Application of Decomposed Theory of Planned Behavior on Internet Banking Adoption in Jordan

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Abstract

This study investigates twelve factors that may influence internet banking adoption in Jordan. Using of DTPB (Decomposed Theory of Planned Behavior) model in this study provide a comprehensive model to understand the antecedents of Internet Banking Adoption in Jordan. The results show that all hypotheses were supported except for two hypotheses related to compatibility and technology support.

INTRODUCTION

Although internet banking services (IBS) has been widely used in many countries, its adoption level in Jordan was quite low (2%) (IREX, 2008). This could be due to the implementation of IBS in Jordanian banking sector is relatively quite new amongst customers. This vacuum has also triggers several researches to be conducted in Jordan. They had identified factors such as social norms and perceived behavior control (PBC) to be some of the possible causes for low level of acceptance and adoption (Abu-Shanab & Pearson, 2007; Al-Sukkar, 2005). Given the peculiar culture situation in Jordan, this study intends to investigate what other factors causes this low level of internet banking service (IBSA) in Jordan using the decomposed theory of planned behavior (DTPB).

LITERATURE REVIEW

DTPB (Taylor & Todd, 1995) consists of three main factors influencing behavior intention (BI) and actual behavior (adoption) which are attitude (ATT), subjective norms (SN) and perceived behavior control (PBC). Attitude describes an individual's positive or negative behavior towards innovation intention and adoption. It comprises of perceived ease of use (PEOU), perceived usefulness (PU) and compatibility. PEOU refers to the degree to which a person believes that using a particular system would be free of effort, while PU refers to the degree to which a person believes that using a particular technology will enhance his performance (Davis, 1989, p.320). Compatibility (Comp) refers to the degree to which an innovation is perceived as being consistent with existing values, past experiences, and needs of potential adopters (Moor & Benbasat, 1991, p.195). According to Ajzen and Fishbein (1980) SN describes the social pressure that may affect an individual's intention to perform. In this study it is composed of two normative beliefs: family influences (FM) and mass media influences (MM). FM is defined as a group consisting of parents and siblings; from parents a person acquires an orientation toward religion, politics and economics, and a sense of personal ambition, self worth, and love. FM emphasizes on relationship between the people under the family control with respect and modesty in Jordan, because this country follows the Arab cultures (Rouibah, 2008). Mass media influences (MM) is defined as non-personal communication channel consisting of print media (newspapers and magazines); broadcast media (radio and televisions); and network media (telephone, cable, satellite, wireless) (Kotler, 2006). PBC is considered as reflecting the perceptions of internal and external constraints on behavior (Taylor & Todd, 1995). It is composed of three control beliefs: self-efficacy (Self), government support (GS) and technology support (TS). SE refers to individual's self-confidence in his or her ability to perform a behavior (Compeau & Higgins, 1995). Government support (GS) can play an intervention and leadership role in the diffusion of innovation (Tan & Teo, 2000). Finally, technology support (TS) becomes easily and readily available as e-commerce applications such as internet banking services become more feasible (Shih & Fang, 2004).

According to DTPB, BI is determined by the user's intention to accept, use or adopt one

or more of the information technology such as Internet banking services (IBS). BI has a positive influence on IBS adoption in Singapore and Thailand respectively (Tan & Teo, 2000; Shih & Fang, 2004). Tan and Teo (2000) found that ATT is a significant predictor of BI towards IBS. In IBS setting, previous studies found significant and positive relationship between PEOU, PU, ATT and IBS adoption (IBSA) (Suh & Han, 2002; Celik, 2008; Nor & Pearson, 2008).

In addition, several past studies have suggested the link between compatibility and ATT (Nor & Pearson, 2008; Tan & Teo; 2000). Similarly, previous studies found that there is significant relationship between SN and BI (Tan & Teo, 2000; Nor & Pearson, 2008). FM was found to be a significant antecedent of SN towards IBSA in several past studies (Shih & Fang, 2004; Nor & Pearson, 2008). There were several past studies that discussed the relationship between MM influences and SN but in non-banking setting (Ng & Rahim, 2005; Fogelgren-Pedersen, Andersen & Jelbo, 2003; Woon & Kankanhalli, 2007). Tan and Teo (2000) and Shih & Fang (2004) found significant relationship between PBC and BI in banking setting. According to DTPB, self-efficacy predicts PBC when there is an intention of using a wide range of technologically advanced products (Tan & Teo, 2000). Nor and Pearson (2008) found that the relationship between self-efficacy and PBC is positive and significant. Tan and Teo (2000) show that the GS has a significant and positive influence on PBC in banking setting. The absence of the TS and its development is likely to impede the IBS (Jaruwachirathanakul & Fink, 2005).

Based on the discussions and the postulations above, the following thirteen hypotheses are proposed for this study:

> H1: BI has a significant and positive influence on IBSA.
> H2: ATT has a significant and positive impact on BI.
> H3: PU has a significant and positive influence on ATT.
> H4: PEOU has a significant and positive influence on ATT.
> H5: COMP has a significant and positive influence on ATT.
> H6: SN has a significant and positive influence on BI.
> H7: FM has a significant and positive impact on SN.
> H8: MM has a significant and positive influence on SN.
> H9: PBC has a significant and positive influence on BI.
> H10: PBC has a significant and positive influence on IBSA.
> H11: Self-efficacy has a positive influence on PBC.
> H12: GS has a significant and positive influence on PBC.
> H13: TS has a significant and positive influence on PBC.

METHODOLOGY

All constructs are measured as follows: IBSA (6-item) was adapted from Shih & Fang (2004) and Raman, Stephenaus, Alam & Kuppusamy, (2008); twenty four items for measuring each of BI, ATT, SN, PBC, BI (Taylor & Todd, 1995); twelve items measuring PU and PEOU (Davis, 1989); six items measuring compatibility (Moor & Benbasat, 1991); six items measuring FM (Taylor & Todd, 1995); six items measuring MM (Ng & Rahim, 2005; Pedersen, 2005); six items measuring self–efficacy (Compeau & Higgins, 1995); six items measuring TS (Tan and Teo, 2000; Pedersen, 2005); and finally five items measuring GS (Tan & Teo, 2000; Karahanna, 1999). All the items are measured

by using a seven-point Likert scale with anchors ranging from strongly disagree (1) to strongly agree (7). The English version of questionnaire was double-back-translated to Arabic language to ensure the accuracy of the two versions. Jordanian public universities employees were selected as the population of interest. The sample was from four public universities in Jordan because they were distributed evenly across Jordanian geographic regions. The questionnaires were distributed to 800 respondents and 517 usable data sets were entered into SPSS and analyzed using AMOS. The respondents consist of 26.3 percent females against 73.7 percent males. The majority of the sample aged between 31- 40 (44.4 %) and having education at bachelor's degree (38.3%).

FINDING

Validity test was conducted through reliability (Cronbach Alpha), composite reliability, confirmatory factor analysis (CFA) and average variance extracted (AVE). The reliability readings for all variables are well above 0.6 which indicate internal consistency for all measurement. The result of CFA shows that all factor loadings are above 0.5 for all items, thus indicating convergent validity for all latent variables. The result of AVE as compared to correlation square (R^2) are positive which shows that discriminant validity is supported for all constructs (Fornell & Larcker, 1982).

The results of Goodness of fit (GOF) of the revised structural model (Figure 1) shows that p-value is 0.062, Goodness of Fit Index (GFI) is 0.953, Adjusted Goodness of Fit Index (AGFI) is .939, CFI is .994, Root mean Square Error of Approximation (RMSEA) is .015, cmin/df ratio is 1.121.
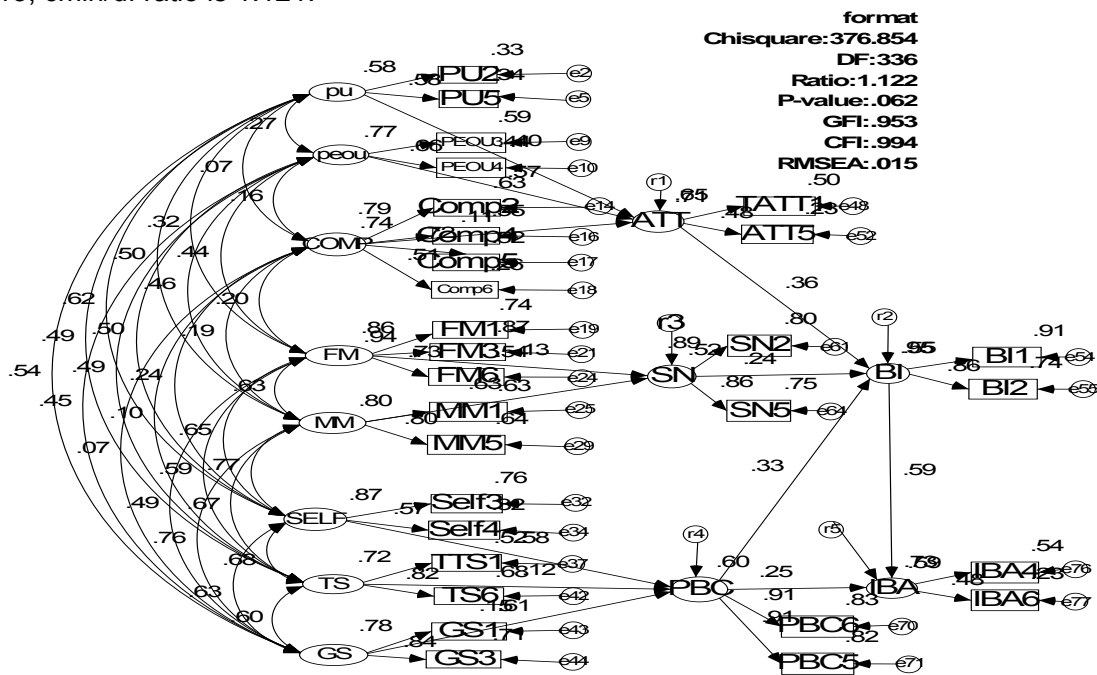
Figure 1: Revised Model

According to Hair et al., (2010), all GOF readings of confirmatory factor analysis (CFA) for measurement and structural models achieved the designated thresholds. Therefore,

all hypotheses are discussed based on the revised model. This means that the result could be generalized to the population. To test the hypotheses, the standardized estimates beta (β) and the critical ratio (CR) are shown in parentheses.

Thus, H1 is supported when intention is significantly and positively influencing adoption (β=.585***; C.R=6.788); attitude is significantly and positively influencing intention (β=.355***; CR=5.505), thus, H2 is supported; perceived usefulness is significantly and positively affecting attitude (β=.401***; CR=4.217) hence, supporting H3; perceived ease of use is significantly and positively related to attitude (β= .573***; CR=6.702) thus, H4 is supported; H5: compatibility is not significantly and positively related to attitude (β=.089 ; CR=1.504; p=.133), therefore H5 is not supported; H6 is supported i.e. subjective norms is significantly and positively influencing intention (β=.247 ***; CR= 5.004); H7 is supported when FM significantly and positively influencing SN (β=..132**C.R= 2.255; p-value=.024). H8 is supported when MM is significantly and positively influencing SN (β=.628 ***; C.R= 9.161). H9 is supported when PBC is significantly and positively influencing BI (β= .334***; C.R= 6.284). H10 is supported when PBC is significantly and positively influencing IBS (β=.252 *** C.R=3.414). H11 is supported when self- efficacy is significantly and positively influencing PBC (β=.585 ***; C.R=6.715). H12 is supported when GS is significantly and positively influencing PBC (β=.148 *; C.R=2.430; p-value= .015). H13 is not supported when TS is not significantly and positively influencing PBC (β=.118; C.R=1.640; p-value =.101).

CONCLUSION

This study uses DTPB model to provide a comprehensive model to understand the antecedents of Internet Banking Adoption in Jordan. The results suggest that the formation of positive attitude about IBS should take place before the technology can be adopted. The result emphasizes that banks need to make internet technology useful to customers. In addition, it implies that banks need to make this technology easy to use. Conversely, this study found that compatibility has no significant influence on attitude toward IBS. This finding also suggests that a positive attitude, support from subjective norms and perceived behavior control are important for positive behavior intention towards IBS. The result asserts that family influence emphasizes the relationship between the family members have a significant control over decisions to adopt internet because respect and modesty among Jordanian family members is important since this country follow the Arab cultures. The result also shows that mass media influences subjective norm probably because it plays an important role in influencing customers to adopt this technology. With regard to PBC, both self-efficacy and government support are found to be important while TS is not. One likely reason for the lack of support is that the necessary technology for providing IBS is already available in Jordan.

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