Examining Factors Influencing Intention to Use E-Wallet in Indonesia:
A Conceptual Framework

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ABSTRACT

Nowadays e-wallet has become trend in Indonesia, especially since Covid-19. This is because e-wallet is fit with the Covid-19 protocol. The purpose of this research is to analyze the impact of perceived ease of use, perceived usefulness and compatibility towards intention to use e-wallet. Technology Acceptance Model (TAM) will be used to underpin the research framework. Data for this study will be collected among university students who live in Indonesia and are familiar with e-wallet using online survey-based research. The measurement for this study will be adapted from previous scholars and confirm its reliability and validity through pretesting process. Data will be analyze using SPSS and SmartPLS. The output of this study will contribute to the development of TAM in the context of intention to use e-wallet among university students in Indonesia. Moreover, the result also will give insight on the consumer behaviors related to e-wallet.

Keywords: E-Wallet, Technology Acceptance Model, Compatibility, University Students, SmartPLS

1. INTRODUCTION

Technology developments have given birth to new companies in various industries, such as the financial industry [1]. This development has resulted in old companies need to be willing to adapt technology and start from the same beginning as startup companies [2]. This old companies and startups are competing to create innovations in their products [3]. One of them is financial technology (fintech). Fintech is the application of technology in the financial sector that produces new business models. Later, this business model can make it easier for people to make transactions from anywhere and anytime [4] especially during Covid-19 [5]

Since the Covid-19 pandemic happen in Indonesia, the Indonesia government began implementing a policy of restricting mobility for the citizen [6]. The policy results in limitation of outside activities and changes in people's lifestyles [7]. One of the changes could be seen from the shift in payment method from cash to cashless payment as the payment method that is most often used by the citizen during the pandemic [8]. Based on a report by [4] about the circulation of electronic money in Indonesia during the Covid-19, it could be said that online transactions using electronic money have increased from 359,670,019 (July 2020) to 495,280,424 (July 2021). This increase indicates that the Indonesian people are moving faster towards a cashless society [9]

"A cashless society is a transaction system created using electronic technology to facilitate non-cash payments and is intended for a community" [10]. In order to support a cashless society, the Indonesia government has implement various strategies that direct people to switch from cash to cashless transactions, one example is the payment method on MRT (Indonesia public transportation) using a QR code that could be

scan via e-wallet [11]. The example shows that e-wallet is one of cashless transaction form that is currently in great demand in Indonesia.

Two surveys discuss about e-wallet, namely a survey conducted by Ipsos (before Covid-19) and Jakpat (after Covid-19). Before Covid-19 about 40% of users often use e-wallet services for online transportation payments and 32% of users use e-wallet to make purchases of food and drinks for online delivery [12]. Meanwhile, three main reasons that encourage users to use e-wallet before Covid-19, namely about 68% choose convenience, about 23% choose promos, and about 9% choose security. Convenience as the main reason to use e-wallet before the Covid-19 include things such as no need to carry cash, no need to have cash ready, no need to carry a debit card, and no need to worry about change [12]. Hence, based on the explanation of the reasons for using e-wallet before Covid-19, it could be concluded that users use e-wallet because of the usefulness aspect.

However, during the Covid-19, the level of e-wallet usage has increased by around 44% which indicates an intention to use e-wallet [13]. The increase was accompanied by a shift in the e-wallet services used. According to a survey by [14], users often use e-wallet for top-up and internet packages around 76%. Thus, there is a distinct in the services that are often used before and during the Covid-19. If before the pandemic most users used e-wallet for online transportation, now during the Covid-19 users are using e-wallet often for top up and internet packages. This shows that the use of services in e-wallet is adjusted to the conditions or lifestyle of users (compatibility). The reasons for using e-wallet during the Covid-19 have also change. If before the pandemic users used e-wallet for convenience (*usefulness*) reasons, now during the pandemic about 78% users state that they use e-wallet because it is easy to use (ease of use).

2. PROBLEM STATEMENT

The explanation above is in line with the research opinion of [15] which states that when consumers find it easy to use m-payment, their chances of using m-payment will be greater. [16] states banks and online shops that focus on developing and providing efficient and effective payment systems will be able to attract bigger user's interest. However, other studies [17], [18], and [19] state that the perceived ease of use did not affect the intention to use. This shows that there are distinctive of opinion in previous studies regarding perceived ease of use.

Positive evaluation toward the ability of an e-wallet in improving work performance (usefulness) can be associated with the desire to use (intention to use) e-wallet [18]. This statement also supported by research

from [15], [20], [16], [19]. So it can be said that there is no difference in opinions regarding perceived usefulness.

The good compatibility will provide meaningful experience and value for consumers so that it can generate positive interest in mobile wallets [19]. According to [21] compatibility is the strongest predictor of interest behavior. However, according to [15], the effect of compatibility on intention could only occur if it is mediated by perceived usefulness and perceived ease of use. This shows that there are differences of opinion regarding the effect of compatibility toward intention to use.

Thus, this study will discuss the effect of compatibility, perceived ease of use, and perceived usefulness on intention to use e-wallet.

3. LITERATURE REVIEW

3.1. E-Wallet

E-wallet is one of electronic payment method. E-wallet can be defined as a type of electronic money that stored in a server not in a chip (like credit/debit card) [17]. User of e-wallet view this payment technology as a repository that allow users to track their *online* transaction through mobile phone [19]. In Indonesia there are several e-wallet that use by Indonesia citizen, namely GoPay, DANA, LinkAja, OVO, and ShopeePay. Those e-wallet show that Indonesia citizen have intrest in using e-wallet.

3.2. Intent to Use

Some previous studies has analyze the intention to use e-wallet [19], [20], [22], [17], [15] with their own framework. Those framework could be an extend or a combination of some exist model, such as Theory Acceptance model (TAM) and Unified Theory Of Acceptance And Use Of Technology (UTAUT). One the model that could be use to analyze the intention to use is the combination between TAM and compatibility.

3.3. Technology Acceptance Model (TAM)

Various kinds of research models can be used to analyze the factors that influence intention to use. One of the research models is the Technology Acceptance Model (TAM). Technology Acceptance Model is a model to explain the phenomenon of new technology adoption. The Technology Acceptance Model has the power to explain substantial variations in usage interest. Even the model can explain the factors and reasons that influence consumer attitudes towards e-wallet [23]. Two components of the Technology Acceptance Model

which is perceived ease of use and perceived usefulness [28].

3.3.1. Perceived Ease of Use

Perceived ease of use can directly affect the intention to use payment technology [15] which one of them is e-wallet. In the results of several previous studies, the effect is positive [24] and significant [16]. Therefore, the easier e-wallet is to use, the more consumers will be interest to use an e-wallet [15]. Thus, it can be concluded that the perceived ease to use has a positive effect on the intention to use an e-wallet.

H_1: *Perceived ease of use has impact toward intention to use*

3.3.2. Perceived Usefulness

Perceived usefulness directly affects intention in using m-payments [15]. Several results from previous studies state that the effect of perceived usefulness toward intention to use is positive [19] and significant [18], [25], [20], [26], [16]. Useful mobile payments will increase consumers' opportunities to use mobile payments [15]. So, the relationship between perceived usefulness and intention to use an e-wallet is positive.

H2: *Perceived usefulness has impact toward intention to use*

3.4. Compatibility

Compatibility has a direct effect on intention to use [27]. The effect of compatibility can be positive [22], and significant [19], toward intention to use [16]. Even compatibility is also considered a major predictor in determining user intention to use an e-wallet [21]. So, it can be concluded that compatibility has a positive relationship with intention to use.

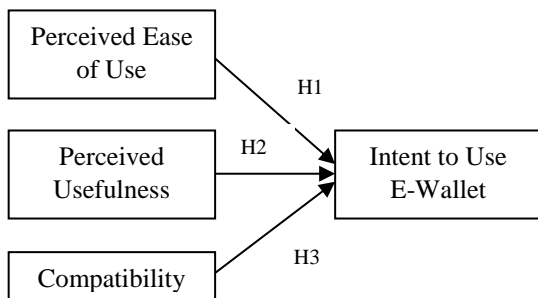H3: *Compatibility has impact toward intention to use.*

Figure 1: Conceptual Research Framework

4. RESEARCH METHODOLOGY

4.1. Research Setting, Population and Sampling

The population for this study is Indonesian university students who are experienced using e-wallet in Indonesia. Meanwhile, the respondents in this study were selected based on the criteria of 1) e-wallet users that lived in Indonesia, 2) college students who use an e-wallet, 3) use e-wallet in pandemic Covid-19. Since the sampling frame is unknown, therefore, this study will use power analysis through G-Power to determine the number of samples. The results of the G-Power calculation are based on three independent variables, the minimum number of samplings for this study is 77 respondents who picked randomly by using purposive sampling technique. The filter question will be included in the questionnaires to ensure the respondents meet the criteria needed for this study. Table 1 reported sampling needed based on G-Power analysis.

4.2. Measurement Design and Pre-Testing

The measurement design in this study is based on several items from Yang et all [16]. Intention to use six item, perceived ease of use six item, perceived usefulness five item and compatibility four item.

The pre-testing for this study will consist of several steps, namely (1) expert review content, (2) expert review for methodology, (3) face validity process, (4) pilot testing and (5) finalizing the items to be included in this study. Expert review content will be done by the Professor from marketing department. Similarly, the review of the methodology will be conducted by the Professor from social science area. Face validity process will be reviewed by the three respondents who has similar characteristics of the inclusion criteria for this study. Once the amendments have been made, a pilot test will be conducted. After the test, there will be elimination and correction of questions or statements that are considered less supportive. The Cronbach alpha, mean and standard deviation for each construct will be reported. Finally, the measurement for this study is ready to be used for actual study.

Table 1. Sample Size Calculated by G* Power

F tests - Linear multiple regression: Fixed model, R^2 increase deviation from zero		
Analysis:	A priori: Compute required sample size	
Input	Effect size f^2	= 0.15
	α err prob	= 0.05
	Power (1-β err prob)	= 0.80
	Number of predictors	= 3
Output	Noncentrality parameter λ	= 11.5500000
	Critical F	= 2.73000187
	Numerator df	= 3
	Denominator df	= 73
	Total sample size	= 77
	Actual power	0.8017655

4.3. Procedure in Data Collection

Data in this study collected by using questionnaire made in Google Form. The questionnaire will be distributed in November 2020. Because of the movement control order during pandemic Covid-19, we need to restrict our face-to-face contact with the respondents. Therefore, the questionnaires will be distributed *online*. The distribution of the questionnaires will be done by personally contacting the respondents who match the criteria and asking for help from the student organization in each university in Indonesia to distribute the questionnaires.

4.3. Ethical and Approval

Ethical form will be obtained from Research Ethics Committee (REC) from Univesiti Teknologi MARA (UiTM) Malaysia. Once the ethic form approved, we will start our data collection.

4.4. Methods of Data Analysis

Data will be input using SPSS. The data cleaning process such as missing data and ourliers issues will be performed using SPSS also. Once the data has been cleaned, the preliminary analysis namely normality and common method variance will be conducted. Normality test will be done using skewness and kurtosis calculator provided by www.webpower.com. The result for mardias value for skewness and kurtosis will be reported. Later, this set of data will be testing for common method variance using full collinearity estimates, whereby the value of VIF will be reported based suggestion by Kock [29]. This data must pass these steps to ensure that it is eligible to perform further analysis using SmarrPLS.

SmartPLS requires two parts of assessment as suggested Hair et. al. [30] namely the assessment of the measurement model to test the reliability and validity of the items. This study consists of reflective model for all constructs. Also loading for each item will be reported. Loading value that reported below than 0.4 will be omitted for further data analysis. Reliabilty value will be presented using composite reliability (CR) value. Moreover, convergence validity will be reported using average variance extracted (AVE) value. AVE value must be above 0.5 for each construct. Finally, the discriminant validity will be reported using HTMT value. All values must be below that $HTMT_{0.85}$ and VIF should be less than 5 as proposed by Kock and Lynn [31].

Finally, to test the hypotheses, we will use the assessment of the structural model. A bootstrap procedure of 5000 steps will be used to perform the analysis. The value of R-squared, f-squared, Q-squared, Beta, standard deviation, t-valus, bias corrected value, t-value and p-value will be reported. The hypotheses will be tested using one-tail test and the acceptance of hypotheses will be determined based on the t-value > 1.645.

5. CONCLUSIONS

This study is expected to give a contribution related to financial technology (fintech), especially e-wallet. Hence in the future this study could become model for other studies regarding e-wallet or mobile payment. As for the benefit could be obtained from this study is an insight that can be useful for the mobile payment companies.

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REFERENCES

[1] [1] J. Frost, L. Gambacorta, Y. Huang, H. S. Shin, and P. Zbinden, "BigTech and the changing structure of financial intermediation," 2019.

[2] "Industry 4.0 Challenges and Solution for The Digital Transformation and Use of Exponential Technologies." .

[3] H. Soeprajitno, "Research Report on Digital Shopping Payment," no. October 2018.

[4] Statistik Bank Indonesia, "Jumlah Uang Elektronik Beredar," *Bank Indones.*, no. April 2009, p. 2019, 2021.

[5] I. Vasenska, P. Dimitrov, B. Koyundzhiyska-Davidkova, V. Krastev, P. Durana, and I. Poulaki, "Financial transactions using fintech during the covid-19 crisis in bulgaria," *Risks*, vol. 9, no. 3, pp. 1–28, 2021, doi: 10.3390/risks9030048.

[6] A. Abidah, H. N. Hidaayatullah, R. M. Simamora, D. Fehabutar, and L. Mutakinati, "No Title," *Impact Covid-19 to Indones. Educ. an Its Relat. to Philos. od "Merdeka Belajar,"* vol. 1, no. 1, pp. 38–49, 2020.

[7] A. Halimatussadiah *et al.*, *Thinking Ahead : Indonesia ' s Agenda on Sustainable Recovery from COVID -19 Pandemic*. 2020.

[8] T. P. Wisniewski, M. Polasik, R. Kotkowski, and A. Moro, "Switching from Cash to Cashless Payments during the COVID-19 Pandemic and Beyond," *SSRN Electron. J.*, no. 337, 2021, doi: 10.2139/ssrn.3794790.

[9] J. Aminata and G. E. Sjarif, "Towards a Cashless Society in Indonesia: the Impact on Economic Growth and Interest Rate," *Indones. J. Econ. Entrep. Innov.*, vol. 1, no. 2, pp. 2721–8287, 2020, doi: 10.31960/ijoeei.v1i2.705.

[10] A. D. Hastomo and M. Aras, "Influence of Cashless Society Socialization toward Trust Transaction Culture in Jakarta, Indonesia," *Humaniora*, vol. 9, no. 1, p. 1, 2018, doi: 10.21512/humaniora.v9i1.4174.

[11] "4 Cara Pembayaran Naik MRT Jakarta dari Uang Elektronik hingga QR Code - News Liputan6.com." .

[12] Ipsos, "The Evolution of The Digital Wallet: Driving The Next Wave of Growth," *Evol. Digit. Wallet Driv. Next Wave Growth*, pp. 1–8, 2020.

[13] "Pengguna Dompet Digital Meningkat Drastis di Masa Pandemi | Republika Online." .

[14] Jakpat, "Indonesia Digital Wallet Trend-1st Semester," *Indones. Digit. Wallet Trend-1st Semester*, 2020.

[15] C. M. Leong, K. L. Tan, C. H. Puah, and S. M. Chong, "Predicting mobile network operators users m-payment intention," *Eur. Bus. Rev.*, vol. 33, no. 1, 2021, doi: 10.1108/EBR-10-2019-0263.

[16] M. Yang, A. Al Mamun, M. Mohiuddin, N. C. Nawi, and N. R. Zainol, "Cashless transactions: A study on intention and adoption of e-wallets," *Sustain.*, vol. 13, no. 2, pp. 1–18, 2021, doi: 10.3390/su13020831.

[17] H. M. Aji, I. Berakon, and M. Md Husin, "COVID-19 and e-wallet usage intention: A multigroup analysis between Indonesia and Malaysia," *Cogent Bus. Manag.*, vol. 7, no. 1, pp. 1–17, 2020, doi: 10.1080/23311975.2020.1804181.

[18] D. Hidayat, C. H. Pangaribuan, O. P. B. Putra, and F. J. Taufiq, "Expanding the technology acceptance model with the inclusion of trust and mobility to assess e-wallet user behavior: Evidence from OVO consumers in Indonesia," *IOP Conf. Ser. Earth Environ. Sci.*, vol. 729, no. 1, pp. 1–9, 2021, doi: 10.1088/1755-1315/729/1/012050.

[19] D. Chawla and H. Joshi, "Consumer attitude and intention to adopt mobile wallet in India – An empirical study," *Int. J. Bank Mark.*, vol. 37, no. 7, pp. 1590–1618, 2019, doi: 10.1108/IJBM-09-2018-0256.

[20] H. M. Aji, I. Berakon, and A. F. Riza, "The effects of subjective norm and knowledge about riba on intention to use e-money in Indonesia," *J. Islam. Mark.*, vol. 12, no. 6, pp. 1180–1196, 2020, doi: 10.1108/JIMA-10-2019-0203.

[21] S. Nordhoff, V. Malmsten, B. Van Arem, P. Liu, and R. Happee, "A structural equation modeling approach for the acceptance of driverless automated shuttles based on constructs from the Unified Theory of Acceptance and Use of Technology and the Diffusion of Innovation Theory," *Transp. Res. Part F Psychol. Behav.*, vol. 78, pp. 58–73, 2021, doi: 10.1016/j.trf.2021.01.001.

[22] D. Chawla and H. Joshi, "The moderating role of gender and age in the adoption of mobile wallet,"

Foresight, vol. 22, no. 4, pp. 483–504, 2020, doi: 10.1108/FS-11-2019-0094.

[23] G. Laksana, "Pengaruh Persepsi Kemanfaatan, Persepsi Kemudahan Penggunaan, Persepsi Resiko Dan Persepsi Kesesuaian Terhadap Minat Menggunakan Mobile Banking (Studi Pada Nasabah Bank Rakyat Indonesia (BRI) Kantor Cabang Rembang, Jawa Tengah)," *J. Adm. Bisnis S1 Univ. Brawijaya*, vol. 26, no. 2, p. 86309, 2015.

[24] A. Tahar, H. A. Riyadh, H. Sofyani, and W. E. Purnomo, "Perceived ease of use, perceived usefulness, perceived security and intention to use e-filing: The role of technology readiness," *J. Asian Financ. Econ. Bus.*, vol. 7, no. 9, pp. 537–547, 2020, doi: 10.13106/JAFEB.2020.VOL7.NO9.537.

[25] P. M. Tun, "An Investigation of Factors Influencing Intention to Use Mobile Wallets of Mobile Financial Services Providers in Myanmar," *Asian J. Technol. Manag.*, vol. 13, no. 2, pp. 129–144, 2020, doi: 10.12695/ajtm.2020.13.2.3.

[26] L. Chen and A. K. Aklikokou, "Determinants of E-government Adoption: Testing the Mediating Effects of Perceived Usefulness and Perceived Ease of Use," *Int. J. Public Adm.*, vol. 43, no. 10, pp. 850–865, 2020, doi: 10.1080/01900692.2019.1660989.

[27] S. Jayasingh and U. Eze, "The Role of Moderating Factors in Mobile Coupon Adoption: An Extended TAM Perspective," *Commun. IBIMA*, vol. 2010, pp. 1–13, 2010, doi: 10.5171/2010.985461.

[28] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Q. Manag. Inf. Syst.*, vol. 13, no. 3, pp. 319–339, 1989, doi: 10.2307/249008.

[29] N. Kock, "Common method bias in PLS-SEM: A full collinearity assessment approach," *Int. J. e-Collaboration*, vol. 11, no. 4, pp. 1–10, 2015, doi: 10.4018/ijec.2015100101.

[30] J. F. Hair, M. Sarstedt, L. Hopkins, and V. G. Kuppelwieser, "Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research," *Eur. Bus. Rev.*, vol. 26, no. 2, pp. 106–121, 2014, doi: 10.1108/EBR-10-2013-0128.

[31] N. Kock and G. S. Lynn, "Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations," *J. Assoc. Inf. Syst. Some*, vol. 13, no. 7, pp. 546–580, 2012, doi: 10.1016/s0193-953x(18)30902-x.