

The Perceived Benefit and Risk Framework of E-Wallet Adoption among the Early Adopters in Malaysia

Roslina Hj. Mohamad Shafi, Faridah Najuna Misman

Department of Finance, Faculty of Business and Management, Universiti Teknologi MARA Cawangan Johor, Segamat Campus, Johor, Malaysia

Keywords: E-Wallet, Benefit, Risks, Early Adopters, Fintech

Abstract: Malaysia is prime for internet and mobile phone penetration, larger population for young, tech-savvy, and high financial literacy population. However, despite these advantages, the adoption of e-wallet remains low. Comparing to other regional countries, Malaysia is lagging behind China, India and Singapore. Malaysians are still sceptical on the adoption of fintech, particularly on the e-wallet usage. Accordingly, there is an urgent need to understand why users are willing or hesitant to adopt the e-wallet. Supporting the Bank Negara Malaysia's on the digital banking reforms, the study aims to accelerate further on the benefit and risk of e-wallet usage in Malaysia. A survey consists of eight components on benefits and risks on e-wallet has been conducted among the early adopters. The results reveal that the intention to use e-wallet is high. Economic benefit is the main factor of the e-wallet usage. However, the users responded negatively on the risks; signifying that stronger framework on the risk management should be established further.

1 INTRODUCTION

Financial technology (fintech) should embrace the fourth industrial revolution (IR 4.0). This is important especially among today's digitally savvy consumers who used to experience the convenience and performance of Uber, Amazon, Alibaba and Netflix. Similarly, the consumers are expecting the same IR from the banks and financial institutions. The Bank Negara Malaysia (BNM) is currently accelerating from conventional payments system to electronic payments (e-payments) system reforms. E-wallet is the third wave of Malaysia banking reforms in the e-payments system. The banking reform is taken to address the vision of Financial Sector Blueprint 2011-2020 (FSBP). The main purpose of this banking reform is mainly to correct price distortions, 'rewire' market incentives, and improve the accessibility, quality and value proposition of e-payment services. Many initiatives and facilities have been established to address the objectives of the reform, with the expectation that mobile payment plays significant roles in facilitating the e-wallet adoption. Malaysia is prime in realizing the e-wallet reform because of its high penetration for internet and mobile phone usage, larger young population, tech-savvy, and high

financial literacy population (Punwatkar & Verghese, 2018). As the usage of the mobile payment increasing, the volume of cheque usage has declined by 42 percent; while the volume of electronic funds transfer (EFT) has exceeded cheque usage by 2.8 times in the year 2017. In addition, the volume of debit card transaction had increased by more than six times from 25.1 million in 2011 to 162.3 million in 2017 (BNM, 2018).

However, despite the declining usage of cheque and debit card transaction, the e-wallet adoption in Malaysia still at its infancy. According to Nielsen Payment Landscape Report, while 67 percent of Malaysians use some form of cashless payment (with debit card; 63 percent, and online banking; 57 percent, being the primary method), yet a mere 8 percent of the population uses mobile wallets as a way of payment.

The low adoption of e-wallet is however hinder by many challenges, from both the merchants and customers' perspectives. For instance, lower tier merchants facing barriers where they need to pay a transaction fee (also known as the Merchant Discount Rate or MDR) and to subscribe to point of sales (POS) terminal facilities. On the other hand, customers have different perception on the benefits of e-wallet, where at the same time they are also

concerns on the safety risk and financial risk of the e-wallet adoption. The perception on the e-wallet adoption is also depending on the customers' age. Kumar & Lim (2008) compared the willingness to adopt mobile service among the baby boomers and generation Y. They found that being a member of a particular generation could influence willingness to use mobile technology. This is further supported by Goi & Ng (2011) who reveals that young customers using mobile phones have a positive perception of using mobile commerce applications.

Accordingly, the study intends to explore further the main drivers that influence the adoption of the e-wallet among the early adopters. The study also intends to shed lights on whether the adoption of e-wallet is in line with the theory of reasoned action (TRA) where it explains the relationship between attitudes and behaviors within human actions.

The remaining of the study will discuss the literature in Section Two, follows by data and methodology in Section Three, results and analysis in Section Four and concludes in Section Five.

2 THE BENEFIT AND RISK CHALLENGES ON THE ADOPTION OF E-WALLET AND FINTECH

Studies on the area of e-wallet adoption is still at the early stage. Therefore, the study will adapt and adopt similar approach and variables that is available in the fintech literature instead. The study considers three types of benefits namely the i) economic benefit, ii) convenience, and iii) transaction process. On the other hand, four categories of risks is considered namely i) financial risk, ii) legal risk, iii) security risk, and iv) operational risk.

Earlier studies in fintech also discussed the benefits of fintech using similar terminologies like 'perceived usefulness' and 'perceive ease of use'. For instance, Bhattacharjee & Sanford (2006) and Kim & Choi (2015), reveals that when a user feels "usefulness" through various factors, this has led to a high impact on "intention to use". Lee & Shin (2011) claimed that 'ease of use' could be affected by technology readiness and specialized knowledge, which in turn had an impact on "intention to use".

Kim, Park, Choi & Yeon (2015), studied the mobile payment services in Korea. The study analyzed the causal relationship between CFIP (Concern for Information Privacy) and Self-efficacy. The result reveals that convenience and usefulness are

the most critical influential variables in adopting the mobile payment service. Similarly, (Ryu, 2018) also supported that convenience is also perceived as one of the factors in using the fintech.

In addition, brand and service trusts also plays a role in determining the acceptance of fintech among the customers. Chuang, Liu & Kao (2016) studied the behavioral intention among consumers in Taiwan servicing industry. The study reveals that brand and service trust has a significantly positive effect on attitudes of fintech users.

The intention to adopt the fintech is also associated with age factor. Young people have always related their fintech experience with emotions. Emotions, such as enjoyment and sense of fun, influence the perceived level of satisfaction with mobile services (Kumar & Lim, 2008). This is further evidence by Boonsiritomachai & Pitchayadejanant (2017) who reveals that the hedonic motivation theory, specifically the pleasure of using mobile banking as the most important factor of fintech adoption among the gen Y in Thailand. Similar trend of e-wallet adoption also can be identified in Cambodia. The millennial of Cambodian, also has high expectation on the benefits factors of the e-wallet namely the performance expectancy, effort expectancy, and facilitating condition (Cheng, Khim & Thai, 2018).

On the other hand, the adoption of the fintech is also depending on the perception of risks. The main barrier to use mobile banking in Thailand, Cambodia and India is mainly on security concerns (Tavilla, 2015; Boonsiritomachai & Pitchayadejanant, 2017; Punwatkar & Verghese, 2018), consumer behavior and functional barrier (Cheng, Khim & Thai, 2018). The security becomes the most considered factor because consumer's experienced transparency in the payment process that entrusted their safety.

Besides, customers are also concern on the legal risks. Recent study by Ryu (2018), shows that there are concern on legal risks among the early adopters and late adopters in Korea. Trust play as an important role in reducing the customers' perception on the risk of using e-wallet. Trust is the top challenge to fintech users in markets such as Chile, France and Japan. This is especially true when customers are more rely on their current banks or insurer when considering a new service, rather than alternative fintech providers (Ernst & Young, 2019).

Synthesizing all the literatures above, the study would hypothesize further whether the benefits and risks are the factors of the e-wallet adoption among the early adopters in Malaysia.

3 DATA AND METHODOLOGY

This study aims to investigate the relationship between the benefit and risk framework of e-wallet among the early adopters. Early adopters are chosen as respondents because this generation will set and dominate the market in the next 10-15 years. Besides, early adopters are IT-savvy and are more enthusiastic on the digital platforms. In order to achieve the objective, this study employed a primary data survey by sending a questionnaire to the undergraduate students of Universiti Teknologi MARA Cawangan Johor, Malaysia. The questionnaires were distributed to the students that have intention to use the e-wallet services. A method of purposive sampling was applied in this current study. A total of 100 respondents have participated in the survey. However only 96 were found usable for the data analysis. The set of questionnaires was adapted from Ryu (2018). Few items for each category; benefits and risks were used to measure all variables. Each of items has assigned a corresponding Likert Scale with anchors ranging from 1 as “Strongly Disagree” and 5 as “Strongly Agree”.

This research focusses into two broad categories which are benefit and risk framework of e-wallet adoption in Malaysia. To study the perceived benefit of e-wallet, this study examines three major areas, namely economic benefit, convenience and transaction process. While for the perceived risk framework, this study focusses only into four categories of risks, namely financial risk, legal risk, security risk and operational risk. Figure 1 presents the proposed research framework used in this study.

Ryu (2018) claims that consumers will normally choose available services that offer them the best value with a given risk states. In this study, perceived benefit is expected to have a positive relationship with the e-wallet adoption decision. On the other hand, perceived risk is expected to have a negative relationship with the e-wallet adoption. The following hypotheses are proposed.

- $H_0: \beta \leq 0$
- $H_1: \beta > 0$
- H_1 : Perceived benefit is positively related to E-wallet adoption decision
- $H_0: \beta \geq 0$
- $H_2: \beta < 0$
- H_2 : Perceived risk is negatively related to E-wallet adoption decision

Data collected from the survey was analyzed using the IBM SPSS version 25 software. A descriptive statistic is used to explore and understand the important information of the respondents. The factor analyses using the principal component analysis (PCA) approach were used to reduce the variables that are account for. This study also runs a correlation test and multiple regression to examine which variables; perceived benefit and perceived risk that will influence the decision to adopt e-wallet services among early adopter. Below is the regression equation used:

$$\text{Adoption Intention}_i = f(\text{Perceived benefit}_i, \text{Perceived risk}_i) + \epsilon_i$$

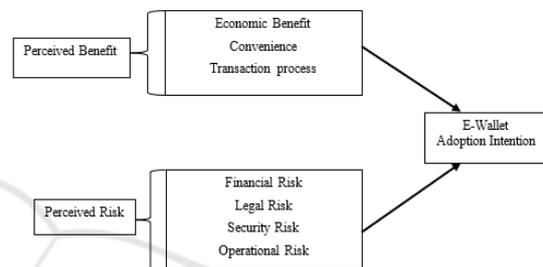


Figure 1: Proposed Research Framework

Table 1. Sample Profile

Location	Frequency	Percentage	Frequency of Uses	Frequency	Percentage
Rural Area	15	15.63	Once a week	11	11.46
Sub-urban area	22	22.92	At least once per month	46	47.92
Small town	31	32.29	More than once in a month	19	19.79
Big City	28	29.17	Everyday	1	1.04
			Never use	19	19.79
Total	96	100.00	Total	96	100.00

4 RESULTS AND ANALYSIS

As mention in the previous section, there are seven variables; three variables under perceived benefits category (economic, convenience and transaction) and four variables under perceived risk category (financial, legal, security and operational risks). However, after the factor analysis procedure, the test suggested the item to be categorized into only five groups of variables. Therefore, the items were re-categorized according to the factor analysis results. The five new categories are economic benefits, convenience, financial risk, security risk and operational risk. Table 1 reports a sample profile of the study. As the study using a purposive sampling in the data collection methods, all the respondents are the students of UiTM Cawangan Johor with the age range between 15 to 25 years old. The table shows

that majority of the respondents which is about 47.92 percent at least use an e-wallet services once a month.

The statistics also reports that about 11 and 19 percent of the respondents uses e-wallet once in a week and more than once time in a month, respectively. Out of 96 respondents, only 19 respondents never use the e-wallet services. These statistics imply that e-wallet services are quite well acceptable among the early adopters in the study.

To further investigates the relationship between the benefit and risk with the intention to use the e-wallet services, this study conducted a Pearson correlation test. The result of the test is reported in Table 2. The correlation examines the relationship between dependent and independent variables and by conducting this test, the nature of relationship of the variables can be known. The test identifies three variables to have a positive relationship with the intention to adopt e-wallet services.

Table 2. Correlation Results

	Adoption	Economic	Financial	Convenience	Security	Operational
Adoption	1.0000	0.506**	-0.0179	0.315**	0.0384	-0.0649
Economic	0.506**	1.0000	0.1277	0.530**	-0.0027	0.0020
Financial	-0.0179	0.1277	1.0000	0.0802	0.316**	0.245*
Convenience	0.315**	0.530**	0.0802	1.0000	0.1522	0.0025
Security	0.0384	-0.0027	0.316**	0.1522	1.0000	0.478**
Operational	-0.0649	0.0020	0.245*	0.0025	0.478**	1.0000

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

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

The variables are economic, convenience and security. These results imply that the higher economic benefits, convenience and high security may influence users to adopt e-wallet services. However out of three positive results only two of them are having a significant correlation with intention to adopt the e-wallet services. The two variables are economic benefits and convenience. The negative correlation between financial and operational risk are as expected. These indicates that, the higher the risk exposure resulted from the transaction the lower the influence on the intention to adopt the e-wallet. Theoretically, the provider of the e-wallet services should ensure that the financial and operational risk are at very minimum level or they should guarantee that all transactions are safe.

To further investigate the factors that may influence the e-wallet adoption, this study conducts a multiple regression analysis. The dependent variable was regressed against the independent variables. The analysis is conducted using a cross sectional regression of 96 respondents. Table 3 presents the multiple regression results. The explanatory power of the results of the regression model is about 27.7 percent. This figure indicates that 27.7 percent from

the variation of dependent variable is explained by the independent variables includes in the study. Economic benefit shows a positive and significant result at 1 percent significance level. The coefficient value of economic benefit is 0.521. This implies that when the economic benefit of e-wallet increases by one unit, it will increase the intention to use it by 0.521.

This study suggests that only one variable that is statistically significant to influence the decision to adopt the e-wallet services among early adopters. The other variables included in this study does not shows any statistically significant influence on the decision to adopt the e-wallet services. This result is partly in line with the previous studies which linking the benefits and adoption of various fintech services (for instance Kim & Choi, 2015; Lee & Shin, 2011).

The results of this study also partially answering the Theory of Reasoned Action (TRA). The pre-existing attitude does affect the student’s intention to adopt the e-wallet.

Table 3: Regression results

	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	1.8646	0.5247	3.5535	0.0006**
Economic	0.5210	0.1127	4.6214	0.0000**
Convenience	0.0389	0.0978	0.3980	0.6916
Financial	-0.0990	0.0991	-0.9996	0.3202
Security	0.0920	0.0908	1.0126	0.3140
Operational	-0.0799	0.0872	-0.9160	0.3621
R-Squared	0.2770			
F-Stat	6.888 (0.000) **			

** . Correlation is significant at the 0.01 level (1-tailed).

Yet, the overall results of this study may be contradicting with previous findings (Ryu, 2008) due to a few reasons. The first reason, culture and geographical area might play an important role in the decision of adopting the e-wallet services. Majority of the retails customers still prefer to use a traditional payment in their daily transactions. Second, e-wallet services are considered new in Malaysia. E-wallet start its journey as an e-payment in Malaysia financial system on early of 2018. Due to this reason, there is a possibility of not many customers truly understand how its work. The finding of this survey suggests that the economic benefit such as cheaper fees or amount of discount offered is the only significant factor that affect their decision to use the E-wallet. The finding also suggests that the early adopters not really taking care on the risk involved in the transaction of e-

wallet. This might be due to the age factor as younger generation are normally willing to take risky activities as compared to the more matured generation. Cauffman et al. (2010) claim that avoidance behaviours increase linearly with the age.

5 CONCLUSION AND RECOMMENDATION

The adoption of e-wallet services has gradually getting attention among the consumers. The banking sector should take this opportunity to realize the transformation of banking sector in line with the IR4.0. The study shed lights on the demand-side survey among the early adopters of e-wallet. It discloses the factors of e-wallet adoption whether it is influence by its benefits or by its risks. The study reveals that the early adopters in UiTM Cawangan Johor are driven by the perceived economic benefits, rather than fear on the risks. This is especially true in the case of the undergraduate's students where they have limited financial resources and therefore choosing services that is cheaper and lower costs. Result on the perceived risk is statistically insignificant, even though it is showing negative relationships. It is still perplex as whether the early adopters are truly risk-taker (who love thrills and do not mind taking risky actions on the e-wallet adoption), or whether they are actually risk-neutral (have lack of awareness on the risk-effect of the e-wallet services; are not really sure whether they like or dislike risk, or they simply do not think about it enough to worry). However, our benefit and risks framework have certain limitations. We have not studied psychological factors, such as social influences; and we should also extend our scopes on the risks side by including the privacy risks, and cyber security risks. Hence, suggesting direction of the forthcoming research.

The study also suggests some paradigm shift in the implementation of the banking policy where the banks might need to disclose more benefits of the e-wallet adoption among the youngsters. The banks also should reveal and make it clear on the term and conditions, that is related to the risks. Banks should be able to 'learn' a customer's preferences to provide tailored customer recommendations and enable rapid responses.

REFERENCES

- BNM, Bank Negara Malaysia (2018). *Transforming Mobile Phones into E-Wallets in Malaysia*.
- Bhattacharjee, A., & Sanford, C. (2006). Influence Processes for Information Technology Acceptance: An Elaboration Likelihood Model. *MIS Quarterly*, 30(4), 805–825. Retrieved from <http://www.itandsociety.org>
- Boonsiritomachai, W., & Pitchayadejanant, K. (2017). Determinants Affecting Mobile Banking Adoption by Generation Y based on the Unified Theory of Acceptance and Use of Technology Model modified by the Technology Acceptance Model Concept. *Kasetsart Journal of Social Sciences*, 1–10. <https://doi.org/10.1016/j.kjss.2017.10.005>
- Cauffman, E., Shulman, E. P., Steinberg, L., Claus, E., Banich, M. T., Graham, S., & Woolard, J. (2010). Age Differences in Affective Decision Making as Indexed by Performance on the Iowa Gambling Task. *Developmental Psychology*, 46(1), 193–207. <https://doi.org/10.1037/a0016128>
- Cheng, F. M., Khim, C., & Thai, S. (2018). Consumer Adoption of E-Wallets: A Study of Millennials at the Institute of Foreign Languages, Cambodia. In *Proceedings of the 21st Asia-Pacific Conference on Global Business, Economics, Finance & Social Sciences* (pp. 1–16). Retrieved from www.globalbizresearch.org
- Chuang, L.-M., Liu, C.-C., & Kao, H.-K. (2016). The Adoption of Fintech Service: TAM Perspective. *International Journal of Management and Administrative Sciences (IJMAS)*, 3(07), 1–15. Retrieved from www.ijmas.org
- Ernst & Young. (2019). *Global FinTech Adoption Index 2019*. Retrieved from https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf
- Goi, C. L., & Ng, P. Y. (2011). Perception of Young Consumers on Mobile Phone Applications in Malaysia. *World Applied Sciences Journal*, 15(1), 47–55.
- Kim, Y., Choi, B., & Choi, J. (2015). A Study on the Successful Adoption of IoT Services: Focused on iBeacon and Nearby. *Journal of Information Technology Services*, 14(1), 217–236. <https://doi.org/10.9716/kits.2015.14.1.217>
- Kim, Y., Park, Y.-J., Choi, J., & Yeon, J. (2015). An Empirical Study on the Adoption of "Fintech" Service: Focused on Mobile Payment Services. *Advanced Science and Technology Letters*, 114(Business), 136–140. <https://doi.org/10.14257/astl.2015.114.26>
- Kumar, A., & Lim, H. (2008). Age Differences in Mobile Service Perceptions: Comparison of Generation Y and Baby Boomers. *Journal of Services Marketing*, 22(7), 568–577. <https://doi.org/10.1108/08876040810909695>
- Lee, J.-E., & Shin, M. (2011). Factors for the Adoption of Smartphone-based Mobile Banking: On User's Technology Readiness and Expertise. *Journal of Society for E-Business Studies*, 16(4), 155–172.

Punwatkar, S., & Verghese, M. (2018). Adaptation of e-Wallet Payment: An Empirical Study on Consumers' Adoption Behavior in Central India. *International Journal of Advanced in Managament, Technology and Engineering Sciences*, 8(3), 1147–1156. Retrieved from <http://www.ijamtes.org/gallery/154 conf-mba.pdf>

Ryu, H.-S. (2018). Understanding Benefit and Risk Framework of Fintech Adoption: Comparison of Early Adopters and Late Adopters. In *Proceedings of the 51st Hawaii International Conference on System Sciences* (pp. 3864–3873). <https://doi.org/10.24251/hicss.2018.486>

Tavilla, E. (2015). *Transit Mobile Payments : Driving Consumer Experience and Adoption*.

APPENDIX

Table 4: Differences between Network Based and Card Based E-Wallet

	Network Based E-Wallet	Card Based E-Wallet
Types	It stores digital money on the cloud	It rides on existing card network
Examples	WeChat pay, Grab Pay, Touch n Go	AEON wallet, BigPay, Mpay Walet
Issuing e-money	Yes	Yes
Pay to other merchants (open loops)	Yes	Yes
Linked to a card scheme (visa, mastercard)	No	Yes