The Factors that Determine Interest to Use of Mobile Payment: Study on the Students of Garut University, Indonesia

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Abstract. *Mobile payment is generally a payment tool in the form of software available in smartphones to make it easier for its users to make transactions anytime and anywhere his research aims to give empirical evidence of the influence of perceived ease of use, perceived usefulness, trust, and security on the interest in the use of mobile payment in Garut University students. We collect questionnaires from 100 students that are selected using the proportionate sampling method. The data is then analyzed using multiple linear regression. The analysis' results show that both perceived of benefit and security variables partially has a positive effect while the perceived ease of use and trust has an insignificant effect on the interest in using mobile payments. This study provides an essential insight into how academic users in rural areas in Indonesia adopt electronic payment technologies.*

Keywords: *Perceived ease of use, Perceived of usefulness, Trust, Security, Interests.*

1. Introduction

The increasing number of smartphone users demands innovative technology that can make it easier for users to carry out their activities, including trade transactions increasingly rampant (Wang, Putri, Christianto, & Hutama, 2019). New solutions are now being developed in performing the function of changing transaction methods to support business activities (Vasić, Kilibarda, & Kaurin, 2019). Thus, causing an increase in users of technology-based financial services, one of which is mobile payment (Zhang, Luximon, & Song, 2019).
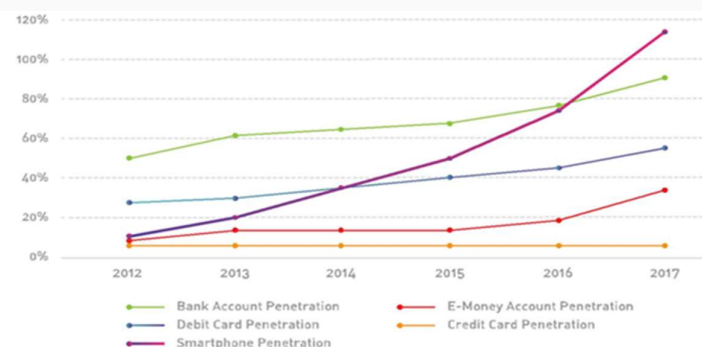

Figure 1.
Penetration of Financial Services User and Banking Services User (Agusta, 2017)

Figure 1 is data released by MDI Ventures & Mandiri Securitas Research, showing a significant increase in users of mobile payment instruments compared to conventional payment instruments in the period between 2012-2017 (Agusta, 2017).

Mobile payment is generally a payment tool in the form of software available in smartphones to make it easier for its users to make transactions anytime and anywhere (Harshita, 2017). At first, mobile payment is less in demand by the public, then, significant development, ease, and benefits are offered, and attractive promotions are carried out (Vasić et al., 2019). Today, Indonesian are doing transactions using mobile payment (Wang et al., 2019) with 37 mobile payment service providers with Bank Indonesia license (Bank Indonesia, 2019).

Table 1.
Number of Electronic Money Circulation in Indonesia Period 2015-2019 (Bank Indonesia, 2020)

Period	2015	2016	2017	2018	2019
Volume	535,579,528	683,133,352	943,319,933	2,922,698,905	5,226,699,919
Nominal	5,283,018	7,063,689	12,375,469	47,198,616	145,165,468

*Volume in a transaction unit
**Nominal in units of million rupiah

Table 1 shows significant evidence in the amount of money circulated between 2015 to 2019. It can be evidence that Indonesian people begin to receive and implement technology-based financial services in daily life (Daily Social, 2015).

Unfortunately, the development of this new payment system encountered obstacles due to the discovery of many cases (Robi'in, Wardana, & Suyoto, 2017). Some cases are related to payment security, such as losing a portion of the balance due to data breaches. The issue is very detrimental because users will have trust issues in the provider of mobile payment services (Apau & Koranteng, 2019).

On the other hand, Garut University is one of the campuses in rural Indonesia that has just newly introduced mobile payment methods to its academic community. Negative issues regarding mobile payments can affect the interest of faculty members in using the new service. Based on the phenomena, the research intends to analyze the factors that affect the interest in using mobile payment.

2. Literature Study / Hypotheses Development

2.1. Interest of Use

According to Davis (1989), interest is the level of how much a person desires in a certain thing. While Kotler & Keller (2016) refers to interest as the taste that arises after seeing and feeling the product's stimulus. The interest to use technology will appear if the technology can be enjoyed and used easily (Raja & Nagasubramani, 2018). There are three dimensions of interest (Einarsdóttir & Rounds, 2000): a) using, b) transactions and c) recommendations. Interest serves as a driver of one's desire, reinforcing desire and mobilization in doing that comes from within a person to do something with the purpose and direction of behaviour, in this case, using a mobile payment for daily needs (Wang et al., 2019).

2.2. Technology Acceptance Model (TAM)

According to Davis (1989), TAM has two element convictions, namely perceived ease of use and usefulness that become the main determinants in adoption behaviour, especially attitude toward using the technological product. The ease of use and the usefulness of a banking system positively

influenced users' attitude and intention to use internet banking (Al-Fahim, Wan Jusoh, & Abideen, 2016; Huei, Cheng, Seong, Khin, & Bin, 2018). Perceive of easy to use can be explained as the level at which the individual believes that using a system would make them free from physical and mental effort. This perception is measured through indicators such as ease of learning (easy to learn), ease of reaching the goal (controllable), easy to understand, flexibility, and easy to access (Chuttur, 2009). And based on Hampshire (2017), the perceived usefulness can be defined in four dimensions, namely: a) productivity, b) effectiveness, c) efficiency and d) benefits.

H$_1$: *Perceived ease of use has a positive effect on the interest in the use of mobile payment on Garut University students*

H$_2$: *Perceived of usefulness has a positive effect on the interest in the use of mobile payments on Garut University students*

2.3. Trust

Trust is one of the factors that positively affect the interest in the use of mobile payments (Alalwan, Dwivedi, & Rana, 2017; Changchit, Lonkani, & Sampet, 2017). The function of trust is to connect the parties involved in the trade affairs (Morrison & Firmstone, 2000). Trust has three dimensions as follows: a) cooperation, b) beliefs, c) predictions, and d) characters (Hampshire, 2017). The indicators of trust are translated to strong commitment, increased duration of good relations between parties involved, and improved quality of information (Salleh, Abdullah, Razali, & Wok, 2013).

H$_3$: *Trust has a positive effect on the interest in the use of mobile payments on Garut University students*

2.4. Security

Optimal security, privacy, and trust are essential elements in e-business (Pearson, 2013; Shah Alam & Mohd Yasin, 2010; Silva Bidarra, Muñoz-Leiva, & Liébana-Cabanillas, 2013). The function of security refers to the feeling of calm towards mobile payment's users due to the safety of confidential information shared (Zhang et al., 2019). The hallmark of a technology that is safe to use and protected from hackers and crackers, the information stored remains intact and there is no damage in both hardware and software (Bezhovski, 2016).

H$_4$: *Security has a positive effect on the interest in the use of mobile payment on Garut University students*

2.5. Conceptual Framework

This study combines the concept of TAM with variable trust and security. We conduct slight modification to Davis (1989) theory of perceived easy use and perceived usefulness. The practice of the theoretical concepts combinations has also been done partially by many previous researchers (Changchit et al., 2017; Huei et al., 2018; Silva Bidarra et al., 2013). Thus, we present the final conceptual model proposition in Figure 2.
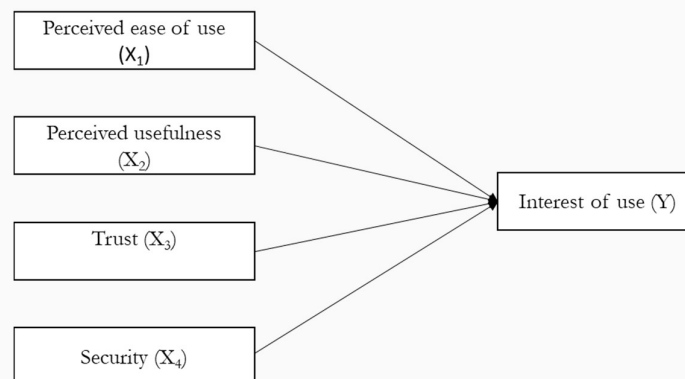

Figure 2.
Conceptual Model
Source: Changchit et al. (2017); Huei et al. (2018); Silva Bidarra et al. (2013)

3.   Research Method

To achieve the research's purpose, we apply the confirmatory analysis to explain the observed variables' cause-effect relationship. We apply proportional random sampling and select 100 respondents out of 6,202 students of Garut University.

We then analyze the data using multiple linear regression (MLR) with four independent variables: perceived ease of use (X_1), perceived usefulness (X_2), trust (X_3), and Security (X_4) and variable of interest of use as Y. We select MLR since this study aims to confirm the research model conducted by Changchit et al. (2017); Huei et al. (2018); Silva Bidarra et al. (2013).

4.   Findings and Discussion

4.1. Respondent Profiling
The respondents' proportion is determined based on three aspects, i.e., based-on faculty, year of entry, and the duration of using mobile payment.

a. Faculty Categorization
Respondents are students from 8 faculties at Garut University and the repondents' proportion is calculated based on the number of students in each faculty. The faculty of Economics has the highest proportion percentage with 33% of the population. The Faculty of Mathematics and Natural Sciences contributes to 27% of the population. The Faculty of Social and Political sciences, Communication Sciences, and Agriculture, each constitutes 9% of the population. The Faculty of Engineering constitutes 4%, from Faculty of Islamic education and teaching constitutes 2%, and from faculty of entrepreneurship constitutes 1% of the population.

b) Year of Entry Categorization
The characteristics of data respondents based-on the students' year of entry are 37% from year of entry 2016, 28% from year of entry 2015, 15% from year of entry 2017, 11% from year of entry 2018, and 9% from year of entry 2019.

c) Duration of Using Mobile Payment Categorization
Of 100 respondents, 42% of respondents using the mobile payment less than two years, 33% of respondents have used the mobile payment for one to one year, 11% of the respondents have used mobile payment for three to four years, 10% of respondents have used mobile payment for two to three years, and only 4% of respondents have used it for more than four years.

4.2. Classical Assumption Test
After passing the validates and reliability tests, the data then goes through the classical assumption test. There are four stages of the test, namely normality test, multicollinearity test, heteroscedasticity test, and goodness of fit test, which are presented as follows:

a) Normality Test
We conduct Kolmogorov Smirnov procedure to ensure that the data follows a normal distribution. Since the test results of normality obtained the value of ASYMP. With a Sig. 0.915 (Table 2) figure that is greater than 0.05, we can conclude the data follows a normal distribution.

b)   Multicollinearity Test
A multicollinearity test is conducted using the VIP indicator to ensure that the correlation of between independent variables used are independent. Since the score of VIP value is lower than 10 and the tolerance value is lower than 0.1 (Table 3), we conclude that the regression model is free from the multicollinearity disorder.

Table 2.
Normality Test

		Standardized Residual
N		37
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	.94280904
Most Extreme Differences	Absolute	.092
	Positive	.085
	Negative	-.092
Kolmogorov-Smirnov Z		.557
Asymp. Sig. (2-tailed)		.915

a. Test distribution is Normal.

Table 3.
Multicollinearity Test.

	Collinearity Statistics	
Model	Tolerance	VIF
(Constant)		
Perceived Ease of Use	.453	2.208
Perceived Usefulness	.447	2.240
Trust	.235	4.254
Security	.262	3.817

c) Heteroskedasticity Test

Figure 3 is a scatterplot graph that we use to ensure that the prerequisite of inequality of variants of the residuals and heteroskedasticity is fulfilled.
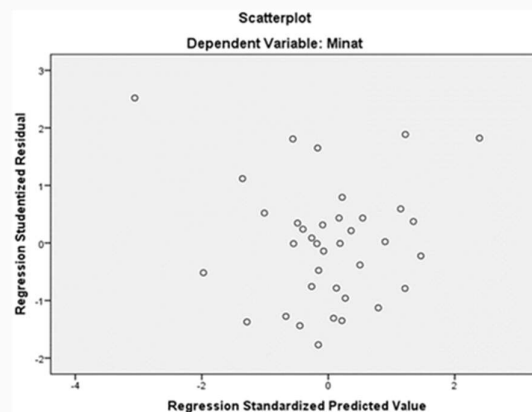

Figure 3.
Heteroskedasticity Test

d) Goodness of Fit Test

Table 4 shows the goodness of fit test result. As shown in Table 4, the model has sig. < Alpha value of 0.000 that is smaller than 0.05. This reflects the validity of the proposed research model.

Table 4.
F Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	264.202	4	66.050	11.064	.000[b]
	Residual	191.041	32	5.970		
	Total	455.243	36			

a. Dependent Variable: Interest of Use
b. Predictors: (Constant), Perceived Ease of Use, Perceived Usefulness, Trust, Security

4.3. Regression Model
Table 5 shows the regression model specification. We write the final model specification as follows:
$$Y=2{,}800+0{,}038X_1+0{,}442X_2+0{,}224X_3+0{,}442X_4+e$$

Table 5.
Multiple Linear regression coefficient

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.800	3.127		.896	.377
	Perceived Ease of Use	.038	.130	.049	.288	.775
	Perceived Usefulness	.442	.132	.576	3.361	.002
	Trust	.224	.172	.309	1.306	.201
	Security	.442	.189	.524	2.341	.026

a. Dependent Variable: Interest of Use
b. Source: output of SPSS

The equation states that a constant of 2.800 means without sub-variables of X_1, X_2, X_3, and X_4 and the magnitude of the interest variable (Y) is 2.800. The X_1 variable (perceived ease of use) of 0.038 signifies that any 1% increase in increments will increase the Y (interest) variable by 3.8%, the variable X_2 (perceived of usefulness) of 0.442 signifies that any 1% increase in increments will increase the Y (interest) variable by 44.2%. Variable X_3 (trust) by 0.224 signifies that any 1% increase in increment will increase the Y (interest) variable by 22.4% and the X_4 (security) variable of 0.442 indicates that every 1% increase in increments will increase the Y (interest) variable by 44.2%. Test of determination is carried out to measure how far the independent variables contribute to the model explanation. From Table 6 it can be seen that the correlation coefficient (R^2) has a value of 0.528, which means that the variables of perceived ease of use (X_1), perceived usefulness (X_2), trust (X_3), and security (X_4) affect the interest of the use of mobile payment (Y) for 52. 8%, of the remaining 47. 3% are influenced by other variables specified beyond this study's focus.

Table 6.
Coefficient Determination

Model	R	R Square	Adjusted R Square
1	.762[a]	.580	.528

a. Predictors: (Constant), perceived ease of use, perceived usefulness, trust and security
b. Source: output of SPSS

The t-test is performed to determine that partial independent variables have a significant effect on the dependent variables.

Table 8:
Partial T-test

Model		T	Sig.
1	(Constant)	.896	.377
	perceived ease of use	.288	.775
	perceived usefulness	3.361	.002
	trust	1.306	.201
	security	2.341	.026

Source: output of SPSS

From the table, it can be seen that:
1) Perceived ease of use (X_1) generates a calculated t-value of 0.288 < 1.984 and a significance value of 0.775 > 0.05. Therefore, H_1 rejected and H_0 accepted that means the perceived ease of use (X_1) does not affect the interest in the use of mobile payment (Y);
2) Perceived of usefulness (X_2) generates a calculated t-value of 3.361 > 1.984 and a significance value of 0.002 > 0.05. Therefore, H_2 accepted and H_0 rejected that perceived usefulness (X_2) has a significant positive effect on the interest in using mobile payment (Y);
3) Trust (X_3) generates a calculated t-value of 1.306 < 1.984 and a significance value of 0.201 > 0.05. Therefore, H_3 rejected and H_0 accepted that means trust (X_3) does not affect the interest in using mobile payment (Y);
4) Security (X_4) generates a calculated t-value 2.341 > 1.984 and significance value of 0.026 > 0.05. Therefore, we can conclude that H_4 accepted and H_0 rejected that means security (X_4) has a significant positive effect on the interest of using mobile payment (Y).

The findings of this study consist of surprising findings because, in previous studies, all tested variables usually influence interest to use (Changchit et al., 2017; Huei et al., 2018; Silva Bidarra et al., 2013). However, these findings can explain that the character of Indonesian people who are easily

exposed to issues from untrusted sources on social media (Salam, 2018), also affects how they use things on other platforms, namely the mobile payment application. The lack of literacy of Garut University students regarding mobile payment technology can also have an impact on their indifference to the trustworthiness status of a mobile payment application (Liébana-Cabanillas, García-Maroto, Muñoz-Leiva, & Ramos-de-Luna, 2020).

Likewise, the finding that the variable perceived ease of use had no effect on the interest of use of mobile payments. This can happen because it is easy to find information about the use of technology by asking the WhatsApp group (Seufert, Hoßfeld, Schwind, Burger, & Tran-Gia, 2016), or by searching through google (DiLillo & Gale, 2011).

5. Conclusions

Our analysis shows that perceived usefulness and security toward interest in the use of mobile payment has a significant positive relation. Next, we conclude that both perceived ease of use and trust variables do not affect the respondents' interest in using mobile payment. This study has several limitations. Although most respondents originally come from a rural area, the access of Garut University to electronic services is relatively strong. The proposed research

model is also relatively straightforward. Thus, further developments are still open. The use of a more novel theory in evaluating mobile payments' performance, such as using TAM 3 can be carried out in future studies to provide a more detailed insight into the rural customers' behaviour. The customers' use behaviour can be explained not only by the variable perceived ease to use and perceived usefulness, but also by fourteen other explanatory variables (Jaradat & Al-Mashaqba, 2014). Besides TAM 3, the unified theory of acceptance and use of technology (UTAUT) can also be further explored especially to incorporate social influence and facilitation considerations.

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