



Theory of Planned Behaviour: Influence of the Constructs on Behavioural Intention in Digital Banking

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Abstract. The introduction of digital banking might have a negative or positive impact on the value of the financial system. It is a tremendous chance for the firms that are prepared for the huge transformation since customers have turned their preference towards cashless transaction due of the COVID-19 pandemic. Based on the notion that digital banks would soon enter the Malaysian banking market, this research seeks to analyse customer behaviour intention using the Theory of Planned Behaviour (TPB). A Theory of Planned Behaviour, Ajzen (1991) explains that a person behavioural action is based on an immediate antecedent, which is his or her behavioural intention. This conceptual paper proposes three construct which are attitude, social norm and perceived behaviour control that influence consumers' behaviour intention to use digital banking. Past studies have found mixed results from the three constructs to the behaviour intention. Besides that, age apparently has no significant moderating role in the intention of technology acceptance within the context of TPB. Therefore, this study aims to investigate three constructs moderated by age in influencing the behaviour intention. Quantitative questionnaire is used to measure responses of participants.

Keywords: Theory of Planned Behaviour · Behaviour intention · Digital banking

1 Introduction

Malaysian banking customers soon will have an option to consume the services offered by digital banks. Bank Negara Malaysia has issued five digital banking licenses (BNM, April 2022). The selected companies will undergo a thorough audit process which takes between 12 to 24 months before they can commence operation. In Southeast Asia, only Singapore and the Philippines have digital banks. While the digital banking has taken shape well before the COVID-19 pandemic, its trajectory may be motivated by the global health shock. On the supply side, McKinsey (2021) reported the digital banking success attributed to cost efficiency, service value differentiation, a quick scalability, and revenue-focus products. Bank Negara Malaysia has developed the regulatory framework which

will ease the digital banks when they come on stream (BNM, March 2020). The capital requirement is simplified at the bank's initial start-up in which the risk categories are made simpler to comply with the Basel II framework. The liquidity requirement is 25% of the banks' total liabilities composed of high-quality liquid assets. McKinsey (2015) reported a survey done on digital banking in ASEAN found that almost 50% of Malaysian respondents were willing to switch to digital banking. The affluent and the younger consumers were more readily to use the digital banking services. It was reported that digital channels are becoming significantly important for consumers' product awareness and evaluation. More than 50% of the respondents used the digital channels rather than the word of mouth. The consumers' interest in digital services goes on a trajectory due to the pandemic as indicated in the BNM statistics in which e-payment increased in 2020 by 13% from the year before. The Price Waterhouse Cooper (PWC) reported in 2019 that 74% of Malaysian consumers were ready to embrace virtual banking from the opening an account to the full fledge use of the services. On the demand side, the question is how the consumers perceived digital banking services and will they embrace it like the internet banking services offered by the traditional banks. Thus, the purpose of this is to investigate the consumers' behavioural intention towards the digital banking in Malaysia. Based on the Theory of Planned Behaviour (TPB), this study will examine the influence of three constructs, i.e., Perceived Behaviour Control, Attitude and Social Norm, on the consumers' intention to embrace the digital banking. Several studies have done on the adoption of mobile and internet banking based on mainstream psychology theories, particularly the Technology Acceptance Model (Shanmugam et al., 2014; Ahmed and Phin, 2016; Abdul Aziz and Mohd Dali, 2019; Peong et al. 2021; Tran, 2021). There is a very minimal study done on digital banks and apparently none so far employing TPB and instead these studies are based on the over-indulged TAM (Rehman and Shaik, 2020; Ni. T. W, 2020; Nik Azmi et al., 2021). This study compels to examine consumers' behaviour intention employing TPB based on the proposition that digital banks will be soon appear on the Malaysian banking landscape. The study will employ Ajzen (1991) conceptual model and also examine whether age and gender play any moderating role in the consumers' behavioural intention towards digital banking.

1.1 Conceptual Development and Hypotheses

The original theory was introduced by Ajzen (1985) in his article "From Intentions to Actions: A Theory of Planned Behaviour." Ajzen (1991) explains that a person behavioural action is based on an immediate antecedent, which is his/her behavioural intention. The intention to use a certain object depends on the person's beliefs about the probable consequences of his/her behaviour, i.e., behaviour beliefs, about other people's normative expectation pressuring him or her, i.e., normative beliefs, and about the presence of factors that restraints or eases his/her action, i.e., control beliefs. He further explains that the person's behaviour beliefs lead to his/her favourable or unfavourable attitude toward the behaviour. His/her normative beliefs lead to the perceived social pressure (subjective norm) and his/her control beliefs result to the perceived behaviour control (self-efficacy). He posits that the perceived behaviour control moderates the impact of attitude and subjective norm on the person's behaviour intention. The more favourable the

attitude and subjective norm are, the greater the perceived behaviour control and therefore, the stronger the person's intention to perform the particular behaviour. Hence, if the opportunity comes and given the ample actual control, he/she has over the behaviour, the person is likely to perform the intention. There are several studies employed TPB investigating the behaviour intention in varied situations related to certain objects, e.g., food consumption (Ajzen, 2015), channel switching in purchases (Madahi and Sukati, 2016), entrepreneurship (Palupi and Santoso, 2017), e-Commerce (Angraini et al. Angraini et al., 2019), household waste segregation and luxury purchases (Canguende-Valentim et al. Canguende-Valentim and Vale, 2021). Similarly, this study will employ the same theoretical concept and develop hypotheses to ascertain the influence of three constructs as discussed in TPB. Since digital bank is yet to make its presence in Malaysia, the consumers' intention to use its services will be the focal point.

The study proposes its research model in which the three constructs discussed above, i.e., attitude, social norm and perceived behaviour control, influence consumers' behaviour intention to use digital banking. Studies have found that the attitude, social norm and perceived behaviour control are significant and have positive influence toward behaviour intention (Ajzen, 2015; Madahi and Sukati, 2016; Wang et al., 2018, Angraini et al. 2019). Ajzen (2015) finds all the three constructs are positively affecting the behaviour intention to food and beverage consumption decisions. The study focuses on the college students in their decision to consume alcoholic or non-alcoholic drinks. The same constructs are also tested for the students' intention to consume junk foods or avoid junk foods. The study finds that the three construct significantly and positively influenced the students' intention to consume alcoholic drinks and junk foods or to avoid the alcoholic drinks and the junk foods. The other studies similarly find the same outcomes in their respective studies on intention toward channels switching in deciding purchases and using e-commerce platform (Madahi and Sukati, 2016; Angraini, 2019). Wang et al. (2018) investigate the three constructs on farmers' intention toward abiding to certain standard in pesticide usage in China. The study finds that the three constructs have a significant and positive effect on the farmers' intention to abide by the standards of pesticide usage in China. Similar findings are also demonstrated in a study by Foltz et al. (2016) in examining the constructs impact of the computer and digital users' behaviour intention in changing their network security settings. These studies are in consensus with Ajzen (2015) findings and his proposition (1991) of the influence of the attitude, social norm, and perceived behaviour control on a person's behaviour intention toward the object in question.

Some studies find mixed results in which the perceived behaviour control is not significant while the attitude and the social norm are significant (Varma, 2018; Felix et al. 2022). This particular construct should reflect a person's confidence in performing the target behaviour in question and believes he or she is able to perform effectively with a degree of control. According to Ajzen (1991) the accuracy of measurement can be undermined if the person has a little information of the behaviour in question, or the requirements and resources for such behaviour have changed or unfamiliar elements in the situation emerged. If this issue is realised in a study, the perceived control behaviour may not explain the variation in the behaviour intention in question. From the observation of previous studies (Ajzen, 2015; Varma, 2018; Palupi and Santoso, 2019; Madahi and

Sukati, 2016; Felix et al. 2022;), the path coefficient of perceived behaviour control shown the least value though some are less than 0.1 and considered not significant. In contrast there are studies (Wang et al. 2018; Anggraini, 2019; Tsai et al. 2022 find that perceived behaviour control demonstrates the strongest effect on the behaviour intention.

This study will investigate the moderating role of age on the three constructs in influencing the behaviour intention. McKinsey (2015) reported the younger consumers are readily intent to use internet banking and mobile banking. Altallwabe et al. (Altallwabe et al., 2015) find that age plays a moderating role in the study on e-learning adoption at Jordanian universities. In contrast, Ming et al. 2022 find that this hypothesis is not supported in their study on intention to use e-wallet during the pandemic. Their finding is like a much earlier study in Saudi Arabia (Baker et al. 2007) testing the moderating effect of age and gender on the relationship between the three TPB constructs and intention to adopt a new technology implementation. Age apparently has no firm significant moderating role in the intention of technology acceptance within the context of TPB. All in all, the studies on technology adoption done produce mixed results as some find that it is not significant (Aboobucker, 2021) and some (Wong, 2021; and Khater, 2020) find age has influence on certain variables, i.e., social influence, behavioural intention, speed, and security. Liu et al (2022) however finds that generational cohorts have an impact on technology in mobile payment. Hence this study must examine whether digital banking leads to financial inclusion and the stakeholders must take cognisance that the digital banking should not lead to generational digital divide. Any improvement in banking services should embrace the total consumers and the bankers should fine tune their service applications to be friendly to all consumers. While McKinsey report (2015) has indicated there is a moderating effect of age, however the empirical study must examine the issue and produce results that will be useful to the bankers. Hence, the bankers should ensure the digital banking is friendly to all consumers regardless the generational cohorts.

Following the above discussion, this study proposes the hypotheses as illustrated in Fig. 1.

H1a: Attitude influences the behaviour intention toward digital banking.

H1b: Age affects the relationship between the attitude and the behaviour intention toward digital banking.

H2a: Social norm influences the behaviour intention toward digital banking.

H2b: Age affects the relationship between the social norm and the behaviour intention toward digital banking.

H3a: Perceived behaviour control influences the behaviour intention toward digital banking.

H3b: Age affects the relationship between the perceived behaviour control and the behaviour intention toward digital banking.

1.2 Research Framework

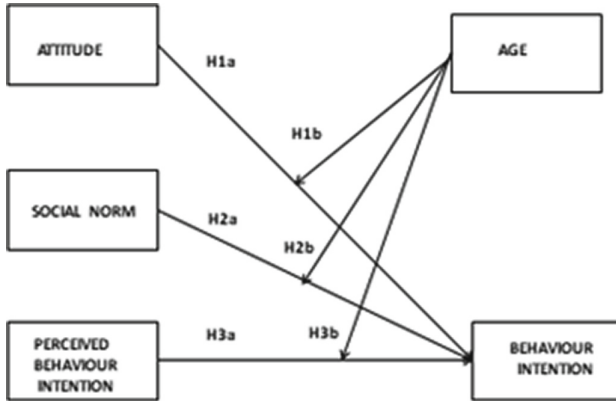


Fig. 1. The Research Framework

2 Research Methodology

A research design is referring as strategy to integrate the different components of the study in a logical way. According to Davis (2005), it is stipulating what would and what would not be observed in a study. In this study, the survey or non-experimental method which uses structured questionnaire was adopted. This method serves a way of primary data by interacting with a representative's sample of population (Zikmund, W. G. Zikmund et al., 2003). Data will be collected using a purposive sampling method, consumers who intention to use digital banking. This study opted purposive sampling methods as respondents were selected based on the consumers who has intentions to use digital banking. Moreover, this study will employ Ajzen (1991) conceptual model and examine whether age play any moderating role in the consumers' behavioural intention towards digital banking. Besides that, data analysis for this study will employ a combination of both descriptive statistic and inferential statistical tools of analysis in analyzing the data obtained from the questionnaire survey. While for descriptive statistics of percentages and frequencies will used in analyzing the respondents' demographic characteristics and the inferential statistics of Partial Last Square-Structural Equation Model will be used for analyzing and the testing the hypotheses.

3 Contribution of Study and Conclusion

There is a need to study on the consumers behaviour towards digital banking on the issuance of digital banking licences by Bank Negara Malaysia. It is important to understand consumers behavioural intention based on their attitude, social norm, and perceived behaviour control. Hence it will help banks to understand the customer intention to use their products and improve their quality of services.

While past studies have shown mixed result on the three constructs such as attitude, social norm, and perceived behaviour towards behaviour intention, hence this study will be benefited to the future researchers as it will provide new finding on the application of

Theory of Planned Behaviour by using age as the moderator in influencing consumers' behavioural intention to use digital banking.

Based on the literature, it shows that it is important to study on the consumers behavioural intention to use digital banking as the success of this new banking system can contribute to cost efficiency, service value differentiation, quick scalability, and revenue-focus products. Furthermore, it will increase the efficiency of banking system with this digital banking system to fulfil the need of cashless era due to COVID-19 pandemic.

References

- Aboobucker, Illmudeen (2021) What Motivates the Adoption Intention of e-banking Services: The Moderating Role of Age and Gender *Asian Journal of Management Studies Volume I Issue II (2021)* pp.128-143
- Ahmed, E.M., and G.S. Phin. "Factors Influencing the Adoption of Internet Banking in Malaysia." *Journal of Internet Banking and Commerce* 21:164 (2016).
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (pp. 11–39). Springer, Berlin, Heidelberg.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Ajzen, I. (2015). Consumer attitudes and behavior: the theory of planned behavior applied to food consumption decisions. *Italian Review of Agricultural Economics*, 70(2), 121-138.
- Altawallbeh, M., Soon, F., Thiam, W., & Alshourah, S. (2015). Mediating Role of Attitude, Subjective Norm and Perceived Behavioural Control in the Relationships between Their Respective Salient Beliefs and Behavioural Intention to Adopt E-Learning among Instructors in Jordanian Universities. *Journal of Education and Practice*, 6(11), 152-159.
- Anggraini, R. Y., Purnomosidhi, B., & Hariadi, B. (2019). The Determinant in e-commerce behavior with the decomposed theory of planned behavior model. *Southeast Asia Journal of Contemporary Business, Economics, and Law*, Vol. 18, Issue 5(February) 2019
- Aziz, N. H. A., & Dali, N. R. S. M. (2019). Factors Influencing Consumer'S Behavior Towards the Usage of Internet Banking. *International E-Journal of Advances in Social Sciences*, 5(14), 1005-1015.
- Azmi, N. N. N., Zahari, N. H. M., Yunus, Z. M., & Kamar, W. N. I. W. A. (2021). Determinants of User's Intention to Adopt Digital Banking Services in Malaysia. *International Journal of Advanced Research in Economics and Finance*, 3(4), 26-33.
- Baker, E. W., Al-Gahtani, S. S., & Hubona, G. S. (2007). The effects of gender and age on new technology implementation in a developing country: Testing the theory of planned behavior (TPB). *Information Technology & People*.
- BNM, April 2022. Five successful applicants for digital bank licenses; <https://www.bnm.gov.my>
- McKinsey (2021) Joining the next generation of digital banks in Asia <https://www.mckinsey.com>
- BNM, Mar 2020. Licensing Framework for Digital Banks; <https://www.bnm.gov.my>
- Barquin, S., & Hv, V. (2015). Digital Banking in Asia: What do consumers really want? *McKinsey & Company*, 1–12.
- Canguende-Valentim, C. F., & Vale, V. T. (2021). Examining the Intention to Purchase Luxury Goods Based on the Planned Behaviour Theory. *Open Journal of Business and Management*, 10(1), 192-210.
- Foltz, C. B., Newkirk, H. E., & Schwager, P. H. (2016). An empirical investigation of factors that influence individual behavior toward changing social networking security settings. *Journal of theoretical and applied electronic commerce research*, 11(2), 1-15.

- Liu C-H, Chen Y-T, Kittikowit S, Hongsuchon T and Chen Y-J (2022) Using Unified Theory of Acceptance and Use of Technology to Evaluate the Impact of a Mobile Payment App on the Shopping Intention and Usage Behavior of Middle-Aged Customers. *Front. Psychol.*
- Khater et al (2020) Customers Intention to Use Internet Banking: Age as a Moderator Variable. *International Journal of Scientific & Technology Research* Volume 9, Issue 03, March 2020
- Madahi, A., & Sukati, I. (2016). An empirical study of Malaysian consumers' channel-switching intention: Using theory of planned behaviour. *Global Business Review*, 17(3), 489-523.
- Ming, K. L. Y., & Jais, M. (2022). Factors affecting the intention to use e-wallets during the COVID-19 pandemic. *Gadjah Mada International Journal of Business*, 24(1), 82-100.
- Ni, T. W. (2020). Factors influencing behavioural intention towards adoption of digital banking services in Malaysia. *International Journal of Asian Social Science*, 10(8), 450-457.
- Palupi, D., & Santoso, B. H. (2017). An empirical study on the Theory of Planned Behavior: The effect of gender on entrepreneurship intention. *Journal of Economics, Business, and Accountancy Ventura*, 20(1), 71-79.
- Rehman, Z. U., & Shaikh, F. A. (2020). Critical factors influencing the behavioral intention of consumers towards mobile banking in Malaysia. *Engineering, Technology & Applied Science Research*, 10(1), 5265-5269.
- Submitter, G. A. T. R., Peong, K. K., Peong, K. P., & Tan, K. Y. (2021). Behavioural Intention of Commercial Banks' Customers towards Financial Technology Services. *Journals and Peong, Kwee Kim and Peong, Kwee Peng and Tan, Kui Yean, Behavioural Intention of Commercial Banks' Customers Towards Financial Technology Services (March 31, 2021). Reference to this paper should be made as follows: Peong, KK, 10-27.*
- Shanmugam, A., M.T. Savarimuthu, and C.W. Teoh. "Factors Affecting Malaysian Behavioral Intention to Use Mobile Banking With Mediating Effects of Attitude." *Academic Research International* 5, no. 2 (March 2014).
- Tsai, K. C., Chou, T. H., Kittikowit, S., Hongsuchon, T., Ruangkanjanases, A., Lin, Y. C., & Chen, S. C. (2022). Extending Theory of Planned Behavior to Understand Service-Oriented Organizational Citizen Behavior. *Frontiers in Psychology*, 1460.
- Varma, A. (2018). Big Data Usage Intention of Management Accountants: Blending the Utility Theory with the Theory of Planned Behavior in an Emerging Market Context. *Theoretical Economics Letters*, 8(13), 2803-2817.
- Wang, J., Chu, M., Yuan Deng, Y., Lam, H., & Tang, J. (2018). Determinants of pesticide application: an empirical analysis with theory of planned behaviour. *China Agricultural Economic Review*.
- Wong et al (2021) Age as Moderator between Factors Influencing and Adoption of E-Wallet in Malaysia *Review of International Geographical Education* 11(8), Spring, 2021
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2003). *Business research methods* 7th ed. Thomson/South-Western

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