

Determinants of Intention to Use the Mobile Payment Apps among Malaysian Users

Guan Yuchen¹, Qin Ronghua², Dr. Yong See Chen³

¹PhD Candidate, SEGi University, Malaysia

²BBM, SEGi University, Malaysia

³Lecturer, Graduate School of Business, SEGi University, Malaysia

Abstract: This research purpose is to study on Malaysian users' intention to use the mobile payment apps in Malaysia market, and to determine the relationship from perceived ease of use, perceived usefulness, perceived security and word of mouth to the intention to use the mobile payment apps in Malaysia. This research is conducted in the quantitative research, and the correlation survey is designed by adapting from the past researches to process this research. This correlation surveys have been distributed to the target respondents who are Malaysian citizen using the mobile phone, and with 250 valid respondents completed, it is found that the word of mouth has the highest influence on the intention to use the mobile payment apps in Malaysia, and the perceived security has negative influence in this research. The survey results were mainly based on respondents in Malaysia and will give some implications to the mobile payment apps development and the mobile commerce development in the future.

Key Word: Intention to use, Perceived ease of use, Perceived usefulness, Perceived security, Word of mouth

Date of Submission: 18-05-2020

Date of Acceptance: 03-06-2020

I. Introduction

1.1 Background of Study

Intention to use is on the behavior intention topic which is widely studied in the academic way to test the individual behaviors. With the online shopping development and the e-commerce development in the current market, the behavior intentions among the customers are important to predict their behavior intention to increase their revenues and the customers or potential customers. For instance, the researchers have conducted on the behavior intention to use the internet banks in the other market, South Korean (Lee, and Kim, 2020), and the intention to use the smart wireless payment in Chinese market (Khayer, and Bao, 2019). Due to lack research on the behavior intention on the mobile payment apps in Malaysia market, the intention will be studied in Malaysia market to research the predictors of the intention to use the mobile payment app in this research.

As it is reported in The Malaysian Reserve on March 15, 2020, there are many different e-wallet in Malaysia market for the users to make the payment by their phones, like the Touch 'n Go ranking at the top, Boost, the GrabPay, and the Razer Pay (Birruntha S., 2020). Hence, in this study, the intention to use the mobile payment apps will be tested among the Malaysian users in the local market. In this way, it will contribute to the current mobile payment apps improvement and get more users in the futures.

1.2 Problem of Statement

The main problem on the intention to use the mobile payment apps is the safety issue. As the study, there are some barriers for the current users to increase their intentions to use the mobile payment apps (Anouze and Alamro, 2019). In that study, the bank customers are studied in Amman, Jordan, and the safety issue is important on using these kind new payment approach and the wireless payment approach. Then the usefulness and the ease of use is another big problem for the users in that study on whether the users can use these mobile payment apps to transfer with a quick speed and much convenience (Khayer, and Bao, 2019). In particular, the users do not know much about these apps, the these users may not learn to use this mobile payment apps. Hence, this study will test the users intention to use these mobile payment apps in Malaysia market with these safety issue and the issue on the ease of use issue and the usefulness.

1.3 Research Objectives

(1) To determine the relationship between the perceived ease of use and the intention to use the mobile payment apps in Malaysia.

(2) To test the relationship between the perceived usefulness and the intention to use the mobile payment apps in Malaysia.

(3) To explore the relationship between the perceived security and the intention to use the mobile payment apps in Malaysia.

(4) To find the relationship between the word of mouth and the intention to use the mobile payment apps in Malaysia.

II. Literature Review

The topic of behavior intention is widely studied, and the intention to use is under the behavior intention. In this research, it is just focusing on the intention to use the mobile payment apps in the market of Malaysia. In this case, there are many researches on the intention to use that have been conducted in the other markets (Anouze and Alamro, 2019) and in the other model (Humbani, and Wiese, 2019). In this case, this research will be done in another market, Malaysia, and with different predictors in this research.

Perceived Ease of Use

The definition of the perceived ease of use is the extent of the convenience with the use of the information system and it refers that what the degree of this information system can be understood or not (Davis, 1989). Ghazali et al., (2018) also defined the perceived ease of use as the level of the convenience when using the information system which can be understood or not. In the past research, it is found that the perceived ease of use has significant effect on the customer attitude to adopt the technology or not in the mobile payments adoption (Bailey et al., 2017) and in the technology application or not mobile commerce (Ghazali et al., 2018).

Perceived Usefulness

The definition of the perceived usefulness is as the belief from the users to have the experiences using the a particular system, and this specific system can be helpful to increase their performance (Davis, 1989). In the past researches, the perceived usefulness has the significant effect on the customer's attitude, then to affect the customers' further behaviors in the mobile payment technology adoption (Oliveira et al., 2016) and the mobile payments among consumers (Slade et al., 2015).

Perceived Security

The perceived security is as the transaction security when it is using the internet to transfer the information or other things (Fung, et al., 1999), and in the perceived security, it includes the internet security, the perspective of infrastructure, the privacy, and security of the transaction in different distance. Based on Lee and Kim, (2020), the security has a negative effect to the customers' behavior intention, when these researchers studied the online or the internet banks. In this case, in the same attention on the payment wireless, the perceived security may have the negative influence on the customer; intention to use.

Word of mouth

The definition of the word of mouth is as the given comments, as the receiving influence (Sweeney et al., 2012). It is the customers' perceptions that they believe this technology is accepted and is used by the prominent models or theories like the theory planned behavior, and theory reasoned action (Ajzen, 1991; Fishbein and Ajzen, 1975). In the past researches, the word of mouth, is as the interpersonal driver related to the communication to adopt this thing (Oertzen and Odekerken, 2019).

Intention to Use

The definition of the intention to use is as a measure to accept the use of the technology successfully (Namahoot and Laohavichien, 2018). Fishbein and Ajzen (1975) defined the intention to use as the attitude and recognition on this services. Based on the TRA (theory of reasoned action) the attitude can affect the behavior intention in the study. The intention to use can be affect by the customer satisfaction which is as motion to increase, when the technology increases. In the past research, it is found that the perceived ease of use can indirectly affect on the intention through usefulness (Cho, 2016). This intention can be described as the users to have the behaviors continually used it in the future (Setterstrom et al., 2013).

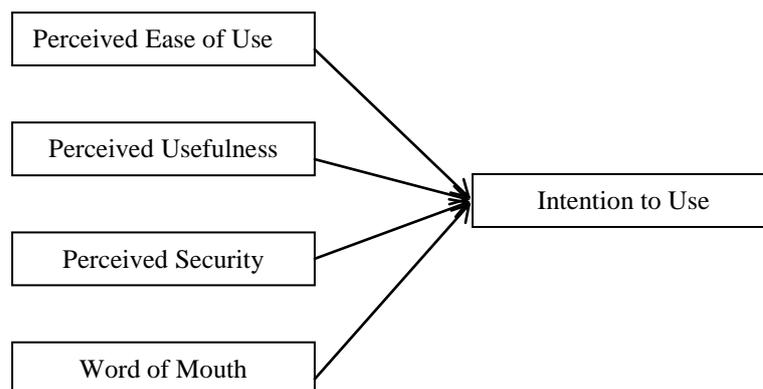


Figure 1: Conceptual Framework

In this figure, it shows the conceptual framework in this study on the predictors of intention to use the mobile payment apps in Malaysia. The figure shows that independent variables are the perceived ease of use, the perceived usefulness, the perceived security, and the word of mouth. The dependent variable is the intention to use.

III. Methodology

In this research, the sample is the mobile payment apps users in Malaysia. With the convenience sample technique, and 250 sample size, the correlation survey is conducted via the online to collect the data on the intention to use the mobile payment apps in Malaysia market. In the questionnaire design, the 5 Likert Scale is used and the questions are adopted from the past researches, like the questions on intention to use, perceived ease of use, perceived usefulness, and perceived security from Anouze and Alamro (2019), and word of mouth from Oertzen and Odekerken (2019), as shown in the appendix. With the Google form, the research is done in the online. With the data analysis in SPSS, the correlation analysis and regression analysis will be used to test the relationship to the intention to use the mobile payment apps in Malaysia market.

IV. Result

4.1 Demographic profile

Demographic profile			
		Frequency	Percent
Gender	Male	87	34.8%
	Female	163	65.2%
Age	20 and below	75	30.0%
	21 to 30	106	42.4%
	31 to 40	57	22.8%
	41 to 50	10	4.0%
	51 to 60	1	0.4%
	61 and above	1	0.4%
Ethnicity	Malay	13	5.2%
	Chinese	206	82.4%
	India	28	11.2%
	Others	3	1.2%
Monthly Income	Below RM 2000	102	40.8%
	RM 2001 - RM 3000	85	34.0%
	RM 3001 - RM 4000	42	16.8%
	RM 4001 - RM 5000	13	5.2%
	RM 5001 - RM 6000	2	0.8%
	RM 6001 and above	6	2.4%
Usage Experiences	1 - 2 years	112	44.8%
	3 - 5 years	124	49.6%
	6 - 8 years	11	4.4%
	Above 8 years	3	1.2%

On the demographic profile, there are 87 male users and 163 female users among the total 250 users, more females using the mobile payment app in Malaysia market. On the age, more young users are researched in this study. For instance, there are 95.2% users under 40 years old, with 75 respondents (20 years old and below), 106 users (between 21 and 30 years old), and 57 users (between 31 and 40 years old), with 30%, 42.4%, an 22.8%

respectively. On the Ethnicity of the mobile payment users, most users are Chinese, 206 users and with 82.4% in this Malaysia market. On the users' monthly income, more users are the young in this research. For instance, there 102 (40.8%) users just have the income RM2,000 and below, and another two lager groups are between RM2,001 and RM3,000 and between RM3,001 and RM4,000, with the respect 85 (34%) and 42 (16.8%) in this research. The users who get high monthly income are not so many, such as just 13 users getting between RM4,001 and RM5,000, 2 users getting between RM 5,001 and RM6,000, and 6 users getting above RM6,000, with the respect 5.2%, 0.8%, and 2.4% in this research. Finally, on the mobile payment apps usage period among the users, there are 112 (44.8%) users using the mobile payment apps less than 2 years and 124 (49.6%) users users using the mobile payment apps about 3 to 5 years already. There is less users using these mobile payment apps more than 4 years, just 11 (4.4%) and 3 (1.2%) users using 5 to 8 years and 8 years above respectively.

Reliability Statistics

Variables	Cronbach's Alpha	N of Items
Perceived Ease of Use	.950	4
Perceived Usefulness	.914	4
Perceived Security	.922	4
Word of Mouth	.932	6
Intention to Use	.924	4

On the reliability test, the table shows the Cronbach's Alpha and the number of the items, and there are very good reliability, all Cronbach's Alpha more than 0.9 (general, Cronbach's Alpha 0.7 is acceptable). In specific, the Cronbach's Alpha 0.950 on the perceived ease of use, 0.914 on the perceived usefulness, 0.922 on the perceived security, 0.932 on word of mouth, and 0.924 on the dependent variable intention to use in this research.

Correlations

		PEU	PUN	PSE	WDM	INTU	
Spearman's rho	PEU	Correlation Coefficient	1.000				
		Sig. (2-tailed)	.				
		N	250				
	PUN	Correlation Coefficient	.861**	1.000			
		Sig. (2-tailed)	.000	.			
		N	250	250			
	PSE	Correlation Coefficient	.695**	.752**	1.000		
		Sig. (2-tailed)	.000	.000	.		
		N	250	250	250		
	WDM	Correlation Coefficient	.671**	.729**	.869**	1.000	
		Sig. (2-tailed)	.000	.000	.000	.	
		N	250	250	250	250	
	INTU	Correlation Coefficient	.719**	.768**	.827**	.870**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.
		N	250	250	250	250	

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

PEU, perceived ease of use; PUN, perceived usefulness; PSE, perceived security; WDM, word of mouth; INTU, intention to use

Due to the data in this research is not normally distributed, the Spearman's rho correlation will be used to show the correlations between the variables instead of the Pearson Correlation. Table 4.6 indicates the correlations among the 250 respondents and it indicates the correlation with 2 tailed at 0.01 level. Then it is found that there is a high correlation between perceived ease of use and intention to use with correlation coefficient 0.719, and a high correlation between perceived usefulness and intention to use with correlation coefficient 0.768. Beside this, there is a very high correlation between perceived security and intention to use with coefficient 0.827, and a very high correlation between word of mouth and intention to use with coefficient 0.870 in this research. Hence, word of mouth and perceived security have high correlation with intention to use.

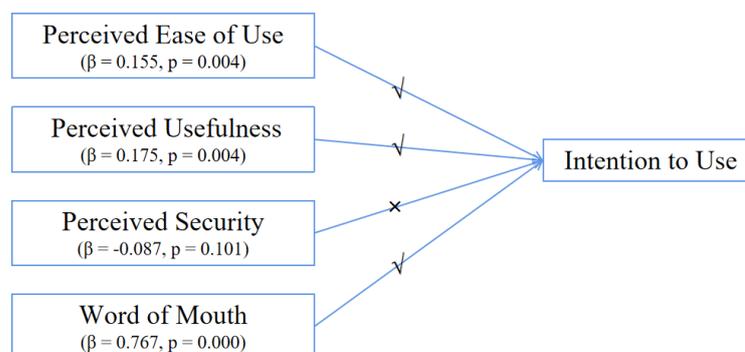
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	-.009	.122			-.077	.939
PEU	.155	.053	.157		2.936	.004
PUN	.175	.061	.163		2.880	.004
PSE	-.087	.053	-.085		-1.645	.101
WDM	.767	.053	.750		14.483	.000

a. Dependent Variable: INTU

PEU, perceived ease of use; PUN, perceived usefulness; PSE, perceived security; WDM, word of mouth; INTU, intention to use

Based on correlation, the significance is 0.004 for perceived ease of use, 0.004 for perceived usefulness, 0.101 for perceived security, and 0.000 for word of mouth. Hence, this p value ($0.101 > 0.05$) shows that there is no relationship between perceived security and intention to use the mobile payment apps, and others variables can indicate there is a significant relationship to intention to use. Furthermore, in the primary data, the Unstandardized Coefficients will be considered, such as the 0.155 on perceived ease of use, 0.175 on perceived usefulness, and 0.767 on word of mouth. In this case, the perceived ease of use and the perceived usefulness has weak influence positively on the intention to use the mobile payment apps in Malaysia. Moreover, the word of mouth has the highest influence (with 0.767 coefficient) on the intention to use the mobile payment apps in Malaysia.



With the data analysis, firstly, there is no relationship between the perceived security and intention to use the mobile payment apps in Malaysia, because the p value is 0.101, more than 0.05. Perceived security may not as a factor influence consumers' intention to use mobile payment apps. Secondly, there is a significant relationship between the perceived ease of use and intention to use the mobile payment apps, because the p value is 0.004 (<0.05), and perceived ease of use has weak positive influence on the intention to use the mobile payment apps, with the 0.155 coefficient. Thirdly, there is a significant relationship between the perceived usefulness and intention to use the mobile payment apps, because the p value is 0.004, less than 0.05, and perceived usefulness has weak positive influence on the intention to use the mobile payment apps, with coefficient 0.175. Lastly, there is a significant relationship between word of mouth and intention to use the mobile payment apps in Malaysia, because the p value is 0.000 (<0.05), and the coefficient is 0.767. Hence, when the word of mouth increases on the mobile payment apps, the users will have high intention to use this mobile payments apps in Malaysia market.

V. Conclusion

To the research objectives, perceived ease of use has the weakest influence on the intention to use the mobile payment apps, perceived usefulness has the weak influence on the intention to use the mobile payment apps, and the On the relationship between the word of mouth and the intention to use, there is a high correlation between them and word of mouth has the highest influence on the intention to use the mobile payment apps in Malaysia. Finally, perceived security has high correlation with intention to use in the correlation test, but in the regression analysis, there is no relationship between perceived security and intention to use. them. This may be because that the current users have more confidence in the security level of the mobile payments and the perceived security may not be as the factor to drive the users in Malaysia to increase their intention to use in Malaysia.

On the practical implication, the providers of the mobile payment apps can invest more on the advertising to increase the word of mouth and increase the positive influence and positive image among the users in Malaysia. In this way, the positive word of mouth and the high influence on the intention to use will attract more users to use their mobile payment apps in Malaysia market. Moreover, the perceived security has no relationship to the intention to use, but the mobile payment apps providers can also make sure the mobile payment is safe in the Malaysia market. This is because that the security is a basic factor influencing on the intention to use and all the mobile payment apps providers can all make their payment apps safe to be used. In this case, this factor may not has the influence on the intention to use the mobile payment apps in Malaysia.

On the limitations, the first limitation is that the respondents are more on the Chinese in the ethnicity, and less respondents in the Malay respondents and India respondents. In this case, the result cannot fully reflect the Malaysia situation on the intention to use the mobile payment apps. Then, the sample technique is the

convenience, and with this non-probability sample technique the research result is difficult to be generalized for the population in Malaysia market.

In conclusion, this research is on the intention to use the mobile payment apps in Malaysia market, with the research, the providers may improve their mobile payment apps quality and service to the users and the users can also be motivated to increase their intention to use these mobile payment apps with the results and further strategies by providers. In that case, this mobile payment can be more widely used in the market and the trade can be improved with more easily and useful payment approach with high security in the mobile payments apps in Malaysia. Based on this research, it is recommended that the mobile payment apps providers can invest more on the advertising to increase their positive word of mouth in Malaysia market, so this will increase the users' intention to use these mobile payment apps in Malaysia. In the further research, the samples can be selected with more Malay and India in the ethnicity to make the further research results be more easily generalized for the research population.

References

- [1]. Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.
- [2]. Anouze, A. and Alamro, A. (2019), "Factors affecting intention to use e-banking in Jordan", *International Journal of Bank Marketing*, Vol. 38 No. 1, pp. 86-112.
- [3]. Bailey, A.A., Pentina, I., Mishra, A.S. and Ben Mimoun, M.S. (2017), "Mobile payments adoption by US consumers: an extended TAM", *International Journal of Retail and Distribution Management*, Vol. 45, pp. 626-640.
- [4]. Birruntha S. (2020) "The best e-wallets in Malaysia, as ranked by users". The Malaysian Reserve. Retrieved from: <https://themalaysianreserve.com/2019/10/29/the-best-e-wallets-in-malaysia-as-ranked-by-users/>
- [5]. Cho, J. (2016), "The impact of post-adoption beliefs on the continued use of health apps", *International Journal of Medical Informatics*, Vol. 87, pp. 75-83
- [6]. Davis, F. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319-340.
- [7]. Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*, Addison-Wesley, Reading, MA.
- [8]. Fung, H. H., Carstensen, L. L., & Lutz, A. M. (1999). Influence of time on social preferences: Implications for life-span development. *Psychology and aging*, 14(4), 595.
- [9]. Ghazali, E.M., Mutum, D.S., Chong, J.H. and Nguyen, B. (2018), "Do consumers want mobile commerce? A closer look at M-shopping and technology adoption in Malaysia", *Asia Pacific Journal of Marketing and Logistics*, Vol. 30 No. 4, pp. 1064-1086.
- [10]. Humbani, M. and Wiese, M. (2019), "An integrated framework for the adoption and continuance intention to use mobile payment apps", *International Journal of Bank Marketing*, Vol. 37 No. 2, pp. 646-664.
- [11]. Lee, J. and Kim, H. (2020), "Determinants of adoption and continuance intentions toward Internet-only banks", *International Journal of Bank Marketing*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/IJBM-07-2019-0269>
- [12]. John W. Creswell and J. David Creswell (2018). *Research design: Qualitative, Quantitative, and Mixed Methods Approaches*. 5th edition. SAGE
- [13]. Khayer, A. and Bao, Y. (2019), "The continuance usage intention of Alipay: Integrating context-awareness and technology continuance theory (TCT)", *The Bottom Line*, Vol. 32 No. 3, pp. 211-229.
- [14]. Mark N.K. Saunders, Philip Lewis, and Adrian Thornhill (2016). *Research Methods for Business Students*. 7th edition. Pearson
- [15]. Namahoot, K. and Laohavichien, T. (2018), "Assessing the intentions to use internet banking: The role of perceived risk and trust as mediating factors", *International Journal of Bank Marketing*, Vol. 36 No. 2, pp. 256-276.
- [16]. Oertzen, A. and Odekerken-Schroder, G. (2019), "Achieving continued usage in online banking: a post-adoption study", *International Journal of Bank Marketing*, Vol. 37 No. 6, pp. 1394-1418
- [17]. Oliveira, T., Thomas, M., Baptista, G. and Campos, F. (2016), "Mobile payment: understanding the determinants of customer adoption and intention to recommend the technology", *Computers in Human Behavior*, Vol. 61, pp. 404-414.
- [18]. Slade, E., Williams, M., Dwivedi, Y. and Piercy, N. (2015), "Exploring consumer adoption of proximity mobile payments", *Journal of Strategic Marketing*, Vol. 23 No. 3, pp. 209-223.
- [19]. Setterstrom, A.J., Pearson, J.M. and Orwig, R.A. (2013), "Web-enabled wireless technology: an exploratory study of adoption and continued use intentions", *Behaviour & Information Technology*, Vol. 32 No. 11, pp. 1139-1154.

Appendix: Survey

Perceived ease of use (Anouze and Alamro, 2019)

- PEU1. Using this mobile payment app is easy for me.
PEU2. I find my interaction with this mobile payment app clear and understandable.
PEU3. It is easy for me to become skillful in the use of this mobile payment app.
PEU4. Overall, I find the use of this mobile payment app easy.

Perceived usefulness (Anouze and Alamro, 2019)

- PUN1. Using this mobile payment app would enable me to accomplish my tasks more quickly.
PUN2. Using this mobile payment app would make it easier for me to carry out my tasks.
PUN3. I would find this mobile payment app useful.
PUN4. Overall, I would find using this mobile payment app to be advantageous.

Perceived security (Anouze and Alamro, 2019)

- PSE1. I would feel secure sending sensitive information across this mobile payment app.
PSE2. This mobile payment app is a secure means through which to send sensitive information.
PSE3. I would feel totally safe providing sensitive information about myself over this mobile payment app.
PSE4. Overall, this mobile payment app is a safe place to transmit sensitive information.

Word of Mouth (Oertzen and Odekerken, 2019)

- WDM1. I mention this mobile payment app to others quite frequently.

WDM2. I have told more people about this mobile payment app than I have told about most other mobile payment apps.

WDM3. I seldom miss an opportunity to tell others about this mobile payment app.

WDM4. When I tell others about this mobile payment app, I tend to talk about this mobile payment app in great detail.

WDM5. I have only good things to say about this mobile payment app.

WDM6. I am proud to tell others that I use this mobile payment app.

Intention to use (Anouze and Alamro, 2019)

INTU1. I intend to continue using this mobile payment app in the future.

INTU2. I will recommend others to use this mobile payment app.

INTU3. I would always prefer this mobile payment app.

INTU4. I am satisfied with advantages that this mobile payment app brings.

About Authors

First author: Guan Yuchen, a PhD Candidate in SEGi University

Second author: Qin Ronghua, BBM student in SEGi University

Third author: Dr. Yong See Chen, Postgraduate Lecturer in Faculty of GSB, Graduate School of Business, SEGi University,

Guan Yuchen, et. al. "Determinants of Intention to Use the Mobile Payment Apps among Malaysian Users." *IOSR Journal of Business and Management (IOSR-JBM)*, 22(5), 2020, pp. 64-70.