Acceptance of Internet Banking Systems among Young Managers

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Abstract. The aim of this paper is to determine acceptance of internet banking system among potential young users, specifically future young managers. The relationships and the effects of computer self-efficacy (CSE) and extended technology acceptance model (TAM) on the behavioural intention (BI) to use internet banking system were examined. Measurement of CSE, TAM and BI were adapted from previous studies. However construct for TAM has been extended by adding a new variable which is perceived credibility (PC). A survey through questionnaire was conducted to determine the acceptance level of CSE, TAM and BI. Data were obtained from 275 Technology Management students, who are pursuing their undergraduate studies in a Malaysia’s public university. The confirmatory factor analysis performed has identified four variables as determinant factors of internet banking acceptance. The first variable is computer self-efficacy (CSE), and another three variables from TAM constructs which are perceived usefulness (PU), perceived ease of use (PE) and perceived credibility (PC). The finding of this study indicated that CSE has a positive effect on PU and PE of the Internet banking systems. Respondents’ CSE was positively affecting their PC of the systems, indicating that the higher the ability of one in computer skills, the higher the security and privacy issues of PC will be concerned. The multiple regression analysis indicated that the future managers’ CSE indirectly affects their BI to use the internet banking systems through PU and PC of TAM. TAM was found to have direct effects on respondents’ BI to use the systems. Both CSE and the PU and PC of TAM were good predictors in understanding individual responses to information technology. The role of PE of the original TAM to predict the attitude of users towards the use of information technology systems was surprisingly insignificant.

Keywords: Computer Self-Efficacy (CSE), Behavioural Intention (BI), Technology Acceptance Model (TAM) and Internet Banking

1.0 Introduction

Researches on examining determinants of computer technology acceptance are becoming a central field of study in electronic mediated environment. In Malaysia, many researches have been conducted in internet banking services that addressed specific understanding on internet banking acceptance
among Malaysians, including intention of potential young users of undergraduate students to use the services [1]. It was reported that 89% of internet users in Malaysia are youths and young adults [2] and most of them are students of tertiary education who are regarded as future users of internet banking. In examining users’ acceptance of information systems, the technology acceptance model or TAM [3] appears to be the most widely accepted model among information systems researchers [4] because of its parsimony [5, 6] and it has better empirical support [4, 7]. In TAM, two determinants of perceived usefulness (PU) and perceived ease of use (PE) are widely used to determine acceptance of information systems and they are valid in predicting the individual’s acceptance of various corporate IT [8]. Review on the acceptance of internet banking systems researches involving TAM and BI suggested that users’ perceived credibility (PC) of the systems, should be considered to better predict BI of potential users to use the systems [1, 4 and 9]. Further, the external variables in TAM model, such as CSE, are proposed [10] and CSE has been extensively used by researchers to better explain how individual reacts to information systems [1, 4, 7, 11]. Therefore, this study develops a technology acceptance model for internet banking system based on the modified version of TAM to examine the effects of CSE and PU, PE and PC on the BI to adopt the systems. The model developed extends the understanding on how potential young users response to information technology systems from Malaysia’s undergraduate students perspective.

2.0 Literature Review

TAM was introduced by Davis [3], which stressed on adoption degree of a person in using a technology and aspects that affect his or her acceptance or intention to use the technology. TAM suggests that users’ adoption of information technology systems is determined by their intention to use the systems, which in turn is determined by their beliefs towards the systems. Users’ beliefs about information technology systems are influenced by their perceived usefulness (PU) and perceived ease of use (PE) of the systems. PU is the extent to which a person believes that using a particular system will enhance his or her job performance [3, 4] and it has been found to have positive effects on BI to use internet banking [4, 7]. PE indicates the degree to which a person believes that using a particular system would be free of effort [3, 4] and it has been found to have positive effects on BI [4, 5, 7]. Ajzen and Fishbein [12] suggested that a person’s adoption or actual behavioural could be determined by considering his or her prior intention along with his beliefs for a given behaviour. Thus, BI serves as an indicator of a person’s readiness to perform certain behaviour. It measures a person's relative strength of intention to perform behaviour [3], such as his intention to use information technology systems. Current researches involving TAM in examining acceptance of internet banking systems suggest that additional variables in TAM are required to derive a better understanding on determinant factors influencing the decision of bank users to use the systems. Thus, PC is added into the classical TAM [1, 4, and 9]. PC is more related to one’s judgment on the privacy and security issues of the internet banking systems. Security refers to the protection of information or systems from unsanctioned intrusions or outflows and privacy refers to the protection of various types of data that are collected during users’ interactions with the internet banking system. PC has been found to have a significant positive effect on behavioural intention [4].

One key benefit of employing TAM to understand system usage behavior is that it provides a framework to examine the effects of external variables, such as individual differences, on the system usage [4, 13]. Individual differences, such as CSE, is considered as one of the external variable in TAM model [1, 4, 10] and it plays a vital role in shaping an individual’s feeling and behaviour [11]. CSE is the judgment of one’s ability to use a computer [11] and this ability would lead to more favourable behavioural intention through its influence on PU and PE [1, 4, 10].

3.0 Validity and Reliability

A questionnaire of 29 items was developed based on previous researched to measure CSE, and PU, PE and PC of TAM and BI. In Section A of the questionnaire, seven items proposed by Compaue and Higgins [11] were adapted to measure CSE. These items are widely used and able to judge an individual ability to use a computer as well as the extent to which this ability influences his or her BI
to accept an information system [1, 4, 11]. Six items for each PU and PE of the original TAM were adapted from Davis [3] as they are able to determine individuals’ judgement on the extent to which use of an information system will enhance his or her job performance and free of effort [3]. PC was included in the TAM model with five items based on the work of Pikkarainen et al. [9], to examine judgement of an individual on issues of privacy and security in internet banking system [4, 9]. BI is included in the final model of TAM [10] and five questions (Section C) were proposed [3, 10] and adapted in this study. The five items are sufficient and possess high internal consistency to determine individuals’ BI [3, 10].

275 students (94.8% response rate as the pre-determined sample size was 290 for 5% margin error) who are pursuing their degree in Technology Management in a Malaysia’s public university participated in this research. The students were chosen using stratified random sampling procedure based on their programs and year of study. In this study, the KMO measure of sampling adequacy for CSE and TAM (PU, PE and PC) and BI were above 0.70, supported by Bartlett’s test of Sphericity of 0.00, allowing the research to proceed with factor analysis. Based on the Total Variance Explained of Confirmatory Factor Analysis (CFA), four dimensions with eigenvalues greater than 1.0 – CSE, and PU, PE and PC of TAM - have been extracted with the cumulative percentage of 72.699%. All the seven items of CSE, six items of PU and PE respectively and five items of PC were retained based on the results on component matrix with factor loading ≥ 0.5. For BI, only one dimension in the initial solution with eigenvalues greater than 1.0 has been extracted (cumulative percentage of 69.164%) and all the five items were accepted based on the result on component matrix with factor loading ≥ 0.5.

Reliability coefficient assessing the consistency of the entire scale, in which Cronbach’s Alpha is the most often used; and it is generally agreed that Cronbach’s Alpha should exceed 0.70 [14]. In this study, the alpha value for CSE was 0.910 and the values for PU, PE, PC and BI were 0.927, 0.929, 0.919 and 0.888 respectively. Thus, construct of CSE, TAM and BI used in this study was reliable and valid for further analysis.

4.0 Result and Analysis

The multiple regression analysis, as presented in Table 1, indicated that CSE had a positive effect on PU (Regression 1 - $\beta = 0.493$, $t = 9.357$, Sig. 0.000) and PE (Regression 2 - $\beta = 0.397$, $t = 7.144$, Sig. 0.000) and PC (Regression 3 - $\beta = 0.160$, $t = 2.685$, Sig. 0.008) of the Internet banking systems. Thus, H1a and H1b were supported. However, H1c was rejected.

The result of multiple regression analysis in Table 2 indicated that only two constructs of TAM – PU and PC – were significantly associated with BI (Regression 4). PU of $\beta = 0.272$, $t = 3.696$, Sig. 0.000 and PC of $\beta = 0.411$, $t = 7.150$, Sig. 0.000 denoting that users’ perceived usefulness and
perceived credibility of internet banking systems will positively influence their intention to use the systems. Thus, H2a and H2c were supported. H2b was rejected because PE was insignificant to BI.

Table 2: Results on the effect of PU, PE, and PC of TAM on Behavioural Intention

| Hypothesis | Regression 4 |
|------------|--------------|
| (Constant) | 1.285        |
| BI         |              |
| H2a: Perceived usefulness will positively affect the behavioural intention to use internet banking. | PU (β) | 0.272 |
|           | t-value | 3.696 |
|           | p-value | 0.000 ** |
|           | VIF | 2.090 |
| H2b: Perceived ease of use will positively affect the behavioural intention to use internet banking. | PE (β) | -0.037 |
|           | t-value | -0.486 |
|           | p-value | 0.628 |
|           | VIF | 2.281 |
| H2c: Perceived credibility will positively affect the behavioural intention to use internet banking. | PC (β) | 0.411 |
|           | t-value | 7.150 |
|           | p-value | 0.000 ** |
|           | VIF | 1.277 |

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

The total effects of CSE and TAM on BI was tabulated in Table 3. It was found that the respondents’ CSE indirectly affects their BI to use the internet banking systems through PU and PC of TAM. The total indirect effect is accounted 0.200. TAM was found to have direct effects on respondents’ BI to use the systems. The total direct effect is 0.683. Thus, it can be concluded that PU and PC of TAM were found to have direct influences on users’ BI to use the internet banking systems.

Table 3: Results of the total effects of Computer Self-Efficacy and TAM on Behavioural Intention

| The young managers of internet banking | Total effects of CSE on BI | Total effects of TAM on BI |
|---------------------------------------|---------------------------|---------------------------|
| Indirect effects                      |                           |                           |
| =0.493*0.272 + (0.160*0.411)         | =0.200                    | =0.272 + 0.411            |
|                                       |                           | =0.683                    |
| Direct effects                        |                           |                           |

5.0 Discussions

This study examined the formation of CSE, PU, PE and PC of TAM and BI to predict users’ acceptance of information technology systems, specifically internet banking system. The finding indicated that CSE and PU, PE and PC of TAM are determinants of users’ acceptance of internet banking systems, suggesting that the previous researches findings on this matter is well supported [1, 4]. The positive effects of external variable of CSE on PU and PE [1, 4, 7] of TAM are consistent with previous research findings. This indicated that users’ PU and PE of internet banking system will influence their acceptance of and intention to use the system. The positive impact of security and privacy of PC on users’ intention to use internet banking service suggest that young users are very concern on these issues when they are considering using the service. However, the positive effect of CSE on PC is inconsistent with the work of Wang, et.al. [4]. It was found that the potential young users’ CSE indirectly affects their BI to use the internet banking systems through PU and PC of TAM [4]. This suggests that users’ CSE, through PU and PC, is important external variable when predicting their intention to use internet banking system. The positive effects of PU of TAM on BI show consistency with past researches [4, 7]. The positive and stronger effect of PC than PU [4] highlights that issues of privacy and security of extended TAM are important construct of information systems acceptance. These issues are continuously and consistently concerned by users and they will strongly influence intention of users to use internet banking services. However, the role of PE is insignificant, which is very inconsistent with the previous research findings [1, 3, 4]. It is recommended that future researches should consider other variables of individual differences of external variables, which may contribute to the insignificant effect of users’ PE of information technology systems and their intention to adopt the systems.
6.0 Conclusions

The result of this research revealed that CSE, and PU, PE and PC of TAM are determinants of users’ BI to use internet banking systems. The inclusion of CSE and PC with PU and PE in the TAM model contributed to the better understanding on the intention of potential users to adopt internet banking systems. The indirect relationships between CSE and BI through PU and PC of TAM indicated that potential users’ CSE is important in influencing their intention to use the systems. The insignificant effect of PE on BI (PE: Sig. 0.628, p-value > 0.05) should be further validated as most researches revealed that users’ perceived ease of use of information systems did affect their BI to use the systems.

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