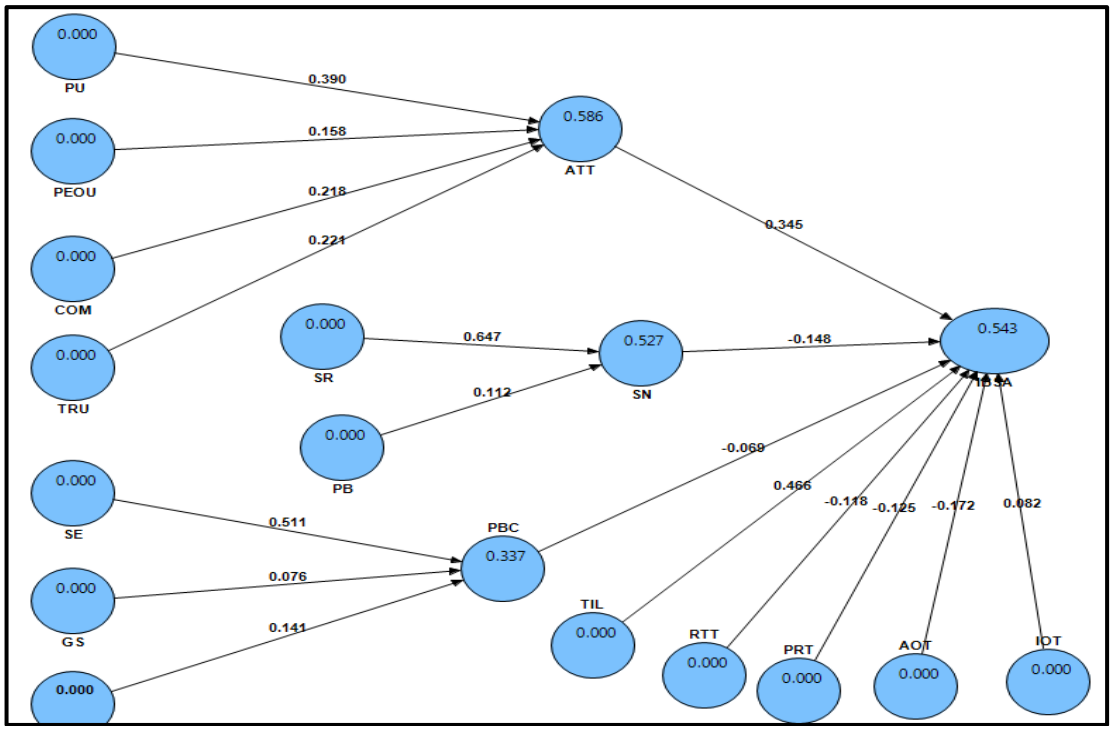

Figure 4.5
Path model results

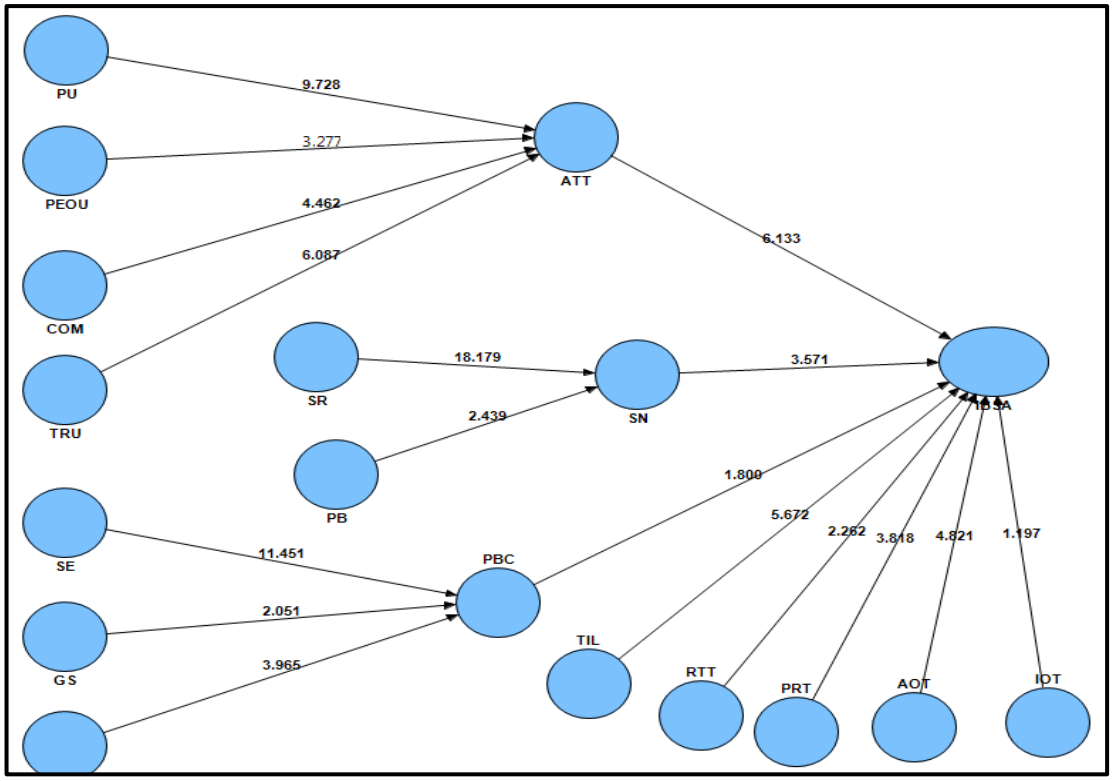

Figure 4.6
Path Model Significance Results

To be able to conclude whether the path coefficients were statistically significant or not, this study applied the bootstrapping techniques embedded with the SmartPLS2.0. To run the bootstrapping of this model, the researcher used 5000 samples as recommended by Hair et al., (2014) with number of cases equal to the observations out of 535 cases. More specifically, the T values accompanying each path coefficient was generated using the bootstrapping technique and subsequently the p values were generated, as reported in Table 4.13.

Table 4.11
Results of the Inner Structural Model

No	Hypotheses	Path Coefficient	(STERR)	T value	P value	Decision
1	ATT -> IBSA	0.345	0.056	6.133	0.000***	Supported
2	SN -> IBSA	-0.148	0.041	3.571	0.000***	Not Supported
3	PBC -> IBSA	-0.069	0.038	1.8	0.036**	Not Supported
4	PU -> ATT	0.39	0.04	9.728	0.000***	Supported
5	PEOU -> ATT	0.158	0.048	3.277	0.001***	Supported
6	COM -> ATT	0.218	0.049	4.462	0.000***	Supported
7	TRU -> ATT	0.221	0.036	6.087	0.000***	Supported
8	SR -> SN	0.647	0.036	18.179	0.000***	Supported
9	PM -> SN	0.112	0.046	2.439	0.007***	Supported
10	SE -> PBC	0.511	0.045	11.451	0.000***	Supported
11	GS -> PBC	0.076	0.037	2.051	0.040**	Supported
12	TS -> PBC	0.141	0.036	3.965	0.000***	Supported
13	TIL -> IBSA	0.466	0.082	5.672	0.000***	Supported
14	RTT -> IBSA	-0.118	0.052	2.262	0.024**	Supported
15	PRT -> IBSA	-0.125	0.033	3.818	0.000***	Supported
16	AOT -> IBSA	-0.172	0.036	4.821	0.000***	Supported
17	IOT -> IBSA	0.082	0.068	1.197	0.116	Not Supported

Note: p<0.10 *; p<0.05 **; p<0.01 ***

There are 14 constructs with significant statistical supported as shown in the table 4.13.The standardised path coefficient of 0.345 seems to indicate that attitude have a

positive and statistically significant effect on IBSA and at 0.01 level of significance (β = 0.345, t =6.133, p< 0.01) (H1). Also, the standardised path coefficient of 0.390 suggests that perceived usefulness have positive and statistically significant effect on attitude and at 0.01 level of significance (β = 0.390, t =9.728, p< 0.01) (H4). In same vein, the results point to a positive and statistically significant effect perceived ease of use on attitude and at 0.01 level of significance (β = 0.158, t =3.277, p< 0.01 (H5). Additionally, the pathcoefficient between compatibility and attitude was 0.158 indicate that has significantly and positively influence toward IBS at 0.01 level of significance (β = 0.218, t =4.462, p<0.01) (H6). And (H7) is positive and statistically significant effect trust on attitude at 0.01 level of significance (β = 0.221, t =6.087, p<0.01).

Furthermore, third party support in terms of social recommendation influences significantly and positively affect subjective norms at the 0.01 level significance (β = 0.647, t = 18.179 ,p < 0.01) (H8). And third party support in terms of prestigious mass media influences significantly and positively affect subjective norms (β = 0.112, t = 2.439 ,p < 0.01) (H9). Also, Self-efficacy significantly and positively affect perceived behavior control toward IBS at the 0.01 level of significance (β = 0.511, t = 11.45, p <0.01) (H10). And (H11) is positive and statistically significant effect Government support on perceived behavior control toward IBSA at the 0.01 level of significance (β = 0.076, t = 2.051 , p < 0.01), technology support significantly and positively affect perceived behavior control toward IBSA at the 0.01 level of significance (β = 0.141, t = 3.965 , p < 0.01) (H12).

Related to individual factors technology (IFT), in this study there are 5 variables all of them supported with researcher excluded, only one isn't supported. The result showed that Internet technology literacy has a positive influence on customers' adoption of Internet bankingat the 0.01 level of significance (β = 466, t =5.672, p <0.01) (H13).Resistance to change has negative influence and significant impact on customers' adoption of Internet banking at the 0.01 level of significance(β = -0.118, t = 2.262 , p < 0.05) (H14),risk of technology has negative influence and significant on customers' adoption of Internet bankingat the 0.01 level of significance (β = -0.125, t =3.818 , p < 0.01) (H15), Anxiety about technology has negative influence and significanton customers' adoption of Internet banking at 0.01 level of significance (β = -0.172, t =4.821 , p < 0.01) (H16). Finally, the amount of Information on internet banking has no influence on customers' adoption of Internet banking (β =0.082, t =1.197, p >0.01), which mean that the H17 is unsupported.

In this study, there were other two hypotheses unsupported, H2 is explained the relationship between subjective norms and IBSA, this relation appeared significantly and negatively influences depend on (β = -0.148, t value = 3.571, and p<0.01). The results also indicated that perceived behavior control significantly and negatively influences IBSA (β = -0.069, t = 1.800, p < 0.05), which mean that the H3 is unsupported.

4.10 SUMMARY OF THE FINDINGS

This study applied partial least squares structural equation modeling (PLS-SEM) as the major analysis technique as well as SPSSV22, since PLS SEM is a relatively new analytical technique in construction. Previously, to test the model of the study,

difficult procedures to establish the validity and reliability of the measurements model were followed. Once the measurement model was revealed to be valid and reliable, the following step was to test the hypothesized relationships. Before testing the hypothesized relationships, the predictive power of the model was investigated and reported and the goodness of the overall model was confirmed. After that, the structural model was observed and the results were reported in detail. As shown in Table 4.14, the hypotheses from H_1,H_4, H_5, H_6, H_7, H_8, H_9, H_{10},H_{11}, H_{12},H_{13},H_{14},H_{15} and H_{16} were statistically supported by the findings of the study, while hypotheses of, H_2, H_3andH_{17} were not supported.

Table 4.12

Summary of the Findings

No	Hypotheses	Decision
1	Attitude significantly and positively influences IBSA.	Supported
2	Subjective norm significantly and positively influences IBSA.	Not Supported
3	Perceived behavior control significantly and positively influences IBSA.	Not Supported
4	PU significantly and positively influences attitude toward IBSA.	Supported
5	PEOU significantly and positively influences attitude toward IBSA.	Supported
6	Compatibility significantly and positively influences attitude toward IBSA.	Supported
7	Trust significantly and positively influences attitude toward IBSA.	Supported
8	Third party support terms of social recommendation influences significantly and positively subjective norm.	Supported
9	Third party support terms of prestigious media influences significantly and positively subjective norm.	Supported
10	Self-efficacy significantly and positively influence perceived behavior control toward IBSA.	Supported
11	Government support significantly and positively influences perceived behavior control toward IBSA.	Supported
12	Technology support significantly and positively influences perceived behavior control toward IBSA.	Supported
13	Technology and Internet literacy have a positive influence on customers' adoption of IB.	Supported
14	Resistance to change has significant impact on customers' adoption of IB	Supported
15	Risk of technology has negative influence on customers' adoption of IB.	Supported
16	Anxiety of technology has negative influence on customers' adoption of IB.	Supported
17	The amount of Information on internet banking has a positive influence on customers' adoption of Internet banking.	Not Supported

4.11 COMPETING MODEL HYPOTHESIS TESTING OF ORIGINAL THEORY (DTPB)

Based on the underpinning decomposed theory of planned behavior (DTPB) (Taylor & Todd, 1995), the competing model of this study was examined as one alternative to examine whether the proposed theoretical model is reliable or not with the actual data. The competing model as shown in Figure 2.5 (Chapter two) did not include six paths between trust and attitude which as is antecedent of attitude toward IBSA, and among of individual factors technology (Internet technology literacy,resistant to technology, perceived risk technology, anxiety of technology, and information on technology) with IBSA .

Table 4.15 provides an explanation of ten positively significant hypotheses thus they are supported through(β, T values and P value) that are acceptable (HI, H2, H3, H4, H5, H6, H7, H8, H10, and Hll). In contrast, only one hypothesis was negatively significant thus unsupported (H9), these values areas recommended by Hair *et al*., (2014). The result of competing model shows more details in Table 4.15.

Table 4.13
Hypotheses Testing Results of Original theory (DTPB model)

	Hypotheses	path coefficient	(STERR)	t value	P value	Decision
1-	ATT -> IBSA	0.617354	0.047743	12.930733	0.000 ***	Supported
2-	COM -> ATT	0.312682	0.05084	6.150361	0.000 ***	Supported
3-	GS -> PBC	0.076141	0.042251	1.802126	0.036 **	Supported
4-	PM-> SN	0.11157	0.051746	2.156117	0.016 **	Supported
5-	PBC -> IBSA	0.099879	0.034304	2.911612	0.002 ***	Supported
6-	PEOU -> ATT	0.157667	0.0578	2.727791	0.003 ***	Supported

Table 4.13 *(continued)*

7-	PU -> ATT	0.414975	0.045967	9.027686	0.000 ***	Supported
8-	SE -> PBC	0.510472	0.050828	10.043105	0.000 ***	Supported
9-	SN -> IBSA	-0.151236	0.040478	3.736227	0.000 ***	Unsupported
10-	SR -> SN	0.646946	0.039126	16.535058	0.000 ***	Supported
11-	TS -> PBC	0.141394	0.037069	3.814381	0.000 ***	Supported

Note: p<0.10 *; p<0.05 ** ; p<0.01 ***

This study attempts to examine the goodness of fit of the hypothesized structural model and the DTPB model.The hypotheses Model supports fourteen significant direct impacts (HI, H4, H5, H6, H7, H8, H9, H10, H11, H12, H13,H14,H15 and HI6) while the unsupported ones are three direct impacts (H2, H3 and HI7). In addition, DTPB model supports ten positively significant hypothesis direct impacts (HI, H2, H3, H4, H5, H6, H7, H8, H10, and H11) while it does not support one direct impact (H9).

As shown in table4.16, illustrated all constructs are satisfactory and convergent validity is adequate when constructs have an average variance extracted (AVE) of at least 0.5 (Fornell and Larcker, 1981). In addition, a comparison was made with the standard values of GoF (small=0.1; medium=0.25; large=0.36). The DTPB model goodness of fit was large (GoF= 0.565) (Wetzels *et al*., 2009), indicating that an adequate level of recommended. It is important to emphasizes the high explanatory power (R^2) achieved in the assets of DTPB model applicable and the results indicated that (R^2= 0.459) as moderate (Chin, 1998).

Table 4.14

Goodness of Fit of the DTPB Model

Constructs	R Square	AVE
Attitude	0.586	0.556
Compatibility		0.804
Government support		0.826
IBSA	0.386	0.721
Prestigious Media		0.708
PBC	0.337	0.757
PEOU		0.676
PU		0.594
Efficacy Self		0.644
Subjective norm	0.527	0.641
Social Recommendation		0.691
Technology support		0.743
Average	0.459	0.696
GOF		0.565

4.12 SUMMARY

This chapter has reported the results of the analysis used to test the hypotheses developed in Chapter 3 relating to IBSA. The finding is from used different statistical analysis techniques namely, SPSS V22, PLS_SEM of the 535 questionnaires where returned for a respondents rate 67%. Then, a test of non – response bias found no statistically significant difference between early and late response. Besides that, descriptive statistics of respondents' demographics factors and variables confirmed that the sample data was meaningful for achieving study objective. Therefore, the issue of non-response bias did not significantly affect the generalization of the results for present study. Then the researcher tested the assumption of normality, multicollinearity, linearity and homoscedasticity, and these results showed that the designed assumptions were generally met.The technique of Partial least-Squares (PLS) analysis, an implementation of structural equation

modeling (SEM), 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. Finally, the next chapter (Chapter 5) discusses the interpretation of the results and the associations between independent and dependent variables in further detail.

To recap, these results provide evidence of mutually beneficial for both the theoretical and practical implication of the study and will help both academics and the practitioners in e-Business in generally, and in Internet Banking area in specifically.

CHAPTER FIVE

DISCUSSION OF FINDINGS AND CONCLUSION

5.0 INTRODUCTION

This final chapter provides a conclusion to the results, presents key theoretical and practical implications that can be drawn from this study, considers the limitations of the work and presents future research directions.

The chapter has nine sections as follows: the first section provides the main indicator of the findings; the second section discussesin full detail the main objectives; section three lists a summary of the study conclusions based on the findings of the quantitative results, and the significant and insignificant antecedents of IBSA in Iraq are included; how DTPB, (underpinning theory) is the most suitable model in this study of IBSA in Iraq is explained in the fourth section; section five provides the main contributions from the theoretical, methodological and practical perspectives; research implications are listed in section six; the seventh section gives details of the limitations of the research, which may also limit the generalisability of the research findings obtained in this study; suggestions for future research and development are provided in section eight; and finally, a conclusion for the study is provided in section nine.

5.1 MAIN INDICATOR OF FINDING

From the 800 questionnaires which were distributed among bank customers who are employees of the public universities in Iraq, only 600 questionnaires were returned, after which they were tested manually (observation).The researcher found that 65

questionnaires were incomplete, and therefore disregarded. Only 535 questionnaires were useful for further steps of analysis with a response rate of 67% (535/800). To illustrate the effect of a possible non-response bias, the demographic data of the present study was divided into two groups based on their response rate (first: n=450, 84%; and second n=85, 16%). The mean for the first group and second group responses are nearly similar as shown in Table 6.5 (e.g., attitude is 5.480 and 5.482, respectively). This indicates that respondents in both groups are free from data bias, and considered adequate to run the statistical analysis techniques, particularly the PLS-SEM analysis techniques.

Under descriptive statistics, the result shows that the demographic factors of respondents may fulfill the overall objectives of the presents study (see Table 4.2). To identify and understand the complex relationship between variables of the present study, the assumption of normality, linearity, homoscedasticity and multicollinearity were explored. First, the values of Skewness and Kurtosis were less than 1 and 3, respectively. The residual plot shows a random scatter of the points around the horizontal axis. Thus, the linear assumption is present in the sample data. Moreover, the residual scatter plot is approximately equal in width for all values of the predicted dependent variable, which assumes the data is homoscedastic. Finally, the results indicate that multicollinearity problem is absent in the interaction among the variables of the present study. In sum, the results confirm that the sample data meets the assumption of normality, multicollinearity, linearity and homoscedasticity.

5.2 DISCUSSION OF THE RESEARCH OBJECTIVES

Considering the issues mentioned in chapter one, the present study follows up on the literature gaps and practical problems in an attempt to shed light on the successful IBS implementation that leads to enhanced adoption in the Iraqi context. To recapitulate, the main objectives of this study are: (1) to identify the most important factors that determine customers' perception towards IBSA in Iraq; (2) to investigate the significant attitudinal factors towards IBSA in Iraq;(3) to investigate the significant subjective norms towards IBSA in Iraq; (4) to investigate the significant factors of perceived behavioral control towards IBSA in Iraq; and (5) to evaluate the applicability of DTPB to explain the antecedents of IBSA in Iraq. The achievement of these objectives would help academic researchers to explain, recognize and explicate the status of IBSA in Iraq. Therefore, the next section discusses the support and the reasons for achieving those results in the Iraqi context.

5.3 DETERMINATION OF THE SIGNIFICANT ANDINSIGNIFICANT ANTECEDENTS

The previous chapter (Chapter 4; section 4.9, in particular) provides a general analysis regarding the hypotheses of this research. Furthermore, since the findings from the quantitative analysis have supported several hypotheses, this section extends the argument by presenting the results from the hypotheses testing. There are 14 constructs with statistical supported as shown in figure 5.1. These hypotheses include the significant relationship between attitude, technology and Internet literacy; resistance to change; risk of technology; anxiety of technology; and IBSA. Also, the significant relationship between perceived usefulness, perceived ease of use, compatibility, trust and customers' attitude toward IBSA in Iraq are explained.

Moreover, the results indicate the significant relationship between third party support in terms of social recommendation and mass media influence as well as subjective norms towards IBSA. The result indicates that there is a significant relationship between self-efficacy, government support, technology support and perceived behavioral control towards IBSA.

In contrast, three hypotheses are unsupported. The results have failed to support the relationship between subjective norms, perceived behavioral control,and information on technology toward IBSA in Iraq.

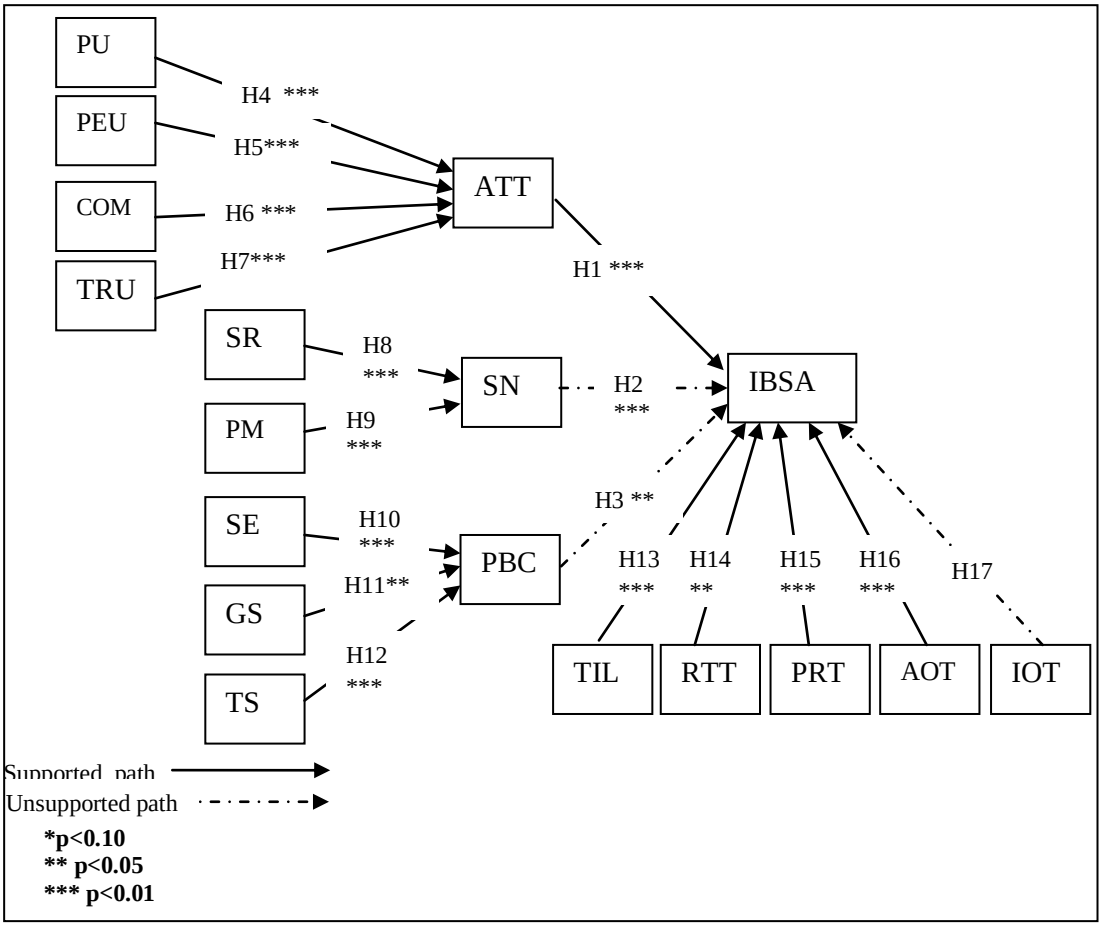

Figure 5.1
Supported and Unsupported Paths among Construct Model

5.3.1 OBJECTIVE ONE: TO IDENTIFY THE MOST IMPORTANT FACTORS THAT DETERMINES CUSTOMERS' PERCEPTION TOWARD IBSA IN IRAQ

The present study predicts that IBSA has eight antecedents: attitude (H1);subjective norm (H2);perceived behavioral control (H3), Internet technology literacy (H13), resistance to technology (H14);perceived risk of technology (H15);anxiety about technology (H16);and information on technology (H17). Five paths (H1, H13, H14, H15 andH16) are found to be supported while three paths are found to be unsupported (H2, H3, H17). The following paragraphs discuss each hypothesis separately.

5.3.1.1 The Relationship between Attitude and IBSA

As expected, empirical evidence from the present study shows that there is a significant and positive influences relationship between the bank customers' attitude and IBSA in Iraq. Thus, hypothesis H1 is supported. Accordingly, this finding is consistent with a number of past studies that have obtained similar results, and indicate that customers' attitude is a good predictor, and plays a very significant role in IBSA (AL-Majali&Nik Mat, 2010b; Karjaluotoet*et al.*, 2002; Chau & Lai, 2003; Ndubisi& Sinti, 2006; Shi *et al.*, 2008; Al-Ajam&Md Nor, 2013).

This result shows that customers of Iraqi banks have developed a high level of positive feelings and favorable attitudes towards IBSA, probably due to the fact that bank customers were already internet users. The results of demographic analysis reveals that the majority of the respondents have been using the internet for more

than six years which indicates that using of internet by bank customers may encourage them to adopt IBS in Iraq without difficulty.

Moreover, this result shows that customers' attitude seems to be a key predictor of IBSA because they find IBSA is a worthy and a enjoyable idea through which they could conduct their financial transactions. Moreover, customers of banks find IBSA helpful to make better decisions in utilizing banking services, as it is compatible with their modern lifestyle and with the modern ways of doing banking transactions. IBS also provides them several advantages, which makes them highly likely to adopt banking services. For instance, it was found that IBS gives them numerous benefits and conveniences. Among these are increased comfort, globally accessible services, lower transactions cost, frequent monitoring of their accounts, cost and time savings, quick responses to complaints, reduced dependency on time and location; better administration of funds which allows history of transactions to be profile in digital format, support for more service variety; and improved services quality without requiring a physical interaction with the bank (Shi *et al*., 2008; Tuchila, 2000).

IBSA have the above advantages over the traditional banking, which makes the bank customers unsatisfied most of the time, because there are more fees associated with operating accounts in traditional banking system, and the fees are generally more expensive than dealing through IBS. These reasons are found to make the bank customers display positive attitudes toward IBSA in Iraq.

The findings equally revealed that the most common services for which Iraqi customers adopted IBSA are: bill payment, balance inquiry and transfer of fund from

one customer's account to another. Similarly, other services such as investment activity and loan application have recently been performed on the increase by the customers through IBSA in the recent past. Thus, these results suggest a positive attitude about IBSA which is crucial for the continued technology acceptance. It can be concluded that the higher the positive attitude, the higher the likelihood that the customers will persistent as IBS adopter.

5.3.1.2 The Relationship between Subjective Norms and IBSA

Subjective norms indicate an individual's perceptions of the social pressure to engage in a certain behavior (Taylor & Todd, 1995). It signifies the belief of a person regarding whether most others who are important to him think he should (or should not) perform the behavior in question (Ajzen & Fishbein, 1980). In relation to technology acceptance, according to Warshaw (1980) subjective norm can be explained thus: if a technology user perceives that an important person to him or her such as the user's manager or father, thinks that the user should use this new technology, the user will incorporate that person's beliefs into his/her own belief structure.

Theoretically, the result of the present study shows that the relationship between subjective norms and IBSA in the Iraqi context was negatively significant. Thus, the finding does not support hypothesis H2 in the current study. This result is consistent with the findings of Ibrahim (2012) in e-filing usage behavior. This is in spite of the fact that the demographic distribution the majority of the respondents indicates that majority of them are married (80%). This means that the bank customers have family

and they have relationships with them, but the relationship between subjective norms and IBSA is still not supported.

This result may also be due to the fact that even though Iraqi banks make IBS available to customers with IBS, they may have not paid adequate attention to improve advertisements related to internet banking, or regular awareness through seminars about what IBSA is so as to inform them about access to their bank accounts from anywhere at any time. Another possible reason that may explain this result of this study is that readily available information are gotten by customers from banks. All these could account for low reliance of potential adopters on their friends, family or colleagues for information about their banking services. In addition, IBS is relatively new in Iraq which means that internet user's consumer-relevant groups have not tried them out.

Thus, banks in Iraq will have to work on improving normative and coercive forces in order to build an IBS adopters' base and create normative expectations. However, in the case of present study, family and media are essential normative determinants influencing IBSA in Iraq. It could be inferred that the bank customers may not get enough influence from their family members and mass media outlets regarding IBSA in Iraq. The banks will be required to build social platforms relating to customers of banks to improve IBSA in Iraq. This will increase IBSA in Iraq, which is still at initial stages of implementation. Achieving this may be through referent groups providing the needed information and recommendations to Iraqi customers about IBSA.

5.3.1.3 The Relationship between Perceived Behavioral Control and IBSA

According to Ajzen (1991), PBC reflects beliefs regarding access to the resources and opportunities needed to affect a behavior. Regarding the results of this study, the relationship between PBC and IBSA in Iraqi context was negatively significant. Thus, the finding does not support hypothesis H3 of the current study. The finding of the current study was in consistence with what was reported in previous studies by Pedersen & Nysveen (2004) in actual usage of mobile services. The negative relationship between PBC and IBSA may be adduced to inadequacy of resources (i.e. internet banking facilities such as own personal computers) which is basically due to government indifference (Cosit, 2011). Thus, customers are only confident of using computers if they have resources to do so they will be more likely to adopt IBS (Ajzen, 1991).

Furthermore, the result of the study may be due to inadequacy or lack of existing e-commerce legislation to protect customers from risk associated with internet transactions/fraud for fair commercial transactions (Alhammadany & Heshmati, 2011b; Jassim & Mubarak, 2010). Lack of this legislation may compound this issue, relating to the PBC as facilitating conditions to encourage customers of bank to adopt IBS in Iraq. Additional explanation for this result could be due to necessity of access resources for conducting IBS transactions on the internet is already in place and is readily available to anyone in the workplace, in universities, or in homes, or from any place, for those interested in using the internet for banking transaction. Consequently, the banks customers may take this ready accessibility for granted and fail to see facilitating condition as a perceived behavioral control that will affect

IBSA in Iraq. Another possible reason is that there may be inadequate self-regulation in IBSA among young users.

Regarding enhancing the relationship between PBC and IBSA, the Iraqi government can play a leading interventionist role in the diffusion of innovation by way of a greater support by government for Internet commerce. Therefore, perceived behavioral control shows belief regarding access to the resources and opportunities that influence a behavior.

5.3.1.4 The Relationship between Internet Technology Literacy and IBSA

The empirical results of the present study show that Internet technology literacy has a high significant and positive effect on adopters of IBS. Thus the relationship between Internet technology literacy and IBSA is supported (H13) in Iraq.This finding is in accordance with related previous empirical findings (Nasri, 2011; Karjaluoto *et al.*, 2002). Avirutha (2012) agreed that customers with more technological knowledge tend to have a positive relationship to adopt new technology. In the same vein, Karjaluoto *et al.* (2002) emphasizes that prior Internet technology experience influences both attitudes towards online banking and actual usage.

The result shows that 29% of the respondents have been using the Internet for more than six years, which means that the respondents have the ability, skills and experience using the Internet. Moreover, the results show that more than half of the respondents are using the IBS from their homes; this indicates that the bank customers have sufficient skillsto use IBS, which asserts that the bank customers in Iraq are able to adopt IBS.When Internet users have accumulated sufficient Internet

experience via their adoption of computer technology, it creates a belief in their ability to use the Internet for commercial purposes. Applied to the IBS scenario,this could lead the organization to provide additional training for their customers to enrich their skills to use such technical methods.

Related to Internet literacy factor, the government should provide some free basic computer training programs which can educate people about the computer and the Internet. The government should also improve support for public access to the Internet. As people have more accessibility and knowledge about the Internet, they will use the services that the Internet can provide, such as online shopping and to pay bills. These incentives should increase the probability of bank customers adopting IBS. Banks should provide free demonstration and computer courses about IBS to their customers, thus enabling those who have attended the courses to have enhanced knowledge and skills to be confident in adopting IBS. Therefore, the adoption rate of Internet banking can be increased when Internet technology literacy rate is high.

5.3.1.5 The Relationship between Resistance to Technology and IBSA

The results of this study show that resistance to technology has a significant and negative effect on IBSA.This result reveals that the relationship between resistance to technology and IBSA is supported (H14) in Iraq. This finding is consistent with the evidence reported in previous research (Alsomali *et al.*, 2009; Sathye, 1999 in an IBSA setting; and Avirutha, 2012 in social media adoption). It is therefore evident that although customers have confidence in their banks and IBSA, they still resist adoption, particularly when the safety of their financial activities via the internet is compromised.

Some people view technology as a threat because it requireschange. Technology conflicts with their prior beliefs because they may be committed to an old way of doing transactions and it may create a high degree of change in their routines. In the same vein, unless such a need is fulfilled, customers may not be prepared to change from the present ways of operating. This is referred to as customer inertia (Daniel, 1999); the need for personal interaction specifically amongst older customers; as well as technology phobia. Daniel (1999) found a high level of customers' inertia to change from their set ways of banking to IBS.

Hence, to increase the rate of using technology, a technology curriculum, training courses and seminars should be provided and taught in schools and universities to address the need for technological skills. This could be done by support from the Iraqi government -they should focus more on ICT infrastructure development and education and training on technological skills. Banks should consider alleviating these concerns by improving authentication processes, increasing education for customers and focusing on making technology more familiar.

5.3.1.6 The Relationship between Perceived Risk Technology and IBSA

Empirical evidence from this study shows that the relationship between perceived risk and IBSA in Iraq is significantly and negatively influenced. Thus, hypothesis H15 is supported. The finding of the association between perceived risk and IBSA in Iraq appears to be supported by other related studies (Farzianpour*et al*., 2014; Nasri, 2011, inan IBSAsetting; and Avirutha, 2012, in social media adoption setting). Several recent studies (Farzianpour*et al*., 2014; Mishra and Mathew, 2013; Featherman and Pavlou, 2003; Jarvenpaa *et al*., 1999; Kolsaker *et al*., 2004; Liao and

Cheung, 2001; Park*et al*., 2004; Pavlou, 2003) have deemed consumer risk perceptions to be a primary obstacle to the future growth of online commerce and e-services in general and IBS in particular.

According to the result, it can be concluded that when customers' perception of the risk of IBSA decreases and their sense of control improves, the possibility of IBSA will increase. This implies that if the adopters of IBS do not feel comfortable with the technology, they will not use it.

In the same vein, the result shows that although the bank customers are confident in their bank and IBSA, their confidence in technology is weak, particularly the safety of their financial activities via the internet (Howcroft *et al*., 2002). Furthermore, this result is perhaps because the bank customers are safety seekers and they want to keep away from risks (i.e., high risks-low adoption and low risk-high adoption towards IBSA). In addition, this implies that internet banking users might worry about delays in receiving online payments and might be concerned with the length of time involved in waiting for the website or learning how to operate it.

One possible explanation is that the internet is an inherently risky environment due to the absence of personal contact, physical product (service) evaluation, warranties or contracts; solid transaction security and privacy protection. In addition, the customers usually have difficulties in asking for compensation when transaction errors occur. Thus, this may explain why many customers resist adopting IBS. Also, this result could be because fraud and identity theft are forefront in the minds of internet users. Thus, providing encryption and strong authentication to prevent fraud

and identity theft should be a priority in this field. The banks should consider alleviating these concerns by improving authentication processes, protecting passwords, supplying sufficient information about site security, giving unconditional loss guarantees, providing accessible customer services and educating customers.

Additionally, the distant and impersonal nature of the on-line environment and the implicit uncertainty of using a global open infrastructure for transactions have rendered risk an inevitable element of IBSA. Although retailers have an important influence on the security of the transaction medium (e.g., encryption, authentication, firewalls), there is still the possibility of third parties compromising the online transaction process. Examples of environmental uncertainty include theft of credit card information, breaches of private information and stealing of personal information by hackers. This research shows that reducing perceived risk is an important factor in IBSA.

5.3.1.7 The Relationship between Anxiety aboutTechnology and IBSA

Anxiety refers to a "persons' emotional reaction when he or she uses a particular technology". The term 'anxiety' is most often used to describe an unpleasant emotional state or condition which is characterized by subjective feelings of tension, apprehension and worry (Abushanab *et al*., 2010).

Theoretically, the result of the present study shows that the relationship between anxiety about technology and IBSA has a significant and negative effect in Iraq. Thus, hypothesis H16 is supported. The results of this study support other studies on actual usage of the e-filing system (Ibrahim, 2012); and actual usage related to

individual computing behavior(Compeau& Higgins, 1995).There might be a correlation between anxiety and nature of online transaction since people with high anxiety are averse to it (Ibrahim, 2012). It is common obstacle to adopting electronic commerce due to the lack of security and privacy protection over the Internet. This justifies why people do not tend to use the online environment. It is important to overcome the adopters' anxiety on the IBSA which is caused by the nervousness and intimidation when using the system, and the concern of losing their data. Hence, the higher the respondents' anxiety, the less likely they will be receptive to IBS.

5.3.1.8 The Relationship between Information on Technology and IBSA

In the present study, the results indicate that the amount of information on technology has an insignificant influence on IBSA in Iraq. Thus, hypothesis H17 is unsupported. Results of this study are similar to Nasri, (2011)and Prakash & Malik(2008) in the IBSA setting.

The plausible explanation for this result is that the bank customers in Iraq still need more information about it. This evidence indicates that greater promotional efforts are needed on the part of banks to create greater awareness of IBSA and its benefits in Iraq, which is important for its success. Therefore, increasing awareness is important to increase the rate of IBS usage. Customers must be made fully aware of the features, benefits and operation of IBS and this would help them develop confidence in using the new services. Therefore, increasing awareness is crucial to increase the rate of internet banking usage. Banks should take advantage of marketing promotions to build their own brand image. Marketing promotions entail not just advertising, but an overarching strategy. The role of banks in this respect

should be prominent by shedding light on the issues that are of interest to the bank customers.

In the Iraqi context, banks must provide information on the great benefits and privileges one can achieve by carrying out online banking transactions. They can launch several promotional campaigns to enlighten the potential users on the benefits and privileges of using these online services; this role can influence customers to use IBS in the future.

It is however interesting to note that awareness of Internet banking products and services did not seem to affect IBSA. This may be due to the fact these respondents, being Internet users, are probably already quite aware of IBS.

Pikkarainen *et al.* (2004) and Guiltinan and Donnelly (1983), in their study, reportedthat IBSA is determined by the awareness level that customers have about IBS and its potential benefits. Hence, the banks must actively promote these benefits, in both traditional and online advertising media.

5.3.2 OBJECTIVE TWO: TO INVESTIGATE THE SIGNIFICANT FACTORS OF ATTITUDE TOWARD IBSA IN IRAQ

Customers' attitude refers to the degree to which they consider favorable or unfavorable (positive feelings or negative) their feelings towards IBSA. The present study shows that attitude towards IBSA in Iraq is accounted for by four antecedents. These are perceived usefulness (PU) (H4), perceived ease of use (PEU) (H5), compatibility (H6) and perceived trust (PT) (H7). All the four paths were found to be supported. The following paragraphs discuss each hypothesis separately.

5.3.2.1 The Relationship between PU and Attitude toward IBSA

According to Davis (1989, p. 320) Perceived usefulness is "The extent to which a person believes that using the system will enhance his / her job performance". The finding of this study shows PU as one of the most important factors that influences the bank customers' attitudes toward IBSA in Iraq. PU significantly and positively affects attitude, thus, H4 is supported. This result is in accordance with previous empirical findings concerning the usage, acceptance and adoption of new technology regarding IBSA (Suh & Han, 2002; Chau & Lai, 2003; Lai & Li, 2005; ALsajjan & Dennis, 2010; Al-Somali *et al*., 2009; Singh, 2012). Thus, previous studies have also revealed that PU is a significant factor in fostering a positive attitude towards accepting/adopting IBS across countries.

This result indicates that customers find view that IBSA can boost and support their banking activities and productivity. In addition, their positive feeling towards IBS enables them to carry out and improve their banking activities as well their job performance.

Additionally, the bank customers in Iraq find IBSA to have many benefits: among which are lower economic costs (reduced commuting, checking and postage expenses), faster service, and convenience in carrying out financial transactions through online access. IBSA is also found to enhance their banking activities through these benefits. Thus, all these reasons could account for the customers' tendency to have a higher level of PU, thereby resulting in more positive attitude toward IBSA in Iraq. Thus, banks should pay more attention toward highlighting these advantages to create a more positive attitude amongst its customers towards IBSA.

5.3.2.2 The Relationship between PEOU and Attitude toward IBSA

PEOU is defined as "the degree to which a person believes that using a particular system would be free of physical and mental effort" (Davis, 1989, p.320). Davis (1989) proposes that customers will be more disposed to accept new technology provided they perceive better ease of its use. In this study, the finding shows that the relationship between PEOU and bank customers' attitude toward IBSA has a significant and positive effect. This result is consistent with numerous past studies which have proven that this construct (PEOU) influences individual behavior in accepting different technologies (Legris, Ingham & Collerette, 2003; Al-Somali et. al., 2009; Lee, 2009; Rouibah, Ramayah & May, 2011).

PEOU is one of the most critical to increase the rate of IBSA. Consequently, the banks in Iraq need to facilitate IBS to be easier by educating the customers on simplest ways to help them go about IBS activities. Davis (1989) indicates that customers will be more willing to adopt new technology, when they perceive the ease of its use.

Further plausible explanation for this result is that individual who perceives Internet banking as easy to use feel they require less effort to operate the system for them to use the service. They may also have experienced high user friendliness of the Internet banking system offered by Iraqi banks. This could probably be because more than half of the respondents (50.2%) have a bachelor's degree.

5.3.2.3 The Relationship between Compatibility and Attitude

Compatibility is conceptualized by Rogers (1983 p.224) as: "The degree to which an innovation is perceived as being consistent with the existing values, needs and past

experiences of potential adopters". In the present study, the result indicates the relationship between compatibility and customers' attitude towards IBSA is significantly positive. This result is in consistency with previous studies (Ndubisi & Sinti, 2006; Eriksson *et al*., 2008; Mansumitrchai & Chiu, 2012; Shareef *et al*., 2011).

This study indicates that compatibility is a major attribute for IBSA showing that bank Iraqi bank customers prefer innovations in their lifestyle. Besides, the rate of those living in city is very high among the respondents (93.8%) who find IBS has numerous benefits, such as time saving, convenient execution and round-the–clock availability.

5.3.2.4 The Relationship between Trust and Attitude toward IBSA

Mayer *et al*., (1995) and McKnight and Chervany (2001) defined trust as the willingness to be vulnerable to the actions of others. Based on empirical result in this study, the relationship between trust and the bank customers' attitude towards IBSA in Iraq has a significant and positive effect. Hence, H7 is supported. This result is supported by some of previous studies which established significant effect of trust on individual attitudes toward adoption of new innovations (Suh & Han, 2002; Jahangir & Begum, 2008; Nor &Pearson, 2007; Grabner & Faullant, 2008; Mansumitrchaiand & Chiu, 2012). In this study, the finding shows that trust is one of the most significant factors to explain a customer's attitude towards using Internet banking.

The findings indicate that trust in using IBS is high and therefore considered as one of the main factors influencing the attitudes of users of IBS because the degree of

uncertainty of a virtual setting for economic transactions is higher than in traditional settings (Nor & Pearson, 2007; Grabner & Faullant, 2008). The main reason for these results could be that the bank customers feel that their information is kept confidential, and as such, they trust the IBS site.

In the context of internet banking, trust has been established as one of the obstacles that hinders individuals from adoption of IBS technology (Nor and Pearson, 2007). Online banking relies on internet which is associated with security issues as its delivery platform. Online transactions involve disclosure of sensitive among parties in the financial transactions and therefore raise concerned about access to critical files and information transferred via the internet (Suh and Han, 2002). The criminal activities of hackers have led to perceived unsafe risk of the internet as frequently highlighted in the mass media. This has further indirectly affected customers' trust level on internet banking.

Customers' trust can therefore be facilitated by banks when there is honesty, trustworthiness and confidentiality in the use of IBS while carrying out their online transactions. Thus, banks in Iraq need to evolve strategies that could improve customers' trust. These strategies may include development of internet technology security, use of encryption and firewall internet technology and operating IBS with online security firms which could decrease the perception of IBS as uncertain and unsafe. In addition, the banks in Iraq can give guarantees to customers by showing genuine concern for security of online transactions. Thus, IBS fraud would be reduced in order to gain more trust from customers to use IBS.

5.3.3 OBJECTIVE THREE: TO INVESTIGATE THE SIGNIFICANT FACTORS OF SUBJECTIVE NORM TOWARD IBSA IN IRAQ

According to Taylor and Todd (1995, p.149), subjective norm is defined as: "Perception that significant referents desire the individual to perform or not to perform the behavior". The present study reveals that the relationship between the third party support influence in terms of social recommendation, prestigious media and subjective norm towards IBSA are found to be supported (H8 and H9). The following paragraphs discuss each hypothesis separately.

5.3.3.1 The Relationship between Third party Support in terms of Social Recommendation influence and Subjective Norm

The result of current study shows that third party support in form of social recommendation influence has a significant and positive effect on subjective norms toward IBSA by Iraq bank customers. Thus, H8 is supported. This result indicates that the bank customers in Iraq are influenced by social opinions to adopt IBS. This finding is validates by previous related studies (Al-Majali 2011; Shih & Fang, 2004; Nor & Pearson, 2008; Ng & Rahim, 2005; Taylor & Todd, 1995).

Based on the results, the third party support in terms of social recommendation influence has a significantly positive effect on customers' decision to adopt IBS in Iraq. There could be accounted for by two reasons. First, the results on the source of knowledge of IBS show that social recommendation plays an important role to promote IBS with 36.4% of the bank customers knowing about the IBS from social discussion. Secondly, the results show that majority of the respondents (80%) are

married, which means that the most of the bank customers are family members and they are influenced by family opinions.

Thus, this factor is one of the most influential towards increasing the rate of IBSA. As such, bank should use peer and family influence of present user of IBS to encourage those around them on the significance of using IBS. This can be achieved through sharing knowledge and advice on IBS matters. The value of IBSA should be promoted to all bank customers.

5.3.3.2 The Relationship between Third party Support in terms of PrestigiousMedia and Subjective Norm

The finding of this study establishes that third party support in terms from prestigious media influence has a significantly positive effect on subjective norms toward IBSA in Iraq banks. In view of this, H9 is supported. This result shows that the bank customers in Iraq are influenced by prestigious media (advertisement, TV, email, etc.) towards IBSA. This finding is consistent with prior empirical findings (Pederson & Nysveen, 2004; Ng & Rahim, 2005; Woon & Kankanhalli, 2007).

The possible reason for this result is due to the fact that bank customers perceived influence of prestigious media and other significant others as well as "unknown others" media. This result is also as a result of the majority of the respondents knowing about the IBS from the TV advertisements (30%) and internet (47%). The results demonstrate the informal contribution of prestigious media to the knowledge and adoption of established norms, values and expectations of IBSA in given social roles and situations.

Besides, this result could also be explained in term of the prestigious media big influence in customers' daily lives. The bank customers are newspaper and magazine readers, TV watchers, radio listeners, and the internet is available in different places, so they can use it most of the time. Moreover, the prestigious media serves as important sources of information for a wide range of topics. Hence, the prestigious media could enhance public's attention on IBSA. It can be a powerful means of disseminating information and promoting activities that are beneficial for society.

5.3.4 OBJECTIVE FOUR: TO INVESTIGATE THE SIGNIFICANT FACTORS OF PBC TOWARD IBSA IN IRAQ

The current study shows that perceived behavioral control towards IBSA in Iraq has three antecedents: self-efficacy (H10), government support (H11) and technology support (H12). All the antecedents are found to be supported. The following paragraphs discuss each hypothesis relating to the antecedent separately.

5.3.5.1 The Relationship between Self Efficacy and PBC toward IBSA

Self-efficacy is defined by Tan &Teo (2000) as "an individual's self-confidence in his or her ability to perform a behavior". The results of the present study demonstrate that self-efficacy has a significant and positive effect on PBC. This result shows the impact of human ability as an important factor with a strong influence on PBC towards IBSA in Iraq. This finding is consistent with the evidence reported in previous research (Nasri & Charfeddine, 2012; Nor & Pearson 2008; Ndubisi, 2004; Chu & Wu; 2004; Tan & Teo, 2000).

This finding also indicates that the bank customers possess the ability and the confidence as the main requirements for the individual's PBC towards IBSA. The result shows that 29% of the respondents have been using the internet for six years and above. The implication of this is that the respondents have the ability and skills to use IBS. Furthermore, the bank customers feel that they have the ability and the confidence in using new software. This could lead the organization to provide additional training for their customers.

The findings show that over half of the respondents are using the IBS from the comfort of their homes indicating the bank customers have the confidence to use IBS even if when there is no one around to guide them on how to do that. In addition, individuals who with skills in using computer and the Internet are expected to be more inclined to adopt Internet banking. This is because the individual feel comfortable to use the IBS with their computer and internet skills. The confidence may be affected by a concern that help is difficult to get when faced with difficulties when using new technology such as IBS. Therefore, it is necessary for the banks in Iraq to equip IBS adopters with the necessary skills to use such technology.

5.3.5.2 The Relationship between Government support and Perceived Behavior Control toward IBSA

The result of the present study indicates that the relationship between government support and PBC towards IBSA in Iraq is significant and positive affect. This is consistent with several past studies (Nasri & Charfeddine, 2012; Tan &Teo, 2000; Eriksson *et al.*, 2005).

This result indicates that bank customers verify that the government of Iraq plays an significant role in supporting IBSA in Iraq by encouraging them to adopt new innovations such as IBS. The results suggest that the bank customers look to the government for possible direction on whether it is worth while or not to adopt IBS. This reveals that the government in Iraq encourages the kind of technology that could lead to better lives for Iraqis. The Iraqi government's actions and decisions to support the telecommunication and IT sectors such as in the areas of taxation and customs duties exemption in the annual returns for IT companies in Iraq (ITU, 2011b; Mawtani, 2011).

Similarly, the government has undertaken several initiatives to facilitate the Iraqi people to connect to the rest of world via high speed internet (ITU, 2012). Therefore, it is not surprising that government support lends credibility as well as feasibility to new electronic commerce applications, such as Internet banking, thereby making bank customers more likely to be accepted as potential adopters.

5.3.5.3 The Relationship between Technology Support and Perceived Behavior Control toward IBSA

The results of this study show that technology support has a significant and positive effect on PBC. This reveals that technology support is a vital facilitating condition to encourage the employees to adopt this service with strong influence on PBC towards IBSA in Iraq. This finding is consistent with the evidence reported in previous research (Hernandez & Mazzon, 2007; Nasri & Charfeddine, 2012).

One possible explanation for this result could be that technology support remains one of the most essential factors required for conducting banking transactions on the internet. This is consistent with the findings of Nasri & Charfeddine (2012), which have reported that the absence of technology support and its development are likely to impede IBS.

Eventually, the Table 5.1 explains the all results of hypotheses and the past studies reported with important reasons.

Table 5.1

Hypotheses andthe Past Studies Reported with Important Reasons

H	Hypotheses	Results	Support from Past studies	Why this result
H1	ATT -> IBSA	Supported	(AL-Majali,M. & Nik Mat, 2010b; Karjaluotoet*et al*., 2002; Chau & Lai, 2003; Ndubisi & Sinti, 2006; Shi *et al*., 2008).	-The customers find IBSA is a good and exciting idea. -The customers find IBS useful to make better decisions in using banking activities. -The customers find IBS provides them a lot of advantages.
H2	SN -> IBSA	Unsupported	(Ibrahim I, 2012; Dauda *et al*., 2007)	-The bank customers may be still not paid more attention to launch advertisements related to internet banking to help them go through IBS activities. -The bank customers are unable to provide the necessary information and give knowledgeable recommendations related IBSA. -Internet banking in Iraq is still in its early stages of implementation, respondents may feel that their referent groups are unlikely to know much about such services. Hence, their influence is not significant in affecting the Internet user's adoption.
H3	PBC -> IBSA	Unsupported	(Pedersen &Nysveen, 2004; Ng & Rahim, 2005)	-This is may be explained by some form of deficient self-regulation in using internet banking among user. -The necessary technology for providing Internet banking services is already in place. Consequently, respondents may take this ready accessibility for granted and not see supporting technology as a facilitating condition. -This is may be the bank customers have feeling that the insufficient of e-commerce laws and legislation to protect customers from internet transactions/fraud and ensure fair commercial transactions.
H4	PU -> ATT	Supported	(Suh & Han, 2002; Chau & Lai, 2003; Lia & Li, 2005; ALsajjan & Dennis, 2010; Al-Somali *et al*., 2009; Singh, 2012)	-The bank customers find IBSA to enhance and support their banking activities and productivity. -The bank customers find IBSA enables them to accomplish their banking activities and improve their job performance. -The customers find IBS provides them a lot of advantages. -The bank customers find IBSA more quickly to achieve banking activities.

Table 5.1 ***(continued)***

H5	PEOU -> ATT	Supported	(Legris, Ingham, &Collerette, 2003; Al-Somali *et. al*.,2009; Lee, 2009; Rouibah, Ramayah, & May, 2011; Al-Ajam & Md Nor, 2013)	-The bank customers feel that they need less effort to operate the system and will use the service. -The bank customers have experienced user friendliness of the Internet banking system offered by banks, since that more than half of respondents their educational level is bachelor (50.2%). - The customers find IBS provides them a lot of advantages.
H6	COM -> ATT	Supported	(Nudbisi & Sinti, 2006; Eriksson *et al*., 2008; Mansumitrchai and Chiu , 2012; Shareef *et al*., 2011;Al-Ajam & Md Nor, 2013)	-The banks customers in Iraq preferred innovations for their lifestyle. -The bank customers find the IBSA meet them numerous benefits, such as save time, convenient execution, and round-the–clock availability. -The bank customers find the banking services fits well with all aspect of their banking activities.
H7	TRU -> ATT	Supported	(Suh & Han, 2002; Nor & Pearson, 2007; Grabner & Faullant, 2008;Jahangir & Begum, 2008)	-The bank customers find the site of IBS is trustworthy -The bank customers feel that their information is kept confidential and as a result, they trust the IBS site. -The bank customers trust the benefits of the decisions of this IBS site.
H8	SR -> SN	Supported	(AL-Majali 2011; Shin & Fang, 2004; Nor & Pearson, 2008; Ng & Rahim, 2005; Taylor & Todd, 1995).	-The bank customers, when they are marriage members and they will be more influenced by opinions of others. - The bank customers are doing banking activities, when they are influenced by others opinions. - The bank customer influence by social recommendation.
H9	PM -> SN	Supported	(Pederson & Nysveen, 2004; Ng & Rahim, 2005; Woon & Kankanhalli, 2007)	-The bank customers are newspaper and magazine readers, TV watchers, radio listeners, and the Internet is available in different places. - the prestigious media plays important role to promote IBSA -The prestigious media are available in a wide range in the customers' lives.
H10	SE -> PBC	Supported	(Nasri & Charfeddine, 2012; Nor & Pearson, 2008; Ndubisi, 2004; Chu & Wu; 2005; Tan &Teo, 2000)	-The bank customers have the ability, skills and experience to use IBS -The bank customers feel that they have the ability and the confidence in using new innovation.
H11	GS -> PBC	Supported	(Nasri & Charfeddine, 2012;Tan &Teo, 2000; Ndubisi, 2006; Hernandez	-The customer’s bank feels that the Iraqi government is active in setting up the facilities to enable Internet banking service. -The government in Iraq encourages the kind of technology that could lead to

Table 5.1 ***(continued)***

			& Mazzon, 2007)	better lives for Iraqis. -The bank customers feel that the the Iraqi government endorse Internet banking service.
H12	TS -> PBC	Supported	(Hernandez &Mazzon, 2007; Nasri & Charfeddine, 2012; Ndubisi, 2006)	- The bank customersfind the technology support is one of most important as needed required for conducting banking transactions on the internet. -The bank customersfind that the faster Internet access speed is important for their internet banking activities. -The bank customers find that the Internet banking more feasible.
H13	TIL -> IBSA	Supported	(Nasri, W., 2011; Karjaluoto *et al*., 2002). Avirutha, A., 2012)	-Bank customers have the ability, skills and experience with Internet since, the result shows that 29% of the respondents have been using the internet for six years and more. - Bank customers feel that computer and internet literates keep them with using internet banking services. -Bank customer find IBSA familiar, they have the knowledge since more than half of respondents in education level is bachelor.
H14	RTT -> IBSA	Supported	(Alsomali *et al*.,2009; Sathye, 1999; Avirutha, 2012)	-This could be due to customer inertia (Daniel, 1999), need for personal interaction especially among the senior customers or technology phobia.
H15	PRT -> IBSA	Supported	(Nasri, 2011 ;Farzianpour *et al*.,2013 ; Avirutha, 2012)	-The internet is an inherently risky environment due to the absence of personal contact, physical product. - Facts of fraud and identity theft are forefront in the minds of Internet users. -The bank customers are safety seekers and they want to keep away from risks.
H16	AOT -> IBSA	Supported	(Ibrahim, 2012; Compeau & Higgins, 1995)	-Bank customers scares from lose of information when the hitting the wrong key, therefore they are feeling nervous about using Internet banking. -Bank customer is more sensitive about identity theft are forefront in the minds of Internet users, since the online environment is very risky.
H17	IOT -> IBSA	Unsupported	(Nasri, 2011; Prakash & Malik, 2008)	-This may be due to the fact these respondents being Internet users are Probably already quite aware of Internet banking service. -Bank customers care more about others factors.

5.4 UNDERPININNG THEORY OF DTPB

Literature has shown that most technology adoption theories and models relating to behaviour have been developed in advanced countries (Abushanab, Pearson & Setterstrom, 2010, p. 494). In addition, the DTPB has also not been validated empirically in the Middle Eastern countries, (Al-Majaly, 2011, p. 39). No previous studies have been done in Arab countries in general, and in Iraq specifically. Thus, this study intends to fill this gap, the finding of this study have successfully taken into consideration the issues of generalization of this theory. The researcher wants to create and validate a research model that will demonstrate IBSA among university employees using DTPB, and achieving this by the fifth objective.

5.4.1 OBJECTIVE FIVE: TO ASSESS THE APPLICABILITY OF DTPB (UNDERPINNING THEORY) TO EXPLAIN THE ANTECEDENTS OF IBSA

According to the objective five of the study, which was to evaluate the applicability of DTPB (underpinning theory) towards explain the antecedents of IBSA in Iraq. This study has found that the DTPB theory has succeeded to explain IBSA amongst university employees in Iraq very well.

According to Table 4.16 (in chapter four), the results show that the competing model of DTPB indicates that there are eleven direct effects (HI: attitude to IBSA; H2: subjective norm to IBSA; H3: perceived behavior control to IBSA; H4: perceived usefulness to attitude; H5: perceived ease of use to attitude; H6: compatibility to attitude; H7: social recommendation to subjective norm; H8: prestigious media to subjective norm; H9: self-efficacy to perceived behavior control; HI0: government support to perceived behavior control; HI1: technology support to perceived behavior

control. In addition, DTPB model supports ten positively significant hypotheses show direct impacts. Thus, they were supported (HI, H2, H3, H4, H5, H6, H7, H8, H10, and Hll) while it does not support one direct impact (H9).

Therefore, these results in Table 4.16, asserted that DTPB can be employed to explain the antecedents of IBA in the context of Iraq customer adoption of ISB. Also, the DTPB model goodness of fit of 0.459 was found to be substantial. This indicates robustness in IBSA model. Thus, the DTPB model well demonstrates IBSA of the bank customers in Iraq.

5.5 RESEARCH CONTRIBUTIONS

This research presents one of the earlier efforts to gaining an understanding of the adoption and diffusion of IBS in developing Arab countries in general and in Iraq Republic in particular. Also, the study is one of the very few empirical investigations that address the issue of adoption and diffusion of IBS from the perspectives of individual customer/user level of IBS.

The contribution of this study has several areas of implementation practically and empirically. This study uses the theory of DTPB. This is the first time that this theory is used in the Iraqi context in particular. DTPB is an effective theory that can be used in an IBS setting, especially to examine public university employees. The researcher finds that some findings correspond to a cluster of earlier studies and are inconsistent with others. These inconsistencies are based on whether these studies are applicability of the IBSA in the current context. The adoption of the DTPB is a

unique contribution to knowledge. The contributions are discussed in terms of their theoretical, practical, and methodological in context of Internet banking in Iraq.

5.5.1 Theoretical Contribution

The contributions to the body of theoretical research in present study are made by addressing the gap in IBS implementation. First, the present study introduces IBSA as a dependent variable. According to Hong *et al*. (2013,P.24), over the last decade, a vast majority of IBS studies (2000-2011) only investigated the respondents' intention to adopt (Tan & Teo, 2000; Shih & Fang, 2004 & Hernandez & Mazzon, 2007) or made a comparison between adopters and non-adopters (Sathye, 1999; Suganthi *et a*l., 2001; Gerrard and Gumingham, 2003; Akinci *et al*., 2004; Chan & Lu, 2004; Laforet & Li, 2005; Lee *et al*., Gerrard *et al.*, 2006; Awamleh & Fernandez, 2006; Polasik & Winsniewski, 2009 & Foon & Fah, 2011), rather than investigating the Internet banking adopters "actual usage".The present study attempts to address this gap in IBSA, given that there are very few empirical studies that have focused on actual usage. According to Tan & Teo (2000); and Chan & Lu (2004), the study on Internet Banking can only be examined when the Internet banking adopters have reached a critical mass. Without a good understanding about the adopters of Internet banking, it would be challenging to understand the contributing factors that make Internet banking adopters continue to adopt Internet banking.

Secondly, the current study incorporates individual factors affecting technology adoption (resistance to technology, anxiety to technology, internet technology literacy, perceived risk of technology, information on technology), social recommendation influence, trust, prestigious media influence, self-efficacy,

technology support and government support) as the primary variables that contribute to this study. The research further provides a theoretical understanding of how the influences of these variables are considered important variables in the Iraqi IBSA context.

Overall, the present research proved that the proposed extension to the DTPB theory is valid in the context of both western and non-western cultures which indicate that the aggregated model of technology acceptance theories (DTPB) are relevant and useful to examine usage behavior (IBSA) in non- western cultures like Iraq. Given that DTPB has not been used much in Arabic countries generally and Iraq in particular; the use of DTPB in this study could be considered a big contribution and strongly suggests that the external variables will improve the power of the DTPB theory. This is consistent with the position of Bagozzi and Dabholkar (2000) who pointed out those external variables of a model could provide insight to help in predicting behavior when using another external variable of IBSA with DTPB.

Beside, results of empirical analysiscontribute to understanding of IBSA and DTPB. The study is also the first study conducted in the Arab Gulf, especially in internet banking and specifically concerning Iraq that use individual technology related factors such as antecedents of IBSA and DTPB.

The present study contributes to the knowledge by investigating the direct relationships among new variables in area of technology acceptance in developing nations, specifically Iraq, and formulating new version of the DTPB, while utilizing the parsimonious of the DTPB.

Similarly, the application of the PLS-SEM in the present study is also considered a methodological contribution. This is because the SEM produces better quality results with more accurate estimates in multivariate methods. Furthermore, to date, there are only few previous studies in the IBSA setting that have applied SEM for testing hypotheses. PLS is applicable to small samples estimation as well as hypothesis testing converges better for large models with many variables or constructs.

7.5.2 Practical Contributions

The study contributes to developing and Arab countries by choosing Iraq, which is considered as a developing Arabic country. The present study could be the first of its kind in Iraq, to investigate the relationship among IBS adopters and its antecedents in the Iraqi context.

The research without practical implication hasno fully meaning in terms of applications. The findings of the present study provide many practical implications have been identified as follows.

In recent years, Internet banking plays an increasingly important role in the banking industry and the previous retail boom. Consequently, the banking business has given riseand spawned new products and services and given the high valuable of its operations and services, the banking sector is relatively open to innovative technologies. The current study focuses on actual users of IBSA. Customers hold the key to banks' continued existence and retaining current customers is less expensive than attracting new ones (Kotler & Armstrong, 2008). The contributions of the

finding of this study come from the importance of all the variables as antecedents of IBSA in Iraq. Using any information in this study could be beneficial for the banks in Iraq to create relevant strategies and policies.

These findings may help the policy makers and service providers to arrive at better policies and strategies for future development in Internet banking or mobile banking. To enhance customer experiences, banks should not only focus on improving the Internet banking transactions but should also develop a better system or platform to interact with Internet banking adopters. This effort will help the banks to build a strong relationship with the adopters and indirect word-of-mouth will create a positive image for the banks. It appears that the service providers must ensure that the Internet banking is user-friendly and has simple instructions to conduct the transactions.

5.6 RESEARCH IMPLICATION

Given the importance of widespread adoption of IBS and the slower than expected growth and usage of IBS among Iraqisthere is a great need for more understanding of what factors are important in the adoption of IBS. Theoretically grounded in a technology-individual-environment framework, this study represents an early attempt to examine these factors. Moreover, findings of this research have a number of important implications that may assist financial executives, bank executives, technology consultants and government and policy makers to facilitate customers' adoption of IBS. These implications are discussed below.

First, the formulating new version of DTPB is applicable to Arab Gulf, specifically Iraq with a varying degree of explanatory power. The success of the integration of

Internet technology literacy, resistance to technology, perceived risk technology, anxiety to technology, information on technology, trust, social recommendation influence, prestigious media influence, self-efficacy, technology support and government support structure in the DTPB model is evident from the results of the study, which indicates the need for examining other possible variables that might provide more power in explaining online behavior in developing Nations. Second, the extended DTPB model can be employed for explaining other online behaviors, such as e-commerce or e-shopping.

The present study introduced many of findings related to important factors that have a strong impact on IBSA in Iraq. Therefore, these findings have several valuable implications for banks and other organizations venturing into e-business in the Iraqi context, similar to other developing countries.

Through the results which achieving in this study, decision-makers within the financial sector can visualize the role of the bank customers' attitudes towards IBSA in Iraq as significant, which means that they are willing to adopt these services. The banks can develop intensive promotion strategies to attract the customers, by showing the benefits of this service, the system’s usefulness and the values created through the reduction of cost and time.

In addition, from the findings of this study, the banks could allow the customers to have the opportunities to try this service first; which can contribute to achieving some sort of comfort for them as they become more willing to use this service. The opportunity to try IBS will reduce their uncertainty and fears of using the IBS, and

enhance the customers' trust, which are two other factors that have a highly significant effect on employees' attitude towards IBSA in Iraq. Therefore, the banks must reduce customers' perceptions of risk in financial transactions, especially those related to IBS in Iraq by increasing safety and systems security for bank websites. Also, the banks should make the customers more aware about IBSA through the provision of more information about using it and explanations of additional services that could be obtained from it.

This study gives an insight into IBS in Iraq, which has not previously been investigated. In particular, the study highlights issues to assist Iraqi bankers to implement these services more effectively. Advertising by prestigious media could lead to increased usage of internet banking, while positive role of individual technology factors seems to have a high impact on usage behavior. Satisfied customers tend to keep up with their current delivery channel.

The present study indicates that individuals' behavior to use Internet banking is influenced by people who are closest to them. Third party support in terms of social recommendation and prestigious media has a strong influence on bank customers towards IBSA. Advertising and promotional efforts by banks need to take account these reference groups. Banks may consider using positive testimonials from these reference groups to promote Internet banking usage. The banks and other organizations could launch free training programs for the customers, help those using IBS and increase the abilities and skills to use this service as easily as possible. Last, but not the least, the banks can offer new strategies by requesting the Iraqi government to issue laws and legislations, which could control transactions via the

Internet and support the banks in providing the customers with new services that could lead to better lives.

5.7 LIMITATIONS OF THE STUDY

As with any study, there are limitations to this research. Even though it can be said that the empirical evidences of the present study are interesting, they should be considered in light of the research process inherently some limitations: first, this study reports a limitation with respect to sample size in the present study, which is relatively small. However, the finding of this study reflected only the behavior of staff in public university in Iraq, and it is neglect others sectors such as private sectors, banks's employees, students, etc. Another limitation is the high number of male customers. About 65% of the respondents were male. This reflects the employees' gender composition at the universities who participated in this study. The high composition of male customers may bias the result in terms of effect of gender on actual behavior. Thus, the results of this study should be interpreted cautiously.Furthermore, the main aim of this study was to examine the factors that could direct influences toward IBSA, it neglects the role of moderators. The moderators should also be taken into consideration for instance education level and language.Finally, regarding the study approach, the present study only employed the quantitative approach.

5.8 FUTURE RESARCH

Most of the recommended future research discussed in this section is related to overcoming study limitations presented in the previous section.The results of this study provide opportunities for future research in relation to acceptance of internet banking. As the model tested in this study is produced from the perspective of public sector employees(public universities), a future study can explored with a focus to measure IBSA the among the private sector employees, either in and outside Republic of Iraq.Moreover, indicators of the security situation and the overall situation in Iraq areextremely sensitive because of the bad security conditions, the researcher suggests that taking samples of Iraqi expat.Future research may add others varabiles could be effect acceptance of internet banking in Iraqis context. Morover, The moderators should also be taken into consideration for instance education level and language. Future studies can also focus on non-Internet users to investigate their adoption intentions of such services.

Since the Internet banking services are still relatively new in Iraq there's still need for further investigation into the adoption of internet banking services. A comparative study could also be conducted to compare between Iraq and other countries. Given that, the present study depends on the DTPB theory, future research could uses other theories related to technology acceptance and applied in the Iraqi context. The researcher in present study used a quantitative approach for investigation the relationships between the variables of the present study. Further research should be done both quantitative and qualitative approach in order to determine other factors that could lead to enhance and improve the acceptance of internet banking in Iraq.

5.9 CONCLUSION

The major aim of the present study is to investigate the factors that could influence IBSA in the context of Iraqi employees. A total of 535 questionnaires were used for data analysis, using PLS_SEM.There are 14 constructs with significant statistical supported and three unsupported relationships in this study. Firstly, direct statistical supportedby antecedents of IBSA are attitude, Internet technology literacy, resistance to technology, perceived risk of technology, and anxiety about technology, but not subjective norms, PBC and information on technology. Secondly, direct significant antecedents of attitude are PU, PEOU, trust and compatibility. Thirdly, direct significant antecedents of subjective norms towards IBSA are third party support in terms of social recommendation and also prestigious media influence. Fourthly, direct significant antecedents of PBC towards IBSA are self-efficacy, government support and technology support. Therefore, all the direct relationships are supported, except subjective norms, PBC and information on technology towards IBSA.

The researcher suggested formulating new version of DTPB model which explain of the integrated model in online environment context. The proposed extension integrated Internet technology literacy, resistance to technology, perceived risk of technology, anxiety to technology, information on technology,trust, social recommendation influence, prestigious media influence, self-efficacy, technology support and government support in the DTPB model in an Iraqi context. As mentioned earlier, this work supports the application of the DTPB, which was established in developed countries, to other non-western cultures or developing countries, like Iraq.

While Iraq wrestles with a pickup in brutal violence again, the country's bankers continue to painstakingly modernize and build a banking sector that is crucial to the country's economic resurgence. Iraq is a modern society for two main reasons. Firstly, Iraq boasts a free market orientation and becoming a technologically advanced nation is one of Iraq's top priorities with better access to the internet and the information available on the World Wide Web. Secondly, Iraq's immense potential has yet to be tapped to make it resilient in the Middle East with advanced information technology features (Heshmati&Alhammadany, 2014). This will allow the broad coverage of the market and even more strong competition given the market size. If the world is becoming smaller because of the internet technology and ICT, it is natural that information flowing liberally can change Iraqis' perceptions and expectations. The Iraqi government should foster the process of making necessary investments and adjustments in the Internet infrastructure and systems in order to be able to meet the proper demands and needs of the citizens. Promotion of the use of the Internet in productive activities, like Internet banking, e-government, education and business will certainly help in availability and effectiveness. Therefore, where the digital divide is being minimized based on ICT distribution; it is acceptable that the DTPB model be applied for predicting the acceptance of the technologies in Middle Eastern countries, such as Iraq.

Overall, the results of the present study indicate that the model provides a good understanding of acceptance of the technologies within technology acceptance theories research and in online behavioral contexts. The decomposition approach adopted by the theory provides a more complete set of antecedents that can better

explain the acceptance a specific technology (i.e. Internet banking), thus enhancing the practical contributions of this study.

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