Journal of Internet Banking and Commerce

THE USAGE OF INTERNET BANKING SERVICES AMONG JORDANIAN CONSUMERS

Ayed AL-Muala. Assistant Professor. Department of Marketing, Applied Science University
Postal Address: **Jordan, Amman, shfa bdran, Main Street**
Author's Personal/Organizational: **http://www.asu.edu.jo/index.aspx**
Email: **aied_muala@yahoo.com**
Dr. Ayed AL-Muala expertise is in several fields such as: Sales Management, Direct Marketing, E-Commerce, Direct Response Advertisement, internet banking, consumers behavior, Service Quality & Customer Satisfaction.

Malek AL-Majali, Assistant Professor. Department of Marketing, Mutah University
Postal Address: **Jordan, Karak, Mutah Street**
Author's Personal/Organizational: **http://www.mutah.edu.jo/**
Email: **drmalekalmajali@yahoo.com**
Dr. Malek AL-Majali areas of interests are E- marketing, internet banking, consumer behavior.

Mamdouh AL Ziadat, Associate Professor. Department of Marketing, Applied Science University
Postal Address: **Jordan, Amman, shfa bdran, Main Street**
Author's Personal/Organizational: **http://www.asu.edu.jo/index.aspx**
Email: **mamdouh_ziadat@yahoo.com**
Dr. Mamdouh AL Ziadat expertise is in several fields such as: Sales Management, Direct Marketing, E-Commerce, Direct, internet banking, consumer's behavior, Service Quality & Customer Satisfaction.

Abstract

The study aims to examine factors that influence an individual's intention to adopt internet banking service based on the Theory of Reasoned Action (TRA). This theory consists of four factors; two exogenous variables are attitude, subjective norm, and two endogenous variables are behavior intention and Internet Banking Service Adoption (IBSA) (actual behavior). This paper also aims to examine the validity of TRA model on IBSA setting in Jordan. This study uses a survey data of 700 Jordanian public university employees how used internet banking services. Confirmatory Factor Analysis (CFA) was performed to examine the reliability and validity of the measurement. The structural equation modeling techniques (Amos 6.0) were used to evaluate the casual model. Results of the study demonstrate the strong predictive power of the original TRA model to explain IBSA in Jordan. Finding this study indicates that the significant relationship between customers attitude, subjective norm and their intention to adopt IBS, moreover this study highlight that positive affecting of customers intention and IBSA.

INTRODUCTION

Internet Banking Service (IBS) adoption by the customers in Jordan is quite low [8]. The recent indicators shows that only two percent (2%) of the Jordan population used IBS in 2008[9], and a small increase of three and half percent (3.5%) in 2009 [8] to be IBS adopters in Jordan. This is a big difference compared to the adoption of internet banking service in the developed countries such as USA, whereby sixty seven percent (67%) has already adopted IBS [3]. Additionally, ninety five percent (95%) of Koreans use IBS [19].

This evidence seems to imply that the IBSA in Jordan is still in infancy stage and very minimal. This leads to the necessity to have more researches to determine the antecedents of IBSA in Jordan. Moreover, majority of the technology adoption theories have not been widely tested in developing countries such as Arab countries in general and Jordan in particular [6].

Thus, this study aims to fill this gap by examining the ability of TRA in a developing country especially in Jordan in IBSA setting. In addition, there are limited empirical studies related to IBSA in Jordan ([1], [12]). This gap makes it necessary to have more empirical studies on antecedent's IBSA.

LITERATURE REVIEW

The theory of reasoned action (TRA) [14], originally introduced in the field of Social Psychology, has been usually used to explain individuals' behavior. The TRA

hypothesizes that behavior is predicted by an individual's intention to engage in a given behavior. Intention, in turn, is predicted by two factors, the individual's attitude towards the outcome of the behavior and by the opinions of the person's social environment, which is called the subjective norm [14].

Attitude towards the behavior reflects an individual's evaluation or general feeling toward a target behavior. It indicates an individual's positive or negative evaluation about performing the behavior. The attitude toward behavior is a product of beliefs about the behavior and the individual's evaluation of the outcome resulting from that behavior.

The theory postulates that the intention to perform a behavior will be higher when the individual has positive evaluation of performing the behavior [9]. Subjective norm refers to an individual's perceived social pressure to perform or not to perform a target behavior. The subjective norm is a composite of normative beliefs about a certain behavior and the individual's motivation to comply with relevant others [14]. The theory suggests that people often act based on their perception of what others think they should do, and their intention to adopt a behavior is potentially influenced by people close to them. Figure 1 diagrams the relationships.
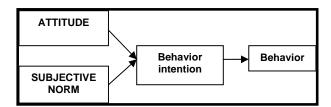

Figure 1. Theory of Reasoned Action

The TRA has been successfully applied in internet banking services setting to predict the performance of behavior and intention. For example, Shih and Fang [24] have used the TRA in Taiwan to examine effect of customer's attitude and subjective norms on internet banking adoption. This study found that attitude has a significant effect on adoption intention, while subjective norm has not. The statistics from the finding of this study indicates that the TRA model provides a good fit to the data.

Wan, Luk and Chow [25] used TRA to investigate the factors that influence Hong Kong bank customers' to adopt four major banking channels services. This study shows that TRA was less applicable when a behavior is habitual, such as the adoptions of IBS or other channel branch banking and telephone banking.

Ok and Shon [21] have applied TRA to understand the factors that could impact the actual use of IBS. The data for this study was collected from 300 personal banking customers who were internet banking users in Korea. The finding of this study showed that the TRA predicts behavioral intention to use the internet banking quite well. Moreover, another past related study has applied TRA in internet banking area by collecting the data from Business students and MBAs at four public universities in Malaysia [12]. This study found that the TRA is supported and it has the ability in predicting individual's behavioral intention toward IBSA. Also this study shows that

individuals' behavioral intention to adopt Internet banking is influenced by their attitude and subjective norm.

METHODOLOGY

To determine direct predictors of intention and IBSA in Jordan, three hypotheses were developed based on research model (Figure 2):
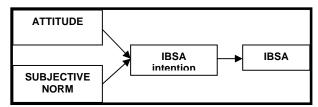

Figure 2. Proposed model

Hypothesis formulation were as follows:
H1. Behavior intention has significant and positive influence on IBSA.
H2. Attitude has significant and positive influence on intention.
H3. Subjective norm has significant and positive influence on intention

This is a field study consisting mainly quantitative approach to research. The unit of analysis is bank consumers sampled by university staff of four public universities in Jordan. The questionnaire contains the four latent constructs that are hypothesized to influence IBSA in Jordan totaling nineteen (19) items. These constructs were adopted from previous banking studies thus, exploratory factor analysis is omitted. The measures are (1) IBSA measured by four items [15]; (2) IBSA intention measured by five items adopted from [12]; (3) attitude measured by five items adopted from [12]; (4) subjective norm measured by five items adopted from [12]. Seven-point Likert scale with anchors from (1) strongly disagree to (7) strongly agree respectively, was used for all items.

To examine the factors that could influence IBSA intention of bank customers in Jordan, the sample (employees) was taken randomly from telephone directories of the four selected public universities in Jordan. They are selected because it is customary for employees of these universities to have bank accounts since their salaries are paid through the banks. Also, they have access to the internet and therefore may have used internet banking services before.

The universities selected are: (1) Jordanian University, (2) Jordanian-Germania University in the Middle of Jordan, (3) Yarmouk University in North of Jordan and (4) Mu'tah University in the South of Jordan. The survey was conducted from the 1st of September to the 1st of December 2009 (around twelve weeks). The researcher distributed seven hundred (700) questionnaires to the respondents who returned 565 of the questionnaires while one hundred thirty five (135) questionnaires were unreturned. Another 33 questionnaires were incomplete leaving five hundred thirty two (532) questionnaires for further analysis or 76% response rate.

DATA SCREENING AND ANALYSIS

The 532 dataset were coded and saved into SPSS version 15.0 and analyzed using AMOS version 6.0. The data were carefully examined for missing data. It was discovered that nineteen (19) questionnaires or 3.3 percent have missing responses. However, the missing cases were treated with replacement of mean so none was deleted. This method is considered to be viable by several scholars [10]. Next, inspection of Mahalanobis distance (D2) was conducted to identify outlier cases. Outlier result shows that 15 dataset were deleted due to D2 values greater than χ2 value. For univariate normality test, Z-skewness scores greater than +3 or -3 were absent. Thus, each item is considered to be normal data [22]. Thus, only five hundred seventeen 517 questionnaires remain for final analysis.

Subsequently, several statistical validity tests were then conducted such as reliability test, composite reliability tests, confirmatory factor analysis (CFA) for construct convergent validity, discriminate validity for multicollinearity treatment, descriptive analysis and correlation. Hereafter, Structural Equation Modeling (SEM) analysis using AMOS 6.0 was conducted. SEM is selected because SEM using confirmatory factor analysis could minimize measurement error through multiple indicators per –latent variable, ability to estimate both direct and indirect effects, and a testable model and ability to ensure consistency of model with data and to estimate effects among constructs. The SEM analysis produces three structural models namely hypothesized structural model, revised model and competing model.

FINDING

Most of the respondents were male (73.7%) compared to female (26.3%). This is expected in a male dominant country like Jordan. Their ages range from 31 to 40 years. About 80% of respondents were married, the majority (73.9%) lives in the Jordanian cities and about 40% have a Bachelor degree. About 55% work at managerial level in the university and more than half (57.4%) of respondents have salaries between 501-1000 JD.

On the usage of internet technology, 63% have used the internet technology for period of 6-10 years, while 44% of respondents have used IBS for period between 3-5 years. Most of the respondents indicate that they know about IBS in Jordan from mass media and access the IBS from their homes.

Finally the finding shows that the Jordanians use IBS mostly for balance enquiry, bill payment, money transfer, loan application, downloading information and investment activity services respectively. The escriptive statistics of variables indicates that the four constructs, two exogenous (attitude, subjective norm) and two endogenous (behavior intention and IBSA) have both Cronbach alpha and composite reliability of above 0.60.

This implies that the measurement scales for all variables are internally consistent and reliable [11]. Moreover, Confirmatory Factor Analysis (CFA) indicate that the factor loadings of all observed variables or items are adequate, ranging from 0.56 to 0.93. In this study, the "cut-off" point chosen for significant factor loading is 0.30, the minimum level required for a sample size of 350 and above as suggested by [10, p 128]. This

indicates that all the constructs conform to the convergent construct validity test. The remaining numbers of items for each construct are as follows: attitude (5 items), subjective norms (5 items), behavior intention (5 items), and IBSA (4 items), total item remaining is 19.

Discriminant validity refers to observed constructs should not be highly correlated to each other (multicollinearity). In other words, observed variables should be discriminating or distinct. To support discriminant validity, average variance extracted (AVE) should be more than the correlation square [5]. Table 1 shows the result of the calculated variance extracted (VE) to support discriminant validity of constructs. Average variance extracted (AVE) is the average VE values of two constructs (Table 1). The VE is derived from the calculation of variance extracted using the following equation:

$$\text{Variance Extracted} = \frac{\sum \left(s\tan dardized\ SMC^2 \right)}{\sum \left(s\tan dardized\ SMC^2 \right) + \varepsilon \sum j} \quad (1)$$

Consequently, each AVE value is found to be more than correlation square, thus discriminant validity is supported i.e. multicollinearity is absent.

Table 1: Variance extracted of variables

Observed Variables	Variance Extracted
IBSA	.552
BI	.937
ATT	.637
SN	.923

Confirmatory factor analysis was conducted on each individual construct and measurement models. All CFAs of constructs produced a relatively good fit as indicated by the goodness of fit indices such as CMIN/df ratio (<2); p-value (>0.05); Goodness of Fit Index (GFI) of >.95; and root mean square error of approximation (RMSEA) values of less than .08 (<.08) ([10], [20]). Table 2 and figure 3 shows that the goodness of fit of revised model is better compared to the hypothesized model.

Table 2: Revised model and hypothesized model results

Indicators	Revised model	Hypothesized model
CMIN	64.713	659.336
Df	50	148
CMIN/DF	1.294	4.455
p-value	.079	.000
GFI	0.979	0.877

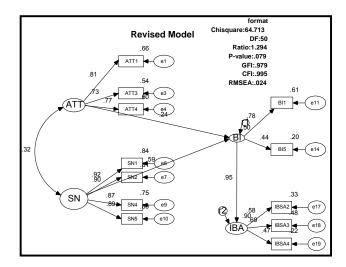| CFI	0.995	0.917
TLI	0.994	0.904
NFI	0.980	0.895
RMESA	.024	.082

Figure 3: goodness of fit of revised model

Hypotheses results

Since the hypothesized model did not achieve model fit (p<.000), therefore, the explanation of hypotheses result is based on Revised Model (RM) which achieved model fit of p-value=0.064 (> 0.05) (Figure 3). The revised model produces regression standardized estimates direct effects readings (Beta) as shown in Table 7. All hypotheses are supported when all direct paths are significant and positive (C.R. values > +/-1.96; p-value < 0.05).

Table 7: Direct impact Revised Model (RM): Standardized regression weights

Endo	Exog	S.E	C.R	P	Statue
BI	IBSA	.951	10.04	***	Sig
ATT	BI	.239	4.80	***	Sig
SN	BI	.593	11.1	***	Sig

Table 8 indicates that the two exogenous variables (attitude and subjective norms) jointly explained 49% variance in intention. Subsequently, intention explained 90% variance in IBSA.

Table 8: Squared multiple correlation results

Endogenous Variable	Squared multiple correlation (SMC) = R^2

IBSA	*90%*
Adoption Intention	*49%*

DISCUSSION AND CONCLUSION

In this study, we have attempted to empirically test a research model based on the theory of reasoned action using Internet banking as the target technology. As expected, the results have supported the theory's proposition that individuals' behavioral intention to use Internet banking service is influenced by their attitude and subjective norm.

The results indicate the applicability and ability of the theory of reasoned action to predict adoption intentions, in this study's case within different sampling frame (i.e., in Jordan) and target technologies (i.e., Internet banking service).

The results of this study have several practical implications. A significant positive relationship between attitude and behavioral intention suggests that positive attitude about Internet banking service could influence individuals to use Internet banking. Banks can create a positive attitude amongst its customer towards Internet banking by promoting its usefulness, ease of use, compatibility to their value, and image [16]. Consistent with findings in other empirical studies (e.g., [18, 3, 23, 17] the findings indicates the importance of social pressure in influencing ones' behavior towards intention to use Internet banking. Banks may want to explore promotional activities to promote the technology. AL-majali & Nik Mat [16] in their study on Internet banking acceptance in Jordan have found that family, and mass media have a positive influence on individuals to accept the technology. Thus, promotional activities such as advertisement and referral plan should target these groups.

As with any study, there are limitations to this research. First, one potential limitation of this study is the use of universities employees' subjects. Although universities employees are good surrogates for banking customers because they typically are current banking customers, questions remain concerning the generalizability of the results to a larger population. Second, our study was conducted in Jordan. The results may not be generalizable to customers in other countries and cultures. Customers in these countries might not share the same exposure, experience, level of information technology infrastructure, the comprehensiveness of legal framework and policies protecting customers and others.

In conclusion, this study has supported the generalizability of the theory of reasoned action in predicting individual's behavioral intention to use a technology. We have empirically test the research model based on this theory in Jordan as the sampling frame and Internet banking as the target technology. Both hypotheses as suggested by the theory in this study were well supported. Practical implications were discussed and the suggestions put forward could be used by banks to encourage banking customer to adopt Internet banking service.

REFERENCE

A. Al Sukkar & H, Hasan, 'Toward a model for the acceptance of internet banking in developing countries". Information Technology for Development, vol 4, pp 381-398, 2005.

A. Zhao, S. Hanmer-Lloyd, P. Ward & M. Goode, "Perceived risk and Chinese consumers' internet banking services adoption" Journal of Financial Services marketing, vol 26, pp 505-525, 2008.

B. Suh & I. Han, "Effect of trust on consumer acceptance of internet banking". Electronic Commerce Research and Applications, vol 3, pp 247-263, 2002.

B. Byrne, "Structural equation modeling with AMOS, EQS, and LISREL: Comparative approaches to testing for the factorial validity of a measuring instrument". International Journal of Testing, vol 1, pp55-86, 2001.

C. Fornell & D. Larcker, "Structural equation models with unobservable variables and measurement error: Algebra and statistics". Journal of Marketing Research, vol 18, pp382-388, 1981.

E. AbuShanab, J. Pearson & A. Setterstrom, "Internet Banking and Customers' Acceptance in Jordan: The Unified Model's Perspective". Communications of the Association for Information Systems, vol 26, pp 493-524, 2010.

I. Ajzen, "The theory of planned behavior. Organizational behavior and human decision processes" vol 2, pp 179-211, 1991.

(2009)International Telecommunication Union. Available: http://www.itu.int/ITU-D/ict/newslog/ >.

(2008) International Research & Exchanges Board. Available http://www.marketresearchworld.net/index.php?
Option=com_content&task=view&id= 2534&Itemid=77.

J. Hair, W, Black, B. Babin, R. Anderson & R. Tatham Multivariate Data Analysis. Auflage, Upper Saddle River. 2006.

J. Nunnally Introduction to psychological measurement: McGraw-Hill New York. 1970.

K. Al-Qeisi, "Analyzing the use of UTAUT model in explaining an online behaviour: Internet banking adoption". UK, Brunel University, 2009.

K, Nor & J. Pearson, "An exploratory study into the adoption of internet banking in a developing country: Malaysia". Journal of Internet Commerce, vol 7, pp 29-73, 2008.

M. Fishbein & I. Ajzen, Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research, MA, Addison-Wesly, 1975.

M. Raman, R. Stephenaus, N, Alam & M. Kuppusamy, "Information technology in Malaysia: E-service quality and update of Internet banking" . Journal of Internet Banking and Commerce, vol 13, pp 1-18, 2008.

M. AL-majali, & N.M, Nik Kmariah, "Applications of Planned Behavior Theory (TPB) on Internet Banking Services Adoption (IBSA) in Jordan: Structural Equation Modeling (SEM) Approach. The 2010 International Conference on Innovation and Management, Penan g, Malaysia, July 7- 10, 2010.

M, Lee, "Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit". Electronic Commerce Research and Applications,vol 8, pp 130-141, 2009.

M. Tan & T. S. H. Teo, "Factors influencing the adoption of Internet banking". Journal of the Association for Information Systems, vol 1 , pp 1-42, 2000.

(2009) Pewinternet . Available: www.pewinternet.org/Reports/2009/Generations-Online-in-2009/ aspx?r=1).

R. Bagozzi & Y. Yi, "The degree of intention formation as a moderator of the attitude-behavior relationship". Social Psychology Quarterly, vol 52, pp266-279, 1989.

S. Ok & J. Shon, "The determinant of Internet banking usage behavior in Korea: A comparison of two theoretical models" URL: www. collecter2006. unisa. edu. Au/Paper. (2010).

S, Coakes & L. Steed, SPSS: Analysis without anguish: Version 11.0 for Windows: John Wiley, 2003.

V. Lai & H. Li, "Technology acceptance model for internet banking: an invariance analysis". Information & management, vol 42, pp 373-386, 2005.

Y. Shih & K. Fang, "The use of a decomposed theory of planned behavior to study Internet banking in Taiwan". Internet Research, vol 14, pp 213-223. 2004.

W. Wan, C. Luk,., & C. Chow, "Customers' adoption of banking channels in Hong Kong". Journal of Financial Services Marketing, vol 23, pp 255-272, 2005.