Determinants of E-Wallet Adoption: Perceived Ease Of Use, Trust, and Perceived Usefulness

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ABSTRACT

This study aims to examine the effect of perceived ease of use; trust and the perceived usefulness of the adoption of e-wallets among e-wallets users in Jabodetabek. The population of this study is the Jabodetabek people with a sample of 200 respondents who use e-wallets aged 18 to 40 years. This type of research is quantitative research with a survey method through questionnaires distributed online. The analytical technique used to process the collected data is the validity test and reliability test with SPSS software; model fit test and hypothesis testing with AMOS 26 software. Through these analytical techniques, the results obtained that all indicators are valid and reliable, and the variables perceived ease of use and perceived usefulness have a significant effect on the adoption of e-wallets, while the trust variable has no significant effect on the adoption of e-wallets.

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INTRODUCTION

Technological developments in this modern era provide various changes, one of which is a technological innovation in the financial sector through the application of financial technology in terms of transactions. Currently, many people have switched from cash transactions to non-cash and many even carry out cashless or online transactions which are commonly referred to as cashless.

The innovation of cashless payment transactions in Indonesia continues to develop with the existence and use of digital wallets. According to Bagas (2021) citing Neurosensum, the pandemic in Indonesia has broken the number of digital wallet users over the past year. Data from Neurosensum noted that the growth of digital wallet consumers reached 44 percent. The existence of a pandemic in Indonesia makes people have to obey the rules to reduce physical contact and keep their distance from each other, so the existence of a digital wallet can support the community in implementing these rules.

The report on the results of a survey conducted by Boku through articles written by Anestia (2021) on the behavior of using digital wallets in Indonesia in 2021, revealed that the total digital wallet users in Indonesia were recorded at 63.6 million or 25.6 percent of the total population. The report states that five digital wallet providers compete fiercely, including OVO which outperforms digital wallet usage in Indonesia with 38.2 percent market share, followed by ShopeePay (15.6 percent), LinkAja (13,9 percent), Gopay (13,2 percent), DANA (12,2 percent), and others (6,9 percent).

In the Ipsos survey (2020) report on the evolution of digital wallets in Indonesia, which in the report discusses the number of users with different age levels, the results show that the number of users in the 18-24 year age range is the lowest compared to the 25-29 age range. year; 30-34 years old; and 35-40 years which is the third highest. Meanwhile, the results of a survey by PT Kadence International (2021) stated that the number of digital wallet users with an age range of 18-24 years was the highest compared to the age range of 25-29 years, 30-34 years, and 35-39 years, which were the three lowest percentages.

The growth rate of digital wallet users is influenced by various factors, one of which is the need for online payments. Various kinds of online payment services from digital wallets make it easy for users to make cashless transactions, such as purchasing goods or services, paying bills, sending money, paying at offline merchants, and storing money safely. In addition, digital wallets provide service innovations for users, which can make investments. From the various conveniences and various service features, it is an option for users to adopt the use of digital wallet service features.

Adoption is a person's decision to optimally utilize an innovation or technology.

Most of the previous studies examining the adoption of digital wallets are influenced by perceived usefulness, perceived ease of use, social influence, and performance expectancy (Xian et al., 2018; Widodo et al., 2019; Teoh

Teng Tenk et al., 2020; dan Bee & Ying, 2021).

Various models have been used in previous studies to explain consumer acceptance of the adoption of new technology. One of them is the Technology Acceptance Model (TAM) theory which has been widely used in previous research (Teoh Teng Tenk et al., 2020; Lu & Lu, 2020; T. Widodo & Putri, 2021; dan Hidayat et al., 2021). TAM examines two variables that influence consumer acceptance in adopting technology, namely perceived ease of use and perceived usefulness. These two variables are the main factors that influence consumer acceptance of the use of technology. Therefore, in this study, the two main variables were used and the researcher added another variable, namely trust.

LITERATURE REVIEW
Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is one of the models used to analyze the factors that affect the acceptance of information technology. The TAM model consists of two main variables which are explained by Davis (1989) in research on perceived usefulness and perceived ease of use which are theorized to be fundamental determinants of the use of a system, as well as generating new insights about perceived usefulness and perceived ease of use which act as determinants of user acceptance, and correlates with user acceptance.

Adoption of E-wallet

Adoption is a decision to take full advantage of innovation as the best available course of action (Roger in Sahin, 2006). This explanation is in line with the notion of adoption according to Kumar et al. (2020), Adoption is a kind of consideration about making optimal use of technical development. The process of adoption is the technical use of a new idea or modern tool (Annur, 2018).

It can be concluded that the definition of adoption of an e-wallet is a person's decision to optimally utilize the innovation of a digital wallet according to their needs.

Perceived Ease of Use

According to Davis (1989), perceived ease of use refers to the extent to which a person believes that using a particular system will be free from effort. Nangin et al., (2020) describe perceived ease of use in the use of technology as a measure where a person believes that technological devices can be easily understood and used. Ramli et al. (2017) tested the perceived ease of use factor on technology adoption and concluded that perceived ease of use is described as user confidence to adopt technology that is less complicated and easier to use, and easy to understand.

It can be concluded that perceived ease of use is a measure where someone is sure to use technology, because the technology is easy to understand and easy to use to help their needs.

Trust

Trust is a confident attitude towards the risks of online transactions or online-related matters with the hope

that the user's vulnerable items will not be misused (Corritore et al., 2003). Trust is an important element in managing a relationship. With trust, a person will feel confident to rely on others. In this case, digital wallet service providers must be smart in maintaining the trust that has been built, so that they can attract the interest of potential users and retain regular users (Nuryasman & Warningsih, 2021). George & Sunny (2021) explain the definition of trust is the extent to which consumers identify a mobile wallet application provider to be trustworthy regarding the security, reputation, and regulatory support intended by them.

It can be concluded that the notion of trust is consumer confidence in using and relying on technology with the confidence that user data is safe, user privacy is maintained, and user interests are well served.

Perceived Usefulness

Through his research, Davis (1989) defines that perceived usefulness as the extent to which a person believes that using a particular system will improve his job performance. In addition, he also concludes that perceived usefulness is a strong correlation to user acceptance and should not be ignored by those who are trying to design or implement a successful system. Another study conducted by Dahlberg et al. (2003) describes measures of perceived usefulness including, increased performance, increased productivity, effectiveness, overall usability, time-saving, and increased work performance. In the research of Nuryasman & Warningsih (2021)

perceived usefulness can be explained as an assumption about the added value that will be accepted. If financial technology can fulfill the perceived benefits of a person such as the realization of effectiveness and efficiency, then this will certainly create a positive impression on the service, so those usage intentions will also increase.

It can be concluded that perceived usefulness is a measure of a person's belief in using a certain technology that can provide benefits in terms of increasing work performance and saving time, as well as the realization of effectiveness and efficiency.

Hypothesis

Based on the theoretical basis, the proposed hypothesis is:

H1 – Trust will affect the perceived ease of use

H2 – Perceived ease of use will affect perceived usefulness

H3 – Trust will affect perceived usefulness

H4 – Perceived ease of use will affect the adoption of e-wallet

H5 – Trust will affect the adoption of e-wallet

H6 – Perceived usefulness will affect the adoption of e-wallet

METHODOLOGY

This research uses quantitative research with a survey method. The determination of the sample in this study is based on the purposive sampling technique to obtain a sample with criteria that represent the population. Menurut Hair et al. (2019) in determining the sample size, a suitable sample size of between 100 and 200

respondents is recommended. And also depending on the number of indicators, the guideline is the number of indicators that measure the variable multiplied by five to multiplied by 10. So based on these guidelines, the sample criteria in this study were 200 digital wallet users who live in Greater Jakarta aged 18 to 40 years.

Data collection from 200 respondents was carried out through a survey through a questionnaire using a google form which was distributed online. The questionnaire contains questions from four research variables that are suitable to obtain information from the problems in the research that discusses the factors that influence users to adopt digital wallets and find out what service adoption they choose.

After the data needed in this study are collected, data analysis can be carried out. Analysis of the data used, namely:

1. Validity test and reliability test
   The validity test uses Exploratory Factor Analysis (EFA) factor analysis to see valid indicators and to determine the accuracy of the contents of the instrument that defines a variable. While the reliability test uses Cronbach's Alpha technique which states a questionnaire is reliable if it has an alpha value above 0.70. A reliability value of fewer than 0.60 means it is not good, while 0.70 means it is acceptable and 0.80 means it can be said to be good. Validity tests and reliability tests were carried out using SPSS software.

2. Model fit test
   In testing with the Confirmatory Factor Analysis (CFA) technique, the goodness of fit will be tested by taking into account the criteria of the goodness of fit index, namely the value of the Chi-Square index is expected to be small; the probability value is greater than 0.05; RMSEA value is less than 0.08; GFI value is greater than 0.90; AGFI value is greater than 0.90; CMIN/DF value is less than 2.00; TLI value is greater than 0.95 and the CFI value is greater than 0.95.

3. Hypothesis test
   In conducting hypothesis testing, researchers used AMOS 26 software to process and analyze research data using the Structural Equation Modeling (SEM) technique, which is a statistical analysis tool that is a combination of factor analysis and regression analysis.

4. Test the direct and indirect effect
   This test was conducted to determine the direct and indirect effect of each variable based on the six proposed hypotheses. Before carrying out this test, the model suitability test and hypothesis testing were carried out.

RESULTS AND DISCUSSION
1. Respondent Profile
The number of respondents in this study was 200 respondents consisting of domicile, age, gender, and last education level. The explanation of the results of the data processing of respondents' characteristics, namely respondents who use the most digital wallets are domiciled in Jakarta with a total of 95 people (47.5%); then domicile Tangerang and Bekasi with the same number, as many as 32 people (16%); domicile in Depok amounted to 23 people (11.5%) and domicile in Bogor amounted to 18 people (9%).

Based on age, most respondents were aged 18 to 23 years with a total of 152 people (76%); then the age of 24 to 29 years amounted to 21 people (10.5%); age 30 to 35 years totaled 17 people (8.5%) and aged 36 to 40 years amounted to 10 people (5%). Based on gender, the number of respondents was dominated by women with a total of 154 people (77%), while the number of male respondents amounted to 46 people (23%). The last education level of most of the respondents was SMA/SMK totaling 141 people (70.5%); then there are 43 bachelors (21.5%); Diplomas totaled 15 people (7.5%) and Masters 1 person (0.5%).

Table 1. Respondent Profile

Variables	Frequency	%
Domicile		
Jakarta	95	47.5
Bogor	18	9.0
Depok	23	11.5
Tangerang	32	16.0
Bekasi	32	16.0
Age		
18-23 years old	152	76.0
24-29 years old	21	10.5
30-35 years old	17	8.5
36-40 years old	10	5.0
Gender		
Man	46	23.0
Woman	154	77.0
Last education level		
SMA/SMK	141	70.5
Diploma	15	7.5
Bachelor	43	21.5
Magister	1	0.5

Of the 200 respondents, many use more than one digital wallet. It can be seen that Shopee Pay is the most widely used digital wallet with 173 respondents (86.5%); followed by Gopay digital wallet with 150 respondents (75%); OVO digital wallet is used by 127 people (63.5%); DANA digital wallet was used by 123 people (61.5%) and the LinkAja digital wallet is the least used by respondents, amounting to 34 people (17%).

Table 2. Frequency of E-Wallet Used

E-Wallet	Frequency	Percent
OVO	127	63,5
Shopee Pay	173	86,5
Gopay	150	75,0
DANA	123	61,5
LinkAja	34	17,0

2. Result
Validity Test and Reliability Test

The validity test has the provision that the factor loading value must be greater than 0.50, which means the indicator can be said to be valid. While the reliability test states that a questionnaire is reliable if the Cronbach's Alpha value is greater than 0.60.

In the description below, the results of the validity test of all indicators are valid and the results of the reliability test of each variable are reliable.

Table 3. Results of Validity Test and Reliability Test

Variables	Indicator	*Factor Loading*	Description
Perceived Ease of Use (X1)	PEU1	0,931	Valid
	PEU3	0,926	Valid
	PEU2	0,920	Valid

	PEU6	0,909	Valid	**Cronbach's Alpha**		**0,946**	**Reliable**
	PEU7	0,873	Valid		Adpt7	0,838	Valid
	PEU4	0,872	Valid		Adpt5	0,828	Valid
	PEU5	0,848	Valid		Adpt3	0,803	Valid
Cronbach's Alpha		**0.959**	**Reliable**	Adoption (Y)	Adpt4	0,781	Valid
	T2	0,908	Valid		Adpt2	0,774	Valid
	T6	0,904	Valid		Adpt1	0,773	Valid
	T5	0,893	Valid		Adpt6	0,686	Valid
Trust (X2)	T3	0,887	Valid	**Cronbach's Alpha**		**0,890**	**Reliable**
	T7	0,864	Valid				
	T1	0,836	Valid				
	T4	0,814	Valid				
Cronbach's Alpha		**0,945**	**Reliable**				
	PU2	0,930	Valid				
	PU4	0,910	Valid				
Perceived	PU5	0,902	Valid				
Usefulness	PU6	0,887	Valid				
(Z)	PU3	0,863	Valid				
	PU1	0,854	Valid				
	PU7	0,758	Valid				

Model Fit Test

Based on data processing using AMOS 26, the fit results of all goodness of fit models are obtained, namely Chi-Square 57.442 has a small value; Probability value 0.165>0.05; RMSEA value 0.031<0.08; GFI value 0.955<0.90; AGFI value 0.928>0.90; CMIN/DF value 1.197<2.00; TLI value 0.994>0.95 and CFI value 0.996>0.95.
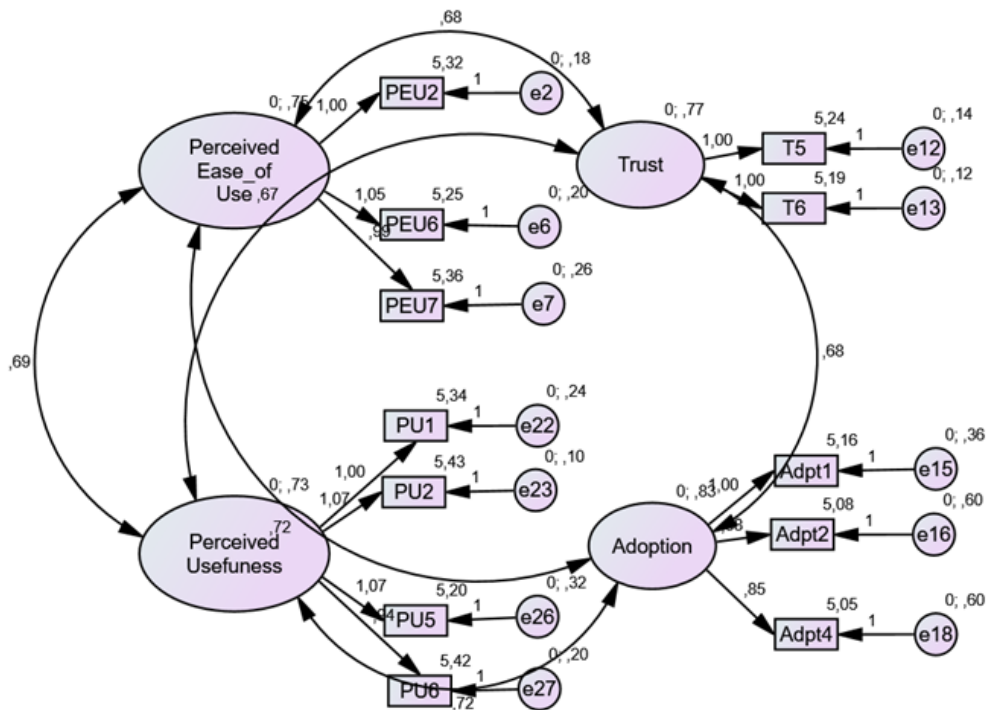

Figure 1. Structural Fit Model

Table 4. Model Fit Test Results

The Goodness of fit indices	Cut-off value	Value on research	Description
Chi-Square	Expected small	57,442	Fit
Probability	≥ 0,05	0,165	Fit
RMSEA	≤ 0,08	0,031	Fit
GFI	≥ 0,90	0,955	Fit
AGFI	≥ 0,90	0,928	Fit
CMIN/DF	≤ 2,00	1,197	Fit
TLI	≥ 0,95	0,994	Fit
CFI	≥ 0,95	0,996	Fit

Hypothesis Test

Based on hypothesis testing, the results obtained, namely from the six indicators used in this study, five indicators were accepted and an indicator was rejected. Accepting or rejecting an indicator depends on the C.R. (critical ratio) or commonly called T-Value, if the results of the structural equation for each indicator have a C.R. greater than 1.96, then the indicator has a positive and significant effect. On the other hand, if the C.R. is smaller than 1.96, then the indicator has no positive and significant or negative effect. And also the results of hypothesis testing must have a P-Value smaller than 0.05 so that the hypothesis can be accepted and vice versa, if the P-Value is greater than 0.05, then the hypothesis is rejected.
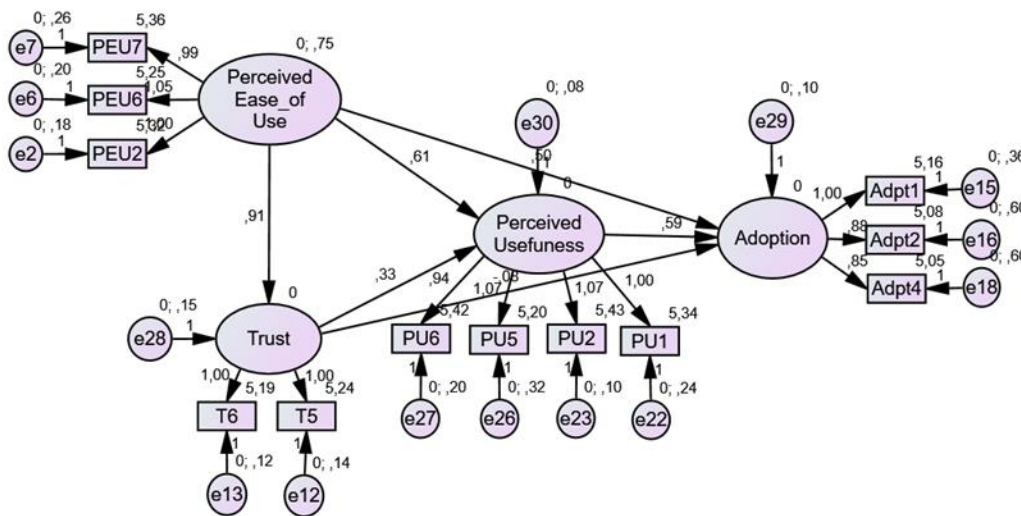

Figure 2. Hypothesis Test Results

Table 5. Hypothesis Test Results

Hypothesis	Dependent variable		Independent variable	Estimates	S.E.	C.R.	P	Results
H1	Trust	<---	Perceived Ease of Use	0,909	0,055	16,444	***	Accepted

H2	*Perceived Usefulness*	<---	*Perceived Ease of Use*	0,613	0,107	5,719	***	Accepted
H3	*Perceived Usefulness*	<---	*Trust*	0,334	0,102	3,265	0,001	Accepted
H4	*Adoption of E-Wallet*	<---	*Perceived Ease of Use*	0,495	0,199	2,488	0,013	Accepted
H5	*Adoption of E-Wallet*	<---	*Trust*	-0,079	0,151	-,521	0,602	Rejected
H6	*Adoption of E-Wallet*	<---	*Perceived Usefulness*	0,592	0,197	3,000	0,003	Accepted

CONCLUSION

Based on the research results obtained in the form of studies in theoretical form, data analysis and descriptions of research results on digital wallet users in Jabodetabek related to the adoption of digital wallet use. These results provide evidence for the proposed hypothesis, are:

1. Trust has a significant effect on perceived ease of use
2. Perceived ease of use has a significant effect on perceived usefulness
3. Trust has a significant effect on perceived usefulness
4. Perceived ease of use has a significant effect on the adoption of e-wallet
5. Trust has no significant effect on the adoption of e-wallet
6. Perceived usefulness has a significant effect on the adoption of e-wallet

During the research, there were some limitations that the researcher found. Several factors become limitations in this study, namely that there are still few journals discussing digital wallet adoption, especially journals that discuss the meaning of digital wallet adoption so that research that can be used as a reference is very limited; researchers have limitations in collecting respondents with an age range of 36 to 40 years so that respondents with that age are the fewest; and the independent variables in this study are quite common and are often used as independent variables.

REFERENCES

Anestia, C. (2021, July). *Laporan boku: ovo pimpin pangsa pasar "mobile wallet" di Indonesia*. https://dailysocial.id/post/laporan-boku-ovo-pimpin-pangsa-pasar-mobile-wallet-di-indonesia

Annur, A. M. (2018). Difusi dan adopsi inovasi penanggulangan kemiskinan (studi difusi dan adopsi inovasi dalam layanan "mbela wong cilik" unit pelayanan terpadu penanggulangan kemiskinan (uptpk) di Kabupaten Sragen. *Journal of Rural and Development*, *4*(1).

Bagas, F. (2021). *Riset: Konsumen dompet digital di Indonesia naik, terbanyak dipakai apa?* https://nextren.grid.id/read/012582036/riset-konsumen-dompet-digital-di-indonesia-naik-terbanyak-dipakai-apa?page=all

Bee, T. S., & Ying, K. Y. (2021). An examination of determinants for e-wallet adoption in Malaysia: a combined approach. *F1000Research*, *10*(1155), 1155.

Corritore, C. L., Kracher, B., & Wiedenbeck, S. (2003). On-line trust: concepts, evolving themes, a model. *International Journal of Human-Computer Studies*, *58*(6), 737–758.

Dahlberg, T., Mallat, N., & Öörni, A. (2003). Trust enhanced technology acceptance model consumer acceptance of mobile payment solutions: Tentative evidence. *Stockholm Mobility Roundtable*, *22*(1), 145.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319–340.

George, A., & Sunny, P. (2021). Developing a research model for mobile wallet adoption and usage. *IIM Kozhikode Society & Management Review*, *10*(1), 82–98.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Eight edition multivariate data analysis* (Eight). Annabel Ainscow.

Hidayat, D., Pangaribuan, C. H., Putra, O. P. B., & Taufiq, F. J. (2021). 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 Conference Series: Earth and Environmental Science*, *729*(1), 12050.

Kumar, A., Dhingra, S., Batra, V., & Purohit, H. (2020). A framework of mobile banking adoption in India. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(2), 40.

Lu, X., & Lu, H. (2020). Understanding chinese millennials' adoption intention towards third-party mobile payment. *Information Resources Management Journal (IRMJ)*, *33*(2), 40–63.

Nangin, M. A., Barus, I. R. G., & Wahyoedi, S. (2020). The effects of perceived ease of use, security, and promotion on trust and its implications on fintech adoption. *Journal of Consumer Sciences*, *5*(2), 124–138.

Nuryasman, M. N., & Warningsih, S. (2021). Determining factors of digital wallet usage. *Jurnal Manajemen*, *25*(2), 271–289.

Ramli, N. A., Abdullah, C. S., & Nawi, M. N. M. (2017). Empirical study of the perceived ease of use and relative advantage on load-bearing masonry (LBM) technology adoption. *AIP Conference Proceedings*, *1903*(1), 30006.

Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *Turkish Online Journal of Educational Technology-TOJET*, *5*(2), 14–23.

Teoh Teng Tenk, M., Yew, H. C., & Heang, L. T. (2020). E-wallet adoption: A case in Malaysia. *International Journal of Research In Commerce and Management Studies (ISSN: 2582-2292)*, *2*(2), 216–233.

Widodo, M., Irawan, M. I., & Sukmono, R. A. (2019). Extending UTAUT2 to explore digital wallet adoption in Indonesia. *2019 International Conference on Information and Communications Technology (ICOIACT)*, 878–883.

Widodo, T., & Putri, S. F. (2021). Analisis minat penggunaan dompet digital linkaja dengan pendekatan technology acceptance model (tam) di Bandung. In *Jurnal Manajemen dan Organisasi* (Vol. 12, Issue 2, p. 134). Institut Pertanian Bogor. https://doi.org/10.29244/jmo.v12i2.34462

Xian, C. Y., Yien, K. S., Ai, L. Von, Yi, L. S., & Ping, O. C. (2018). Moving into cashless Society: Factors affecting adoption of e-wallet. *Bachelor of Business Administration (Hons) Banking and Finance Thesis. Universiti Tunku Abdul Rahman, Petaling Jaya, Selangor*.