THE EFFECT OF CONSUMER TRUST AND PERCEIVED RISK ON E-WALLET ADOPTION: CONSIDERATION FOR TECHNOLOGY STARTUP ENTREPRENEURS

Melisa Krisnawati, Jessica Wienadi, Trianggoro Wiradinata
School of Information Technology, Universitas Ciputra Surabaya,
Surabaya, Indonesia

Abstract: The use of electronic wallet (e-wallet) has been increasingly popular due to the growth of electronic commerce because e-wallet offers practicality and secure way of paying. However, data shows that payment by bank transfers are still the most popular payment method compared to e-wallet. This study aims to analyze the effect of perceived usefulness, ease of use, consumer trust, and perceived risk towards the adoption of various kinds of e-wallet in Indonesia. The grounding theory of this study is using the technology acceptance model (TAM) which is currently still very relevant in measuring antecedents toward technology adoption. This study collects data from 128 respondents using a self-administered questionnaire using purposive (judgmental) sampling. Among data collected there were 3 responds detected as outliers, hence removed. Multiple regression analysis was then performed using python programming language to determine significant factors. The finding of this study shows all antecedents are significantly affecting intention to adopt e-wallet payment with perceived usefulness as the dominant factor. The finding is expected to inspire e-wallet developers, integrators, and digital entrepreneurs to pay more attention towards the perceived usefulness factor.

Keywords: technology acceptance model, consumer trust, perceived risk, e-wallet, entrepreneur

Introduction

Technology advancement nowadays offers convenience for consumers and businessmen in doing the payment. Payments are promised to be done electronically in a secure environment. In this study, electronic payment refers to online transactions conducted over the internet. Electronic payments can also made without using printed media or paper receipts. Popular electronic payment systems consist of bank transfers, online credit cards, online debit cards, and balance systems stored on cloud-based servers referred to as electronic wallets (e-wallet). The e-wallet is an online system in which users can place money. As convenience demanded more and more by consumers, e-wallet offers additional services such as the ability to connect with credit card on the application that is already installed to be used for online transactions and online payment tools (Lee, 2017).

According to a 2018 McKinsey report, e-wallet provides advantages as financial automation and an emerging market business opportunity for providers. Many individuals and small businesses in developing countries are currently unable to participate in the formal financial system. Around two billion individuals and 200 million small businesses in developing countries now do not have proper credit for various

*Corresponding Author.
e-mail: krisnawatimelisa@gmail.com

reasons. Transactions are carried out exclusively with cash. Sometimes, there is no secure mechanism for storing and investing their money and relying on informal lenders and private networks to obtain them. Data from katadata shows the number of e-wallet users in Indonesia is less than 25% of Indonesian population (Annur, 2021). The successful adoption of e-wallet in financial automation requires a strategy that can reach individuals and small businesses in order to significantly improve their financial lives (Osafo-Kwaako et al., 2018).

TAM is a model adopted from the theory of reasoned action (TRA), which Martin Fishbein and Ajzen first introduced in 1980. TAM's main goal is to give a reference for analyzing external influences in the form of factors trust, intention, and user goals. Two dominant factors that affect a person's acceptance of information technology are the user's perception of the benefits that users feel when using the technology (perceived usefulness or PU) and the user's perception of the convenience of using information technology (perceived ease of use or PEOU). The TAM model developed from psychological theory, explains that the behaviour of information technology users is based on trust (belief), attitude, intention and user behaviour relationship. This model explains the main factors of user behaviour toward information technology acceptance (Davis, 1989; Venkatesh & Bala, 2008).

Besides those two main factors, perceived risk and customer trust variables are also added, which can affect the acceptance of information technology (intention to adopt or ITA). Online shopping is inherent where consumers are exposed to some level of risk. Consumers will be faced with uncertainty about their transactions which are influenced by factors beyond their control, such as the independent actions of others (e.g., potentially trustworthy Web vendors, hackers, and unknown new technologies). When consumers must make decisions in this uncertain condition, trust plays an essential role in suppressing certain risk factors. Therefore, trust is an important strategy to overcome the perceived risk of uncertain and uncontrollable transactions (Kim et al., 2008).

According to Davis (1989), easy-to-use technology can increase the level of user confidence and affect the level of user satisfaction in using the product. They do not need to spend a lot of effort. If consumers consider an information technology easy to use, they will feel the benefits of the information system and can be used to meet their needs and desires so that it can generate interest in using the technology.

Perceived usefulness (PU) is how far a person believes that the existence of an information technology will improve the performance of user transactions efficiently and provide benefits in the future (Davis, 1989). Perceived risk
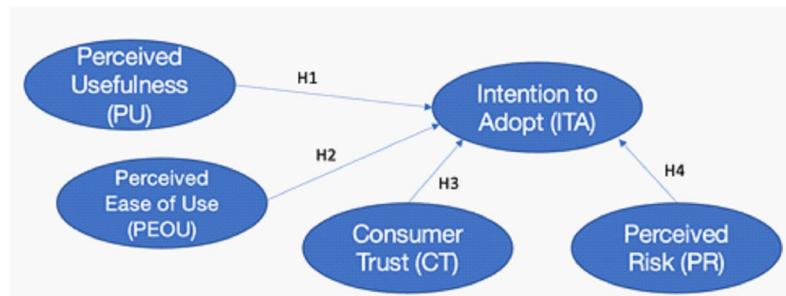

Figure 1 Theoretical Model

Table 1 List of Hypothesis

|	Hypotheses List
H1	Perceived Usefulness (PU) affects Intention to Adopt e-Wallet (ITA)
H2	Perceived Ease of Use (PEOU) affects Intention to Adopt e-Wallet (ITA)
H3	Consumer Trust (CT) affects Intention to Adopt e-Wallet (ITA)
H4	Perceived Risk (PR) affects Intention to Adopt e-Wallet (ITA)

(PR) is a security that affects user trust. PR is often directly related to technology, hence the term PR and PTR are used interchangeably. Security is the main reason for intention to adopt of using e-wallet in conducting online transactions. Users who feel secure in transacting using e-wallet will increasing trust and want to use this technology (Kim et al., 2008; Wiradinata, 2019).

The theoretical model for this study is illustrated in Figure 1 as well as the hypotheses of this study.

Method

The data collection method used in this study is primary data collection, with a self-administered questionnaire as a measuring instrument. The questionnaire was made using measuring indicators from the preceding study

to ensure the validity and reliability of the instrument. Each indicator is measured using a 5-point Likert scale from strongly disagreeing to strongly agreeing. The questionnaires were made using online survey software and were distributed using the purposive (judgmental) sampling method through social media with a minimum target of 100 respondents as advised by Hair et al. (as cited in Memon et al., 2020). After collecting data, there were 128 responses. Among those 128 responses, there were 3 are considered as outliers, hence removed from further analysis. Further analysis was then completed using python programming language as suggested by Thamarai & Malarvizhi (2020). Python language has many libraries that support both statistical analysis and machine learning (Berman et al., 2018; Kulkarni et al., 2020). Figure 2 below show the use of a python box plot to indicate outliers.
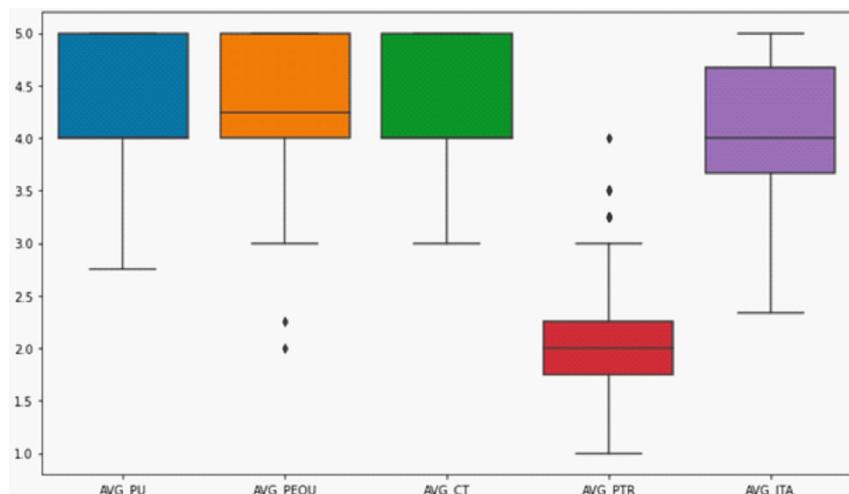
**Figure 2 Removing Outliers from Each Variable Indicated by Box Plot**
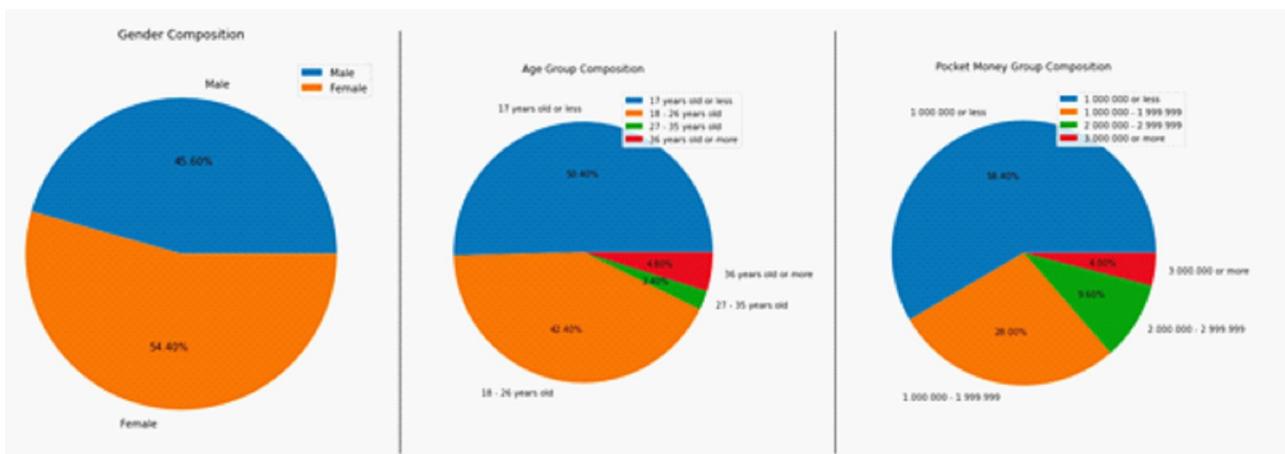
Figure 3 Respondents Profile

Characteristics of respondents are displayed below in Figure 3 where we may find there was a relatively balanced gender between males and females. Age Group composition shows the respondents are predominantly young, 26 years old or less. Most of the respondents (58.40%) have pocket money of fewer than 1 million rupiahs per week which indicates the respondents are people who may be very considerate when spending money, hence their level of perceived risk could be higher.

Results

Construct validity test for perceived usefulness (PU), perceived ease of use (PEOU), consumer trust (CT), perceived risk (PR or PTR), and intention to adopt (ITA) were done using Pearson correlation analysis between each indicator of the latent variables and the sum of all indicators in each variable. All correlations were found significant at 0.01 which indicates all variables are valid. Reliability tests for the five latent variables were done using Cronbach's
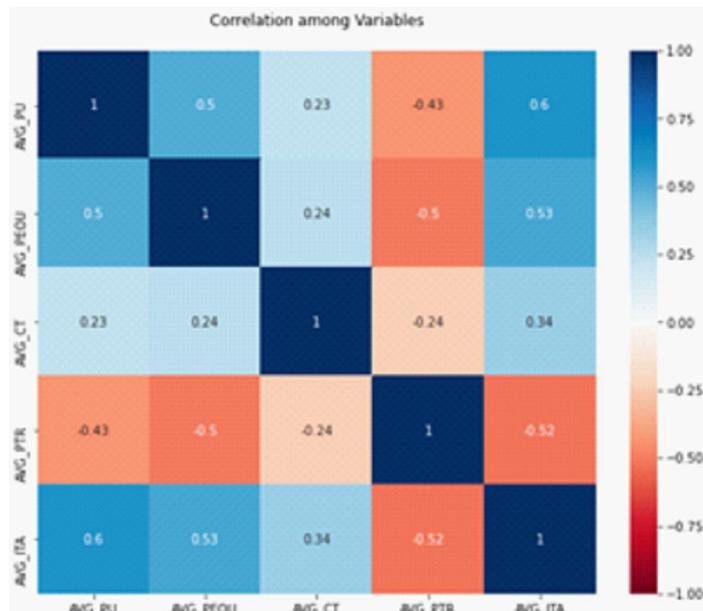
Figure 4 Correlation among Variables

coefficient Alpha. The result shown for PU: 0.8891, PEOU: 0.9395, CT: 0.9078, PTR: 0.8613, and ITA: 0.8949. The reliability test result was shown to be satisfactory which indicates all variables to be reliable.

Correlation among variables indicate there is a relationship between two variables, in this study correlation between independent variables (PU, PEOU, CT, and PTR) were measured against ITA and the result is shown in Figure 4.

Visualization of correlation among variables were done using heatmap library from python which shows PU, PEOU, and CT are positively correlated with ITA, however, PTR is negatively correlated. This relationship is common logic because the more a user thinks using e-Wallet is perceived as risky, the more unlikely the user will adopt.

Finally, the multiple regression analysis of this study was done using the statsmodel library from python by defining independent and dependent variables. Subsequently, the summary statistics can be displayed as shown in Table 2 below.

Discussion

It can be seen from the OLS regression result table above that all hypotheses listed in table 1 are significantly affecting intention to adopt (ITA) e-wallet. The most significant effect was from perceived usefulness (PU) which advised all apps developer who uses e-wallet feature to spend more effort in making users perceiving there are many benefits by using e-wallet. On a side note, the perceived risk (technology risk) is the second-largest affecting antecedents which should be taken care of by minimizing all things potentially increasing users' perception towards risk.

Overall, the theoretical model has a coefficient of determination close to 0.5, which indicates the 50% of measurement towards intention to adopt e-wallet technology is caused by the independent variables used in this study, the other 50% was caused by other variables not included in this study.

For Perceived Usefulness, the developer of e-Wallet can add cash back features, discounts, promos so the user can feel the benefits of

Table 2 OLS Regression Result

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                          OLS Regression Results
==============================================================================
Dep. Variable:              AVG_ITA   R-squared:                       0.494
Model:                          OLS   Adj. R-squared:                  0.477
Method:               Least Squares   F-statistic:                     29.25
Date:              Sun, 18 Jul 2021   Prob (F-statistic):           5.63e-17
Time:                      13:29:53   Log-Likelihood:                -96.741
No. Observations:               125   AIC:                             203.5
Df Residuals:                   120   BIC:                             217.6
Df Model:                         4
Covariance Type:          nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
const          1.0802      0.606      1.783      0.077      -0.120       2.280
AVG_PU         0.4335      0.090      4.790      0.000       0.254       0.613
AVG_PEOU       0.1946      0.084      2.325      0.022       0.029       0.360
AVG_CT         0.1899      0.082      2.330      0.022       0.028       0.351
AVG_PTR       -0.2538      0.088     -2.877      0.005      -0.429      -0.079
==============================================================================
Omnibus:                        4.283   Durbin-Watson:                   1.812
Prob(Omnibus):                  0.117   Jarque-Bera (JB):                3.771
Skew:                          -0.408   Prob(JB):                        0.152
Kurtosis:                       3.240   Cond. No.                         98.6
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Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
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using e-Wallet for the payment such as buy one get two, etc. The developer can also make the e-Wallet application user-friendly to the users, so they are willing to keep using the application because the app is easy to use (perceived ease of use). And the developer can improve the security of their e-Wallet application so there will be no risk. As a result, the users will feel secure having transactions or saving money on the system and trust them to keep using the application (consumer trust).

In conclusion, this study is an excellent reference to all software developers trying to develop or integrate e-Wallet features in their apps. Also, for digital entrepreneurs to know which dominant factors will increase the possibility of the apps being successfully launched and adopted by users, both individuals and small business owners. The implication of this study is expected to increase the number of e-wallet users to more than 25% of population (Annur, 2021).

Furthermore, as a note for future study, this research needs more respondents to build a more precise regression model and more plausible antecedents to increase the coefficient of determination.

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