



FACTORS INFLUENCING BEHAVIOURAL INTENTION TOWARDS ADOPTION OF DIGITAL BANKING SERVICES IN MALAYSIA



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ABSTRACT

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Digital banking will be a disruptive digital transformation to Malaysians as the country is widely regarded as cash-based society. It is unknown on the factors that could influence behavioural intention towards adoption of digital banking services among Malaysian. This research aims to investigate the relationship of core constructs such as trialability, compatibility, observability, perceived usefulness, and perceived ease of use with consumer's intention to adopt digital banking services. This will be the first study in Malaysia to understand the public perception regarding digital banking service based on technology acceptance model (TAM) and innovation diffusion theory (IDT). The results obtained in this study demonstrated that perceived ease of use, compatibility and observability are important explanatory variables to influence the behavioural intention to adopt digital banking services. The study showed some practical implications that may be useful for policy makers, bankers and fintech players to design or participate in policy that can motivate adoption rate of digital banking services among Malaysian.

Contribution/ Originality: This study documents the supporting evidence of key factors influencing behavioural intention towards adoption of digital banking services in Malaysia based on theoretical framework of TAM and IDT models.

1. INTRODUCTION

In recent years, digital banking began to receive a lot of attention from policy makers, bankers, technology companies and consumers. Different to commonly implications of e-banking, digital banking is a modern banking business model that operates on the basis of digitizing all bank operations and activities while e-banking is only an additional service on the traditional banking platform to provide convenient bank transactions, bill payments or account management through internet, mobile or SMS activity (Nguyen & Dang, 2018). According to Central Bank of Malaysia, the transformation of country's financial system to adoption of digital banking infrastructure could drives nation to a high-income economy. The establishment of Malaysia first digital bank enables innovative application of banking technology to address market gaps in the underserved and unserved segment.

Digital banking allows the use of technology to conduct banking transactions in a smooth manner (Alkhowaiter, 2020) yet there remains some insufficient steps and demand-side factors prevents the uptake of cashless technology (Widjaja, 2016). Moreover, public perception of a completely new digital banking service among Malaysian is not explored in the past studies. The services offered by the financial institutions also continue

to challenge and cater to the attitudes of consumers who are accepting of new technology products to gain market opportunities (Chong et al., 2019). It will be more complex than before, with participation of new players from non-established financial institutions such as fintech. Overall awareness and acceptance of fintech products in the Malaysia consumers context are also essentially unknown and insufficient (Chua, Lim, & Khin, 2019).

According to Chang, Wong, Lee, and Jeong (2016) banks changed business processes in the context of fintech and competed with fintech companies. Banks could face challenges in digital banking transformation as they focus more on workflows and systems instead of customer experience (Indriasari, Gaol, & Matsuo, 2019). The link between new product performance and market orientation may be exposed to potential indirect effects of other factors (Tajudin & Musa, 2018).

A better understanding of the mechanisms behind effective open innovation process can churn positive prospects for digital banking services in Malaysia (Tajudin & Musa, 2018). Therefore, this research is needed to close the research gap and gather relevant data to help digital banking players in working towards the development of digital banking service that will satisfy and draw in more potential users by taking theoretical perspectives of innovation diffusion theory (IDT) and technology acceptance model (TAM).

The adoption process defined as the mental procedure through which an individual goes from first finding out about an innovation to a particular selection (Mannan & Haleem, 2017). In this study, adoption process of potential digital banking users are explained through perceived usefulness, perceived ease of use and social influence from the theoretical framework of TAM (Davis, 1989) and compatibility, trialability and observability from the IDT (Rogers, 2003). The integration of TAM and IDT models for analysing individual readiness in adoption of new technology have been tested for the usage of smart home (Hubert et al., 2018), Uber mobile application (Min, So, & Jeong, 2019) and green building technology (Wang, Zhang, Su, & Deng, 2019). This will be the first study to apply both theoretical models in determining factors influencing behavioural intentions towards adopting digital banking services based on Malaysian perspectives, as shown in Figure 1.

The objectives of study are:

- i. To examine the effect of perceived usefulness on behavioural intention to adopt digital banking services.
- ii. To examine the effect of perceived ease of use on behavioural intention to adopt digital banking services.
- iii. To examine the effect of social influence on behavioural intention to adopt digital banking services.
- iv. To examine the effect of trialability on behavioural intention to adopt digital banking services.
- v. To examine the effect of compatibility on behavioural intention to adopt digital banking services.
- vi. To examine the effect of observability on behavioural intention to adopt digital banking services.

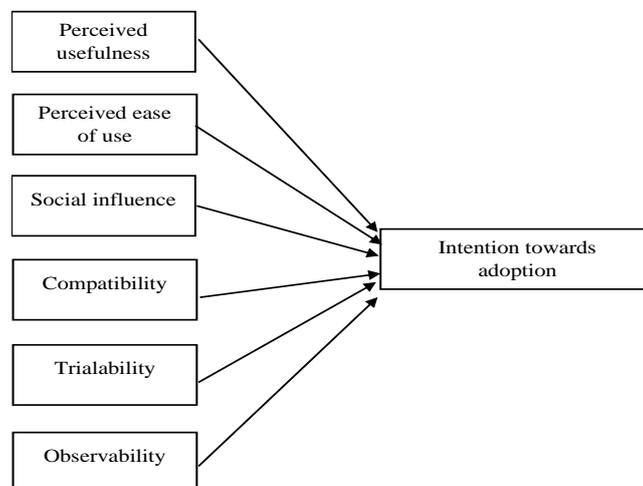


Figure-1. Conceptual framework of the study.

Source: Adapted from Davis (1989) and Rogers (2003).

2. MATERIALS AND METHODS

2.1. Sampling and Data Collection

Primary data for the study was collected through structured questionnaires administered to respondents. The questionnaires consisted of close-ended questions that were tested and translated into three languages (English, Chinese and Malay) to suit the multi-ethnic backgrounds of Malaysian respondents. The survey is divided into two sections, the first section assessed the demographic profile of respondents using a nominal or ordinal scale. Second section measuring core constructs using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

2.2. Data Collection and Analyses

For data collection, 150 valid usable responses were received and analysed. The data were analysed using the Statistical Package for the Social Sciences (SPSS) Version 26.0.

3. DATA ANALYSIS AND RESULTS

3.1. Respondents Demographics Profile

The respondent demographic profile in Table 1 show that 64.0% of respondents are female with 36.0% male. Most respondents are employed from private sector, with 49.3% out of 150 respondents. About 49.3% had education background of undergraduates, and 40.0% comprised of age groups made up from 25 to 44 years old. Majority (34.0%) had annual income up to RM24, 000.

Table-1. Respondents demographics profile.

Demographic item	Frequency	Percentage
Genders		
Female	96	64.0%
Male	54	36.0%
Profession		
Student	30	20.0%
Private sector employee	74	49.3%
Freelancers or part-timer	6	4.0%
Public sector employee	14	9.3%
Self-employed	23	15.3%
Currently looking for job or unemployed	3	2.0%
Education level		
High school	11	7.3%
Diploma	18	12.0%
Undergraduates	74	49.3%
Postgraduates	47	31.3%
Age (years)		
15 to 24	23	15.3%
25 to 34	60	40.0%
35 to 44	50	33.3%
Above 45	17	11.3%
Annual income		
RM 0 to RM 24,000	51	34.0%
RM 24,000 to RM 50,000	38	25.3%
RM 50,000 to RM 70,000	19	12.7%
RM 70,000 to RM 100,000	23	15.3%
Above RM 100,000	19	12.7%

3.2. Reliability Analysis

Cronbach's alpha coefficient was used to determine the inter-item consistency reliability of the scales. As shown in Table 2, each construct has a Cronbach's alpha greater than 0.7 indicates a high level of internal consistency for

the scale. This indicates a high overall degree of acceptable, consistent scoring for this research.

Table-2. Reliability analysis of inter-item consistency.

Variable	Cronbach's alpha if item deleted
PU	0.767
PEU	0.859
SI	0.831
COM	0.856
TRI	0.776
OBS	0.870
INT	0.896

3.3. Correlation Analysis

Correlation analysis was used to determine the relationship between independent variables – PU, PEU, SI, COM, TRI and OBS with dependent variable – intention to adopt digital banking services. One-sample Kolmogorov-Smirnov test was conducted to examine if tested variables are normally distributed in the entire dataset. All the test variable showed significance less than 0.001, indicated the data was non-normal distributed. Therefore, Spearman's rank correlation coefficient was used. Correlation analysis was also performed to gauge discriminant validity among the reported constructs.

Table-3. Spearman's rank correlation coefficient.

Variable	Spearman's rank	PU	PEU	SI	COM	TRI	OBS	INT
PU	Correlation Coefficient	1.000	0.654**	0.222**	0.459**	0.329**	0.302**	0.443**
	Sig. (2-tailed)		0.000	0.006	0.000	0.000	0.000	0.000
PEU	Correlation Coefficient	0.654**	1.000	0.193*	0.460**	0.364**	0.259**	0.566**
	Sig. (2-tailed)	0.000		0.018	0.000	0.000	0.001	0.000
SI	Correlation Coefficient	0.222**	0.193*	1.000	0.346**	0.392**	0.391**	0.279**
	Sig. (2-tailed)	0.006	0.018		0.000	0.000	0.000	0.001
COM	Correlation Coefficient	0.459**	0.460**	0.346**	1.000	0.427**	0.312**	0.447**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000	0.000
TRI	Correlation Coefficient	0.329**	0.364**	0.392**	0.427**	1.000	0.161*	0.404**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.050	0.000
OBS	Correlation Coefficient	0.302**	0.259**	0.391**	0.312**	0.161*	1.000	0.347**
	Sig. (2-tailed)	0.000	0.001	0.000	0.000	0.050		0.000
INT	Correlation Coefficient	0.443**	0.566**	0.279**	0.447**	0.404**	0.347**	1.000
	Sig. (2-tailed)	0.000	0.000	0.001	0.000	0.000	0.000	

Note: **. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

All independent variables shown positive association to intention to adopt digital banking services, with the values of coefficients range from 0.279 to 0.566. Therefore, Malaysian who perceive that digital banking is useful, easy to use, recommended by family and friends, compatible to work and lifestyle, offer demo before use and heard about digital banking services will adopt digital banking services in the future. In addition, positive association among independent variables also observed with the values of coefficients range from 0.161 to 0.654, at significance value of 0.01 level. Among them, perceived usefulness is highly positive associated with perceived ease of use (correlation coefficient: 0.654, p value: <0.01) and least association was observed between compatibility and trialability (correlation coefficient: 0.161, p value < 0.05). Based on Table 3, since the correlation coefficient was

significant and fell within the range of 0.1 to 0.85 (Hair, Black, Babin, & Anderson, 2010) discriminant validity was supported.

3.4 Multiple Linear Regression

Table 4 shows the model summary of the multiple linear regression analysis between 6 independent variables and dependent variable of intention to adopt digital banking services. These independent variables accounted for about 39.2 percent of the variation in this regression equation model.

The estimated values revealed that the independent variables, namely, perceived ease of use (PEU), compatibility (COM) and observability (OBS) are the important explanatory variables and statistically significant at 0.01 and 0.10 level. However, perceived usefulness (PU), social influence (SI) and trialability (TRI) are not significant in this regression model because their p-values are greater than at 0.05 level. Perceived ease of use is the most important predictor and independent variable followed by observability and compatibility in this regression equation model as shown in Table 5.

Table-4. Model Summary^b of multiple linear regression analysis of behavioural to adopt digital banking services.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.626 ^a	0.392	0.367	0.576

Note: a Predictors: (Constant), PU, PEU, SI, COM, TRI, OBS.

b Dependent variable: INT.

Table-5. Coefficient^a of multiple linear regression of behaviour to adopt digital banking services.

Model	Unstandardised coefficients		Standardised coefficients	t	Sig.
	B	Std. error	Beta		
Constant ^a	0.843	0.366		2.306	0.023
PU	-0.018	0.083	-0.019	-0.2184	0.828
PEU	0.427	0.097	0.388	4.399	0.000
SI	0.037	0.052	0.055	0.721	0.472
COM	0.114	0.064	0.146	1.788	0.076
TRI	0.104	0.072	0.114	1.451	0.149
OBS	0.148	0.057	0.191	2.625	0.010

Note: a Dependent variable: behavioural intention to adopt digital banking services.

PU (perceived usefulness), PEU (perceived ease of use), SI (social influence), COM (compatibility), TRI (trialability), OBS (observability).

4. CONCLUSION

TAM theories are commonly applied to study technology adoption through understanding the impact of perceived ease of use and perceived usefulness (Davis, 1989). For instance, the study on acceptance of online shopping (Gefen, Karahanna, & Straub, 2003; Tong, 2010) mobile instant messaging (Jiang & Deng, 2011) mobile payments (Dahlberg, Mallat, & Öörni, 2003) and adoption of mobile cloud service (Park & Kim, 2014). The findings of study revealed that is a positive relationship between perceived usefulness, perceived ease of use and social influence with intention of adopting digital banking services. This is consistent with the finding of a positive relationship between perceived usefulness and continuation intention towards mobile-based payments (Talwar, Dhir, Khalil, Mohan, & Islam, 2020). Suhaimi and Hassan (2018) also showed that perceived ease of use is among the two factors that can enhance the branchless digital banking acceptance among Generation Y in Malaysia. Social influences have significance relationship towards adoption of mobile wallet among Malaysian undergraduates' students (Chern, Kong, Lee, Lim, & Ong, 2018) and promote consumers' stickiness behaviours to WeChat wallet (Matemba, Li, & Maiseli, 2018).

Despite the abundance uses, TAM is not sufficient to explain voluntary user acceptance of new technology such as mobile banking (Xiong, 2013). Therefore, this study hopes to close the gap of limitation by exploring the factors influencing consumer's intention to adopt a new technology by combining with IDT theoretical perspectives. According Nor and Pearson (2008) IDT can be used as one of the earliest theories to explore factors that influence

an individual's ability to adopt a new technology or innovation as it explains the process by which users adapt technological advances (Rogers, 2003). The findings of this study have revealed that selected IDT constructs can be used to predict the intention of Malaysian to adopt digital banking in the future. This is in agreement with previous studies that IDT can be used to predict customers' usage intention toward mobile payment adoption in Taiwanese consumers (Yeh, 2020) mobile banking adoption among Indian (Dash, Bhusan, & Samal, 2014) and adoption of internet banking services in Greece (Giovannis, Binioris, & Polychronopoulos, 2012).

The findings of study also showed that perceived ease of use is the most important predictor of Malaysian's behavioural intention to adopt digital banking services, followed by constructs of observability and compatibility. This is consistent to Ramayah (2020) findings that consumer is likely to adopt the technology if they observe the use or success of technology taken by other people, therefore a higher desirability is likely to stimulate the adoption of the innovation. Mannan and Haleem (2017) also suggested that an innovation that is inconsistent with the specified conditions, guidelines or practices will not be adopted or received as fast as an innovation that is compatible. Therefore, this study proposed the importance of both compatibility and observability constructs to be considered by digital banking players as these factors that could influencing adoption of this new technology before they are available in the market.

The findings of this study can contribute to the existing literature of fintech product adoption and acceptance among the Malaysian consumer. Through combining of TAM and IDT theories, this study can contribute to understand the factors influencing Malaysian consumers' behavioural intention to adopt the digital banking service. Among the tested construct, the perceived ease of use, observability and compatibility have significantly and positively influenced the behavioural intention to adopt digital banking service in Malaysia.

This study did not include the moderating effects such as gender, age or education level thus there is a lack of a more concrete understanding on the potential interaction between different demographic groups. Moreover, there might be other factors such as perceived security, perceived privacy, monetary risk and perceived trusts which could play a crucial role in intention to use. Therefore, future study can consider studying these variables to draw a more conclusive investigation of the roles of moderating variables and other independent variables on the relationship of perceived ease of use, compatibility, observability and intention to adopt digital banking services.

In conclusion, this study showed some practical implications on the importance of TAM and IDT constructs as factors influencing Malaysian's intention to adopt digital banking services that may be useful for policy makers, bankers and fintech players to design or participate in policy that can motivate adoption rate of digital banking services among Malaysian.

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