

Actual Transaction Behavior of Internet Banking Services among Iraqis Customers Using PLS Approach

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Abstract- The main purpose of this research is to identify the factors that encourage adopters to take up the Internet banking services in Iraq. This paper is concerned with an empirical investigation of individual factors technology that could predict successful IBSA in Iraq through the applications of planned behavior theory (TPB). This study uses sampling units in a questionnaire survey data of 535 Iraqis public university employees as customers of internet banking services who were using it already. This study applied partial least squares structural equation modeling (PLS-SEM) as the major analysis technique as well as SPSS, since PLS-SEM is a relatively new analytical technique in construction. The findings of this study suggests that attitude and perceived behavior control (PBC) have significant and positively influences IBSA, while Subjective norm (SN) is unsupported. Related to individual factors technology (IFT), in this study there are 5 constructs all of them (technology and Internet literacy, resistance to change, risk of technology, and anxiety of technology, and trust of technology) supported with researcher expectation.

Index Terms- TPB, Actual Transaction, Internet Banking, IFT, Republic of Iraq, PLS.

I. INTRODUCTION

The Internet, and its associated technologies, are 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). Technological developments have 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, & Nabi (2011), Internet banking has been growing significantly, and has a direct impact on the way businesses are conducted.

Despite more and more banks began to provide Internet banking services to their customer, however, recent indicators show that the rate of internet banking service usage in Iraq is only 1% of total clients (Ipbl, 2012; KIB, 2012; Niqash, 2012; International Research & Exchanges Board, 2011; ITU, 2010). This evidence seems to imply that Internet Banking Services (IBS) in Iraq are still at very minimal levels. There is therefore the necessity to have more research to investigate factors

influencing the customers' behavior towards adopting Internet Banking in Iraq (Shendi, 2011; Mohsen, 2010).

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.

Based on the review of past literature related to Internet banking, it shows that several studies focus on intention to use (Tan & Teo, 2000; Shih & Fang, 2004 & Hernandez & Mazzon, 2007) or focus comparison between 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., 2003; Gerrard et al., 2006; Awamleh & Fernandez, 2006; Polasik & Winsniewski, 2009 & Foon & Fah, 2011), rather than investigating the Internet banking adopters (Hong et al., 2013). However, this study focuses on encourage adopters to take up the Internet banking services. This is because empirical research on this issue is very limited. Therefore, this study aims to fill up this research gap and provides an empirical evidence.

Hence, there should be more researches on the Internet banking adoption be conducted to explore and unearth the underlying contributory factors and to indirectly spur the interest in this area of research. The purpose of this research is to investigate the factors that influence adopters to continue adopt Internet banking.

Prior researches may not have identified all the issues involved in adoption and use and may be limited in other ways. Scholars face challenges researching this area due to fragmented findings and methods over three decades of study (Hoehle et al., 2012, P. 1). There is however a lack of published work which explains the factors supporting IBSA, from customers' perspectives in the context of developing countries in the Middle East in general, and in Arab countries, in particular, Iraq (Mahdi, 2011, p. 5534; Shendi, 2011, P.17; Al-Somali et al., 2009, P.13). IBSA, in previous studies, has shown mixed findings (Al-Majali, & Mat, 2011, p. 2; Ndubisi & Sinti, 2006, p. 16).

This scenario is not unique just for Iraq – in spite of the many benefits that both customers and banks obtain from Internet banking, acceptance of this technology is very varied in all parts of the world (Alnsour & Al-Hyari, 2011, p. 5).

II. LITERATURE REVIEW

According to Ajzen (1991), TPB consists of actual behavior, behavioral intention, attitude, subjective norm, and PBC. TPB states 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. TPB postulates that attitude, subjective norm and PBC influence the behavioral intention to use a technology. These are defined as follows:

Attitudinal beliefs: influences attitude towards behavior, and is referred to as: "Behavioral belief is the subjective probability that the behavior will produce a given outcome".

Normative beliefs: normative beliefs, and the person's motivation to comply with different referents, determine the prevailing subjective norm. Normative beliefs are referred to as: "The perceived behavioral expectations of important influential referent individual or group".

Control beliefs: the perceived presence of factors which facilitate or hinder performance of behavior, contributing to PBC, in proportion to the factors present in a given situation. In the context of IS research, these beliefs are defined as: "A perceptions of internal and external constraints on behavior" (Taylor & Todd 1995. p. 149). Furthermore, PBC refers to "the degree to which a person has the skills, resources, and other prerequisites to perform or defend a given behavior" (Ajzen, 1991, p. 188) as shown in Figure 1.

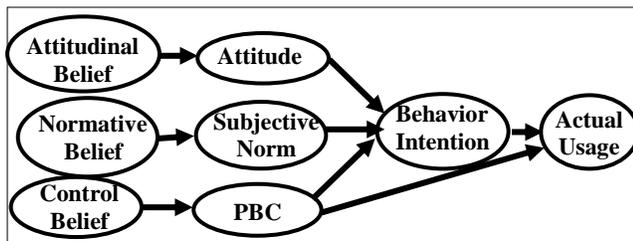


Figure 1: TPB (Ajzen, 1991)

TPB has been applied in various settings of technology acceptance. Furthermore it has been successfully applied in IBSA area in predicting the performance of IBSA. For e.g., in Korea, the study related to IBSA was conducted by Ok and Shon (2010), to find out the factors influencing IBSA. The TPB model has been extended by Shih & Fang (2004) to illustrate the factors affecting behavioral intention to adopt IBS. The finding revealed that although attitude is significantly toward intention, subjective norm and perceived behavior control are not. Beside that, Tan and Teo (2000) and Celik (2008) have used TPB in IBS area, Mathieson (1991) and Taylor & Todd (1995) have used TPB in information systems literature.

Ajzen and Fishbein (1980, p.82) defined Actual Behavior 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 (2000, 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".

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 (Mansumittrachai & 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 (Karjaluo, Mattila & Pento, 2002).

The aim of this study to examine many individual factors of technology (internet technology literacy, resistance to technology, risk technology, anxiety about technology, and information on technology) in IBSA setting generally those could influence on the behavior of customers toward IBSA. This study, therefore, is using these factors to investigate the adoption of Internet banking in Iraq.

Iraqi citizens are unaware of the benefits that technology can bring, and even if they do, they do not have the skills to use the Internet technology and computer effectively (Shendi, 2011). Besides, there is limited empirical study on TPB in Middle East (Al-Majaly, 2011, p. 39), specifically in Arab countries like Iraq.

III. RESEARCH MODEL

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 (Frankfort-Nachmias & Nachmias, 1996). The research framework proposed in this study is not exactly the same as the TPB model, the researcher have added direct relationships from attitude and subjective norms to IBSA, which is not in TPB original model.

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). According to Venkatesh et al. (2003), the individual characteristics of the users a strong predictor of actual usage.

The internet technology literacy is, 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. Karjaluo 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. According to the result of the study that identify the factors which affect the decision of social media to make purchasing in Thailand, 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 (Avirutha, 2012).

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. 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). According to the result of the study that identify the factors which affect the decision of social media to make purchasing in Thailand the user resistant to technology are significantly affected on the adoption of social media (Avirutha, 2012).

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 & Tseng, 2011). 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 a mobile payment service (Lu et al., 2011). 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 about technology. According to Compeau and Higgins (1995), anxiety refers to "person's 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). 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 outperformed the other factors in explaining the actual usage behavior of the e-filing system among Malaysian personal taxpayers. Abushanab et al. (2010) conducted a study to extend UTAUT by adding personality dimensions, toward behavioral intention to use IBS in Jordan. One of these factors was anxiety, and the finding of this study failed to explain a significant amount of variation of behavioral intention. This factor didn't use previously to measure customers' behavior toward IBS.

The last individual technology factor, is trust of technology. 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). 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).

Based on the above discussion, the following hypotheses related to individual factors on IBSA are presented:

H1: Technology and Internet literacy have a positive influence on customers' adoption of Internet banking.

H2: Resistance to technology has negative influence on customers' adoption of Internet banking.

H3: Risk of technology has negative influence on customers' adoption of Internet banking.

H4: Anxiety of technology has negative influence on customers' adoption of Internet banking.

H5: Trust of internet banking has a positive influence on customers' adoption of Internet banking.

Related to the linkage between an individual's attitude and IBSA, there is very few studies have investigated this linkage in internet banking setting (AL-Majali & Mat, 2010b). 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 TPB theory in the Iraqi context. Given that, the researcher hypothesizes that:

H6: Attitude significantly and positively influences IBSA.

Despite the original TRA, TPB and DTPB models that discussed the relationship between subjective norm and behavioural intention, there are very few empirical studies which examined the relationship between subjective norm and IBSA (Shi et al., 2008; Dauda et al., 2007; Hernandez & Mazoon, 2007). Moreover, It has found mixed results, e.g. AL-Majali and Nik Mat (2010b) found this linkage is significant in Jordan, while Dauda et al. (2007) found that the relationship between subjective norm and IBSA is insignificantly among users in Malaysia. However, there is no study conducted in Iraq related to IBSA settings to examine this linkage. Based Given that, the researcher hypothesizes that:

H7: Subjective norm, significantly and positively influences on IBSA.

According to TPB model, PBC may directly influence the actual usage by intensifying the efforts to help with the achievement of goals (Taylor & Todd, 1995). Actually, 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). Beside, there are very few past studies that were done to examine the relationship between PBC and actual IBSA settings. Furthermore, there is inconsistency in the results revealed in previous studies about PBC and the 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 this discussion, this study aims to test this linkage in IBSA. The following hypothesis is proposed:

H8: Perceived behavior controlling significantly and positively influences IBSA.

IV. METHODOLOGY

This study follows quantitative approach whereby the data is collected through self-administered questionnaire from respondents. Specifically, the population of this study is comprised of staff of public universities in Iraq; since they have bank accounts and are using the IBS (Al-majali & Mat, 2010b; Akinci et al., 2004). The researcher collected the data from the Middle, North, and South of Iraq (Moheer, 2012). The researcher got back all of the questionnaires except a total of two hundred (200) questionnaires. Thus only six hundred (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 disregarded. Therefore, only five hundred and thirty five (535) questionnaires were useful for further steps of analysis that mean the response rate was 66% .

The survey measures 9 constructs, which are: Internet technology literacy, resistance to technology, risk of technology, anxiety about technology, trust of technology, attitude, subjective norm, PBC, and IBSA. All these variables are adopted or adapted from previous studies. The following is a summary of the instrument that will be used to measure all variables and its source with the coefficient 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. Internet technology literacy - by five items from Nasri (2011). The coefficient alpha from his previous study for this measure is 0.868.
 6. Resistance to technology - by four items from Al-somail et al. (2009) and the coefficient alpha is 0.766.
 7. Perceived risk of technology - by four items from Grabner-Krauter & Faullant (2008) and Abushanab & Pearson (2010); four items were developed in an IBS area. The coefficient alphas produced by past studies (Grabner-Krauter & Faullant, 2008; Abushanab & Pearson, 2010) are 0.92 and 0.732, respectively.
 8. Anxiety about technology - by four items from past studies by Abushanab and Pearson (2010). The coefficient alpha from their previous study for this measure is 0.886.
 9. Trust - by six items adopted from Suh & Han (2002), which has a coefficient alpha of 0.93.
- Moreover, a seven-point Likert scale ranging from (1) 'strongly disagree to (7) strongly agree were used to assess responses.

V. ANALYSIS OF RESULTS

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 a structural model, i.e., the strength and direction of the relationships among the model variables (Lohmoller, 1989; Fronell, 1982, 1987). PLS is applicable to small samples in estimation as well as testing and appears to converge quickly even for large models with many variables and constructs (Lohmoller, 1989).

The demographic profile indicated that most of the respondents those 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%. 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%. 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

The data analysis employed a two-phase approach suggested by Anderson and Gerbing (1988) in order to assess the reliability and validity of the measures before using them in the research model. The first phase includes the analysis of the measurement model, while the second phase tests the structural relationships among latent constructs. The test of the measurement model involves the estimation of internal consistency reliability as well as the convergent and discriminant validity of the research instruments, which indicates the strength measures used to test the proposed model (Fronell, 1982, 1987). As shown in Table 1, all reliability measures were well above the recommended level of 0.70 as an indicator for adequate internal consistency (Hair et al., 1995; Nunnally, 1994).

Table 1
Convergent Validity Analysis

Constructs	Items	Loading	Cronbachs Alpha	Composite Reliability	AVE
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			
IBSA	IBSA1	0.880	0.748	0.841	0.582
	IBSA2	0.865			

	IBSA3	0.501			
	IBSA4	0.763			
AOT	AOT1	0.789	0.797	0.812	0.528
	AOT2	0.517			
	AOT3	0.648			
	AOT4	0.897			
RTT	RTT1	0.611	0.753	0.761	0.625
	RTT3	0.936			
RT	PRT1	0.792	0.850	0.892	0.674
	PRT2	0.821			
	PRT3	0.876			
	PRT4	0.792			
	RTT4	0.936			
TIL	TIL1	0.716	0.755	0.833	0.556
	TIL2	0.677			
	TIL4	0.823			
	TIL5	0.759			
Attitude	ATT2	0.625	0.727	0.832	0.556
	ATT3	0.726			
	ATT4	0.867			
	ATT5	0.745			
PBC	PBC1	0.758	0.891	0.926	0.757
	PBC2	0.896			
	PBC3	0.915			
	PBC4	0.902			
S N	SN1	0.792	0.859	0.899	0.641
	SN2	0.891			
	SN3	0.842			
	SN4	0.753			
	SN5	0.712			

The results of this analysis is used to accept or reject the hypotheses based on the significance of the standardised 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). 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.

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 ($\beta = 0.345$, $t = 6.133$, $p < 0.01$) (H6). Related to individual factors technology, there are 5 variables all of them supported with researcher expectation. The

result showed that technology and Internet literacy have a positive influence on customers' adoption of Internet banking at the 0.01 level of significance ($\beta = 466$, $t = 5.672$, $p < 0.01$) (H1). Resistance to change has negative influence and significant impact on customers' adoption of Internet banking at the 0.01 level of significance ($\beta = -0.118$, $t = 2.262$, $p < 0.01$) (H2), Risk of technology has negative influence on customers' adoption of Internet banking at the 0.01 level of significance ($\beta = -0.125$, $t = 3.818$, $p < 0.01$) (H3), Anxiety of technology has negative influence on customers' adoption of Internet banking at 0.01 level of significance ($\beta = -0.172$, $t = 4.821$, $p < 0.01$) (H4). Finally, trust of technology positive and statistically significant effect on IBSA at 0.01 level of significance ($\beta = 0.221$, $t = 6.087$, $p < 0.01$) which mean that the H5 is supported.

In this study, there was only one hypotheses unsupported, H7 is explained the relationship between subjective norms and IBSA, this relation appeared significantly and negatively influences depend on ($\beta = -0.151$, t value = 3.736, and $p < 0.01$). All result of hypotheses shown in table 2.

Table 2
Assessment of the structural mode

H	β	(STERR)	T	P value	Decision
H1: TIL-> IBSA	0.466	0.082	5.672	0.000 ***	SUP
H2: RTT-> IBSA	-0.118	0.052	2.262	0.024 **	SUP
H3: PRT-> IBSA	-0.125	0.033	3.818	0.000 ***	SUP
H4: AOT -> IBSA	-0.172	0.036	4.821	0.000 ***	SUP
H5: TRU-> IBSA	0.221	0.036	6.087	0.000 ***	SUP
H6: ATT-> IBSA	0.617	0.047	12.93	0.000 ***	SUP
H7: SN -> IBSA	-0.151	0.040	3.736	0.000 ***	UNSUP
H8: PBC- > IBSA	0.099	0.034	2.911	0.002 ***	SUP

VI. DISCUSSION AND CONCLUSION

This study based on TPB model to provide a comprehensive model to understand the potential factors of Internet Banking Adoption in Iraq. This study applied partial least squares structural equation modeling (PLS-SEM) as the major analysis technique as well as SPSS, since PLS SEM is a relatively new analytical technique in construction. As shown in table 2, the

hypotheses (H1, H2,H3,H4,H5,H6,H8) were statistically supported by the findings of the study, while hypotheses of, H7 was not supported. This could be because IBS in Iraq is still in initial stages of implementation. Therefore, referent groups are unable to provide the needed information and recommendations. The aim of this research is to investigate the factors that influence adopters to continue adopt Internet banking in Iraq. 535 questionnaires were used for data analysis.

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. It also can be a major reason why some bank customers are not willing to adopt Internet banking. Without a clear understanding of internet banking usage, banks need to put more efforts to improve their Internet banking services. It will also help bank executives to formulate new 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.

This study has some limitations which would indeed open opportunities for future research. For example this study focuses on the investigations of the antecedents of IBSA in Iraq; it neglects other aspects, such as the effect of the banks that provide IBS. Finally, this study discusses some antecedents of IBSA but neglects others, such as the cost, motivation, service quality, website features, etc.

REFERENCES

- [1] AbuShanab, E., Pearson, J., & Setterstrom, A. (2010). Internet banking and customers' acceptance in Jordan: The unified model's perspective. *Communications of the Association for Information Systems*, 26 (23), 493-524.
- [2] Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- [3] Ajzen, I., Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*: Prentice-Hall Englewood Cliffs, NJ.
- [4] Akinci, S., Aksoy, S. and Atilgan, E. (2004). Adoption of internet banking among sophisticated consumer segments in an advanced developing country, *International Journal of Bank Marketing*, 22(3), 212-32.
- [5] Alagheband, P. (2006). Adoption of electronic banking services by Iranian customers. Master's thesis, Luella University of Technology, Sweden
- [6] Al-majali, M. M., & Mat, N. K. N. (2010b). Applications of planned behavior theory on internet banking services adoption in Jordan: Structural equation modeling approach. *China-USA Business Review*, 9(12), 1-12.
- [7] Al-majali, M., & Mat, N. K. N. (2011). Modeling the antecedents of internet banking service adoption (IBSA) in Jordan: A structural equation modelling (SEM) approach. *Journal of Internet Banking and Commerce*, 16(1), 1-15.
- [8] Al-majali, M. (2011). The Use of Theory Reasoned of Action to Study Information Technology in Jordan. *Journal of Internet Banking and Commerce*, 16(2), 1-11.
- [9] Alnsour, M., & Al-Hyari, K. (2011). Internet Banking and Jordanian Corporate Customers: Issues of Security and Trust. *Journal of Internet Banking and Commerce*, 16(1), 1-14.
- [10] Alsajjan, B., & Dennis, C. (2010). Internet banking acceptance model: cross-market examination. *Journal of Business Research*, 63(9/10), 957-963
- [11] Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, 29(2), 130-141.
- [12] Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, 103(3), 411.
- [13] Avirutha, A. (2012). The Adoption of Social Media to Enhance Performance of Small and medium Businesses in Thailand. *Business and Information, Sapporo*, 3(5)164-182.
- [14] Awamleh, R., & Fernandes, C. (2006). Diffusion of Internet banking amongst educated consumers in high income non-OECD country. *Journal of International Banking and Commerce*, 11(3).
- [15] Bradley, L., & Stewart, K. (2003). The diffusion of online banking. *Journal of Marketing Management*, 19(9-10), 1087-1109.
- [16] Celik, H. (2008). What determines Turkish customers' acceptance of internet banking? *International Journal of Bank Marketing*, 26(5), 353-370.
- [17] Chang, E. C., & Tseng, Y. F. (2011). Research note: E-store image, perceived value and perceived risk. *Journal of Business Research*, 10(6), 1-7.
- [18] Chan, S. C., & Lu, M. T. (2004). Understanding internet banking adoption and use behavior: a Hong Kong perspective. *Journal of Global Information Management (JGIM)*, 12(3), 21-43.
- [19] Cheah, C. M., Teo, A. C., Sim, J. J., Oon, K. H., & Tan, B. I. (2011). Factors affecting Malaysian mobile banking adoption: An empirical analysis. *International Journal of Network and Mobile Technologies*, 2(3), 149-160.
- [20] Chwelos, P., Benbasat, I., & Dexter, A. S. (2001). Research report: empirical test of an EDI adoption model. *Information systems research*, 12(3), 304-321.
- [21] Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS quarterly*, 19(2), 189-211.
- [22] Dauda, Y., Santhapparaj, A., Asirvatham, D., & Raman, M. (2007). The Impact of E commerce Security, and National Environment on Consumer adoption of Internet Banking in Malaysia and Singapore. *Journal of Internet Banking and Commerce*, 12(2), 1-20.
- [23] Dewan, N. A., Lorenzi, N. M., & Zheng, S. (2004). Overcoming Resistance to New Technology. *Behavioral Health Management*, 21(1), 28-33.
- [24] Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: a perceived risk facets perspective. *International Journal of Human-Computer Studies*, 59(4), 451-474.
- [25] Foon, S. Y., & Fah, Y. C. (2011). Internet banking adoption in Kuala Lumpur: an application of UTAUT model. *International Journal of Business and Management*, 6(4), 161-167.
- [26] Fornell, C. (1982). *A Second Generation of Multivariate Analysis: Measurement and Evaluation (Vol. 2)*: Praeger Publishers.
- [27] Fornell, C., & Wernerfelt, B. (1987). Defensive marketing strategy by customer complaint management: a theoretical analysis. *Journal of Marketing research*, 337-346.
- [28] Frankfort-Nachmias, C. & Nachmias, D. (1996). *Research Methods in the Social Sciences*, 5th ed. St. Martin's Press: London.
- [29] Fusilier, M., & Durlabhji, S. (2005). An exploration of student internet use in India: the technology acceptance model and the theory of planned behaviour. *Campus-Wide Information Systems*, 22(4), 233-246.
- [30] George, J. F. (2004). The theory of planned behavior and Internet purchasing. *Internet research*, 14(3), 198-212.
- [31] Gerrard, P., & Cunningham, B. J. (2003). The diffusion of Internet banking among Singapore consumers. *International Journal of Bank Marketing*, 21(1), 16-28. <http://dx.doi.org/10.1108/02652320310457776>
- [32] Gerrard, P., Cunningham, J., & Devlin, J. (2006). Why consumers are not using internet banking: a qualitative study. *Journal of Services Marketing*, 20(3), 160-168.
- [33] Gopi, M., & Ramayah, T. (2007). Applicability of theory of planned behavior in predicting intention to trade online: some evidence from a developing country. *International Journal of Emerging Markets*, 2(4), 348-360.
- [34] Hair, J. F., Jr., Anderson, R. E., Tatham, R. L. and Black, W. C. (1995) *Multivariate Data Analysis*, 3rd ed, Macmillan Publishing Company, New York.

- [35] Hernandez, J. M. C., & Mazzon, J. A. (2007). Adoption of internet banking: proposition and implementation of an integrated methodology approach. *International Journal of Bank Marketing*, 25(2), 72-88.
- [36] Hoehle, H., Scornavacca, E., & Huff, S. (2012). Three decades of research on consumer adoption and utilization of electronic banking channels: A literature analysis. *Decision Support Systems*, 1-11.
- [37] Hong, Y., Teh, B., Vinayan, G., Soh, C., Khan, N., & Ong, T. (2013). Investigating the Factors Influence Adoption of Internet Banking in Malaysia: Adopters Perspective. *International Journal of Business and Management*; 19(8), 24-31.
- [38] Ibrahim, I. (2012). Factors Underpinning Usage Behavior of an Electronic Filing System: The Case of Malaysian Personal Taxpayers. Australian Tax Teachers Association (ATTA) Conference. Retrieved on sept.2012 from: http://sydney.edu.au/law/parsons/ATTA/docs_pdfs/conference_papers/Ibrahim.pdf
- [39] International Research and Exchanges Board. (2011). Bringing banks to the masses by phone. Retrieved on 20/12/2012 from <http://www.marketresearchworld.net/content/view/4432/77/>
- [40] Ipbl.(2012).Iraqi Private Bank league. Electronic banking need to make laws. Retrieved on 1/10/2012 from: <http://ipbl-iraq.org/ArticleShow.aspx?ID=111>
- [41] ITU (2010). Percentage of Individuals [user in Iraq]. Retrieved on 1/2/2012 from: <http://www.itu.int/ITU-D/ict/statistics/>
- [42] Jalal, A., Marzooq, J., & Nabi, H. A. (2011). Evaluating the Impacts of Online Banking Factors on Motivating the Process of E-banking. *Journal of Management and Sustainability*, 1(1), 1-32.
- [43] Karjaluoto, H., Mattila, M., & Pentto, T. (2002). Electronic banking in Finland: consumer beliefs and reactions to a new delivery channel. *Journal of Financial Services Marketing*, 6(4), 346-361.
- [44] KIB (2012). Retrieved on 12/4/2012 from: <http://www.kiitsc.com/ar/index.php>.
- [45] Kim, K., & Prabhakar, B. (2000). Initial trust, perceived risk, and the adoption of internet banking. In Proceedings of the twenty first international conference on Information systems. Association for Information Systems, 537-543.
- [46] Laforet, S., & Li, X. (2005). Consumers' attitudes towards online and mobile banking in China. *International Journal of Bank Marketing*, 23(5), 362-380.
- [47] Lee, J. L., Lee, K. T., & Eastwood, D. (2003). A two-step estimation consumer adoption or technology-based service. *Journal of Consumer Affairs*, 29(2), 256-27. <http://dx.doi.org/10.1111/j.1745-6606.2003.tb00453.x>
- [48] Lohmöller, J.B. (1987). LVPLS program manual, version 1.8, Technical report: Zentral archive für empirische Sozialforschung.
- [49] Lu, Y., Yang, S., Chau, P. Y., & Cao, Y. (2011). Dynamics between the trust transfer process and intention to use mobile payment services: A cross-environment perspective. *Information & Management*, 48(8), 393-403.
- [50] Luo, X., Li, H., Zhang, J., & Shim, J. P. (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. *Decision Support Systems*, 49(2), 222-234.
- [51] Mahdi, M. O. S. (2011). Trust and security of electronic banking services in Saudi commercial banks: Saudis versus Non Saudis opinions. *African Journal of Business Management*, 5(14), 5524-5535.
- [52] Mansumittrchai, S & Chiu, C. (2012). Adoption of internet banking in UAE: Factors Underlying Adoption Characteristics. *International Journal of management and marketing Research*, 5(1), 103-115.
- [53] Mattsson, J., & Helmersson, H. (2005). Internet banking: modelling the e-competence of customers with a text-analytic CIT approach. *International Journal of Bank Marketing*, 23(6), 470-483.
- [54] Mayer, R.C; Davis, J.H.; & Schoorman, F.D.(1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3), 709-734.
- [55] Moheer (2012). Minister of higher Education Science and Research. Public Universities. Retrieved on 10/10/2012 from: <http://www.moheer.gov.iq/PageViewer.aspx?id=16>
- [56] Mohsen, A. (2010). Factors influencing the customer's choice of electronic banking, a study in a sample of customers Iraqi banks. Mustansiriyah University, pp.1-16, Available at: <http://www.shatharat.net/vb/showthread.php?t=11857> [accessed 3 July 2011]
- [57] Mukherjee, A., Nath, P., & Pal, M. (2003). Resource, service quality and performance triad: a framework for measuring efficiency of banking services. *Journal of the Operational Research Society*, 54(1), 723-735.
- [58] Nasri, W. (2011). Factors Influencing the Adoption of Internet Banking in Tunisia. *International Journal of Business and Management* 6(8), 143-160.
- [59] Ndubisi, N. O., & Sinti, Q. (2006). Consumer attitudes, system's characteristics and internet banking adoption in Malaysia. *Management Research News*, 29(1/2), 16-27.
- [60] Niqash. (2012). Cash only: why the messy banking sector endangers Iraqi Development. Retrieved on September 8, 2012 from: <http://www.niqash.org/articles/?id=3002&lang=en>
- [61] Nor, K. M., & Pearson, J. M. (2008). An exploratory study into the adoption of internet banking in a developing country: Malaysia. *Journal of Internet Commerce*, 7(1), 29-73.
- [62] Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric theory*. McGraw, New York.
- [63] Ok, S. J., & Shon, J. H. (2006). The determinant of internet banking usage behavior in Korea: a comparison of two theoretical models. 1-15. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.97.3786&rep=rep1&type=pdf>
- [64] Pedersen, P., & Nysveen, H., (2004). Using the theory of planned behaviour to explain teenagers' adoption of text messaging services. Working Paper, Agder University College, July, 14, 2005, 1-36. Retrieved on 10, March, 2012 from: <http://mdfoo.s3.amazonaws.com/brij Singh/175547709709bb988bf8259830528e25/10.1.1.20.2242.pdf>
- [65] Pikkariainen, T., Pikkariainen, K., Karjaluoto, H., & Pahlila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet Research*, 14(3), 224-235.
- [66] Polasik, M., & Wisniewski, P. T. (2009). Empirical analysis of Internet banking in Poland. *International Journal of Bank Marketing*, 27(1), 32-52.
- [67] Raman, M., Stephenaus, R., Alam, N., & Kuppusamy, M. (2008). Information Technology in Malaysia: E-service quality and Uptake of Internet banking. *Journal of Internet Banking and Commerce*, 13(2), 1-18.
- [68] Raymond, L. (1985). Organisational characteristics and MIS success in the context of small business, *Management Information System Quarterly*, 9(1), 37-52.
- [69] Rotchanakitumnuai, S., & Speece, M. (2003). Barriers to internet banking adoption: a qualitative study among corporate customers in Thailand. *International Journal of Bank Marketing*, 21(6/7), 312-323.
- [70] Sathye, M. (1999). Adoption of internet banking by Australian consumers: an empirical investigation. *International Journal of Bank Marketing*, 17(7), 324-334.
- [71] Shendi, A. (2011). Patterns and electronic banking options Acceptance and rejection. College of Business and Economics - University of Wasit, Prof. Dr. Adib Qasim Shendi. Retrieved on 11 March 2012 from: www.iasj.net/iasj?func=fulltext&aid=53361.
- [72] Shi, W., Shambare, N., & Wang, J. (2008). The adoption of internet banking: An institutional theory perspective. *Journal of Financial Services Marketing*, 12(4), 272-286.
- [73] Shih, Y. Y., & Fang, K. (2004). The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet Research*, 14(3), 213-223.
- [74] Sonja, G. K., & Ewald A. K. (2003). Empirical Research in Online rust : A review And Critical Assessment. *International Journal of Human-Computer Studies*, 58(6), 783-812.
- [75] Sugathi, B., & Balachandran. (2001). Internet banking patronage: an empirical investigation of Malaysia. *Journal of Internet Banking and Commerce*, 6(1).
- [76] Suh, B., & Han, I. (2002). Effect of trust on customer acceptance of Internet banking. *Electronic Commerce Research and Applications*, 1(2002), 247-263.
- [77] Tan, M., & Teo, T. (2000). Factors influencing the adoption of Internet banking. *Journal of the Association for Information Sciences*, 1(5), 1-42.
- [78] Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information systems research*, 6(2), 144-176.

- [79] Thompson, Ronald L., Christopher A. Higgins, and Jane M. Howell. Personal computing: toward a conceptual model of utilization. *MIS quarterly* (1991): 125-143.
- [80] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly*, 27(3), 425-478.
- [81] Wallis, S. (1997). *Financial System Inquiry final report: overview*. Sydney, Australia: Australian Government Publishing Service.
- [82] Wang, T. L. (2011, June). An effect of trust and attitude in the initial adoption of online shopping: An empirical study. In *Information Society (i-Society)*, 2011 International Conference IEEE ,22-26.
- [83] Yang, S., Lu, Y., Gupta, S., Cao, Y., & Zhang, R. (2012). Mobile payment services adoption across time: An empirical study of the effects of behavioral beliefs, social influences, and personal traits. *Computers in Human Behavior*, 28(1), 129-142.
- [84] Zmud, R.W. (1979). Individual differences and MIS success: a review of the empirical literature. *Management Science*, 25(10), 966-979.

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Appendix: Measurement Scale of Constructs

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

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.

Subjective Norm (SN)

- 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.

Percived Behavior control (PBC)

- 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.

Internet Technology Literacy(ITL)

- 1-I feel comfortable when using computers in general.
- 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 internet banking services
- 5-I believe Internet literate keeps me using internet banking services

Resistant to Technology(RTT)

- 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

Risk of Technology (PRT)

- 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

Anxiety of Technology (AOT)

- 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.

Trust of Technology (TRU)

- 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.