Factors Affecting Behavioral Intention to use Mobile Payment Based on Indonesia User Perspective

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Abstract: The purpose of this study was to determine the factors that influence the user's behavioral intention to use mobile payments. The method used is a quantitative method by distributing questionnaires online to 400 respondents. Data were analyzed using statistic. The results obtained are all variables in this study are declared valid and reliable and all independent variables have a positive and significant effect on the dependent variable in this study. So, it can be concluded that the independent variables proposed in this study, namely trust, perceived usefulness, perceived ease of use, social influence, attitude towards using can affect the user's behavioral intention to use mobile payments. Therefore, it is hoped that the variables proposed in this study can be considered for other mobile payment services in Indonesia so that users continue to use their mobile payment system.

Keywords: Mobile Payment, Trust, Perceived Usefulness, Perceived Ease of Use, Social Influence, Attitude Toward Using, Behavioral Intention to Use.

1. Introduction

Indonesia has experienced rapid development in the technology sector in recent years. These developments in technology have had a positive impact on various sectors such as the health, education, transportation, and finance sectors. In the financial sector, companies compete to provide faster and more efficient payment services. Therefore, an innovation has emerged in the financial sector that can provide solutions to these problems, namely financial technology (fintech) which is alteration from banking, crowdfunding, financial planning, research funding, securities trading, or mobile payments **(Nelloh, Santoso, and Slamet, 2019)**.

August 14, 2014, the Governor of Bank Indonesia encouraged all Indonesian people to reduce the use of cash through the National Non-Cash Movement. Where this movement has the aim of raising public awareness to change their habits from previously making cash payments to non-cash payments. Where this movement was compiled by the central bank to expand the scope of use of non- cash payments and provide understanding to the community regarding non-cash payments.

Currently companies in Indonesia that provide mobile payment services continue to increase from $15.545 in 2016 up to $26.575 in 2019 **(Nelloh, Santoso, and Slamet, 2019)**. This is because mobile payments can make it easier for consumers to use several instant services such as public transportation, food delivery, and digital payments for food and beverage sellers **(Nelloh, Santoso, and Slamet, 2019)**. The growth of mobile payments in Indonesia does not only come from the banking sector, but also comes from the telecommunications division, as well as from transportation companies, and some from digital start-up companies **(Nelloh, Santoso, and Slamet, 2019) (Chandra et al., 2018)**. Mobile payment can also be called an e-wallet, where the payment method is made via a mobile device such as a cell phone **(Dahlberg et al., 2008)**.

Based on data from Bank Indonesia, there are 38 e-wallets that have received official licenses. IPrice Group is working with trusted analytics company App Annie to process data about the most popular e-wallet application in Indonesia. Based on Q2 2019 data obtained from App Annie, the top 5 e-wallet applications with the most monthly active users are still occupied by local players, namely Go-Pay, OVO, DANA, LinkAja, and Jenius as shown in Figure 1 **(Devita, 2019)**. As for data according to a survey conducted by PricewaterhouseCoopers (PwC) relating to Global Consumer Insights 2019, as many as 47% of respondents in Indonesia currently have used mobile payments for transactions in 2019.

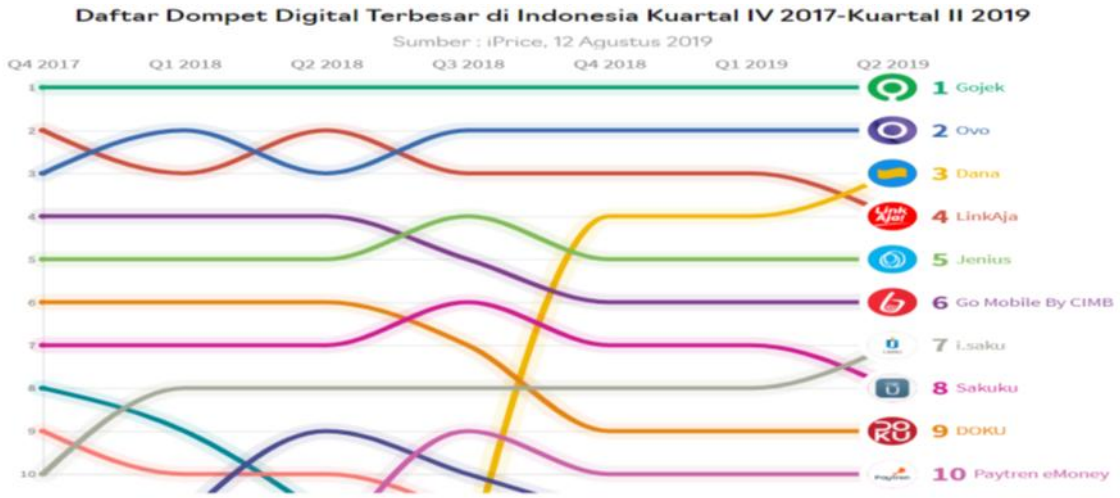

Figure 1. List of digital wallets in Indonesia.

As cited by CNBC Indonesia, the use of mobile payments in Indonesia during the covid-19 pandemic has increased so rapidly. For new users of OVO, this increased by 267%. The increase in transactions in DANA from January to mid-May reached 50%. GOPAY recorded a 103% increase in transactions during the pandemic **(Astutik and Hastutik, 2020)**. In this study, the authors found several studies related to the analysis of factors that influence user behavior to use mobile payments **(Chandra et al., 2018) (Aslam, Ham, and Arif, 2017) (Lau et al., 2019) (Sunny and George, 2018) (Cabanillas, Luna, and Rios, 2017)**. The variables that the authors take from these studies include perceived usefulness, perceived ease of use, attitude towards using, and behavioral intention to use. There are several concepts taken by the author in making this research model.

2. Significance of the Study

A similar study was conducted by **(Amin et al., 2015)** about "Applying the Technology Acceptance Model in examining Bangladeshi consumers behavioral intention to use Mobile Wallet" to analyzing the factors that influence consumer behavior towards the implementation of mobile payment services as well as how consumer behavior can change into an intention to use mobile payment services. Where the research is a reference for the authors in making conceptual models using 4 existing variables, namely perceived usefulness, perceived ease of use, attitude towards using, and behavioral intention to use. Although in a study conducted by **(Amin et al., 2015)**, it was concluded that perceived ease of use had no significant effect on behavioral intention to use. The author continues to use these variables. Because based on research conducted by **(Qu et al., 2018)**, it was concluded that perceived ease of use had a significant effect on behavioral intention to use. However, in a study conducted by **(Amin et al., 2015)** did not include external variables contained in the TAM model. Therefore, in this research, the authors adding 2 external variables, namely trust and social influence.

This is because based on research conducted by **(Gefen, Karahanna, and Straub, 2003)**, states that if someone believes in a technology or system, they will have an intention to want to use that technology. Another study was found by **(Nguyen et al., 2016)** who stated that trust has a significant effect on behavioral intention to use mobile payment in Vietnam. Also found research that has been conducted by **(Abrahão, Moriguchi, and Andrade, 2016)** stated that social influence has a significant effect on behavioral intention to use. Therefore, with this model, it is expected to get the perspective of mobile payment users in Indonesia.

From these data, each mobile payment in Indonesia continues to increase every year, especially during the covid-19 pandemic. Of course, there are factors that cause an increase in transactions for each mobile payment in Indonesia. Therefore, this study aims to determine the behavioral intentions of users to use mobile payment services in Indonesia currently. It is hoped that this research will later be able to provide advice to mobile payment companies in Indonesia regarding the factors that cause users to use certain mobile payment services.

3. Review of Related Study

In this study, the authors found several studies related to the analysis of factors that influence user behavior to use mobile payments **(Chandra et al., 2018) (Aslam, Ham, and Arif, 2017) (Lau et al., 2019) (Sunny and George, 2018) (Cabanillas, Luna, and Rios, 2017)**. The variables that the authors take from these studies include perceived usefulness, perceived ease of use, attitude towards using, and behavioral intention to use. There are several concepts taken by the author in making this research model.

For the variable perceived usefulness, it can be concluded that it has a significant effect on attitude towards using **(Chandra et al., 2018) (Aslam, Ham, and Arif, 2017) (Cabanillas, Luna, and Rios, 2017)**. It was also found that the variable perceived usefulness has a significant effect on behavioral intention to use mobile payment **(Lau et al., 2019) (Cabanillas, Luna, and Rios, 2017) (Qu et al., 2018) (Nguyen et al., 2016)**. So that the authors continue to use the variable perceived usefulness in measuring the influence of these variables on attitude towards using and behavioral intention to use. For the variable perceived ease of use, almost all studies conclude that perceived ease of use has a significant effect on attitude towards using **(Chandra et al., 2018) (Aslam, Ham, and Arif, 2017) (Cabanillas, Luna, and Rios, 2017)**. It was found that different results from research conducted by **(Aslam, Ham, and Arif, 2017) (Nguyen et al., 2016)**. Perceived ease of use has no effect on attitude towards using mobile payment. Also found research conducted by **(Qu et al., 2018)**, it was concluded that perceived ease of use has a significant effect on behavioral intention to use mobile payments in China. Therefore, the authors use the variable perceived ease of use in measuring the influence of these variables on attitude towards using and behavioral intention to use.

For the attitude towards using variable, there are two studies that conclude that it has a significant effect on behavioral intention to use **(Chandra et al., 2018) (Aslam, Ham, and Arif, 2017)**. It was found that different results from research conducted by **(Cabanillas, Luna, and Rios, 2017)** concluded that attitude towards using has a but not significant effect on behavioral intention to use mobile payment. The author in this study still uses the attitude towards using variable in measuring the influence of these variables on behavioral intention to use.

4. Objectives of the Study

- To find out what factors influence the user behavioral intention to use mobile payment.

5. Hypotheses of the Study

- There is a significant influence between the trust variable on the perceived usefulness variable.
- There is a significant influence between the perceived usefulness variable on the attitude towards using variable.
- There is a significant influence between the perceived ease of use variable on the attitude towards using variable.
- There is a significant influence between the trust variable on the user behavioral intention to use variable.
- There is a significant influence between the social influence variable on the user behavioral intention to use variable.
- There is a significant influence between the attitude towards using variable on the user behavioral intention to use variable.
- There is a significant influence between the perceived usefulness variable on the user behavioral intention to use variable.
- There is a significant influence between the perceived ease of use variable on the user behavioral intention to use variable.

6. Population and Sample

The method used in this research is a quantitative method distributing questionnaires online via google form. Where the population for this study is the number of users of the three mobile payment services in Indonesia, namely GOPAY, OVO, DANA. The number of users for the three services is 32.900.000 users. The sampling technique used in this study is to use simple random sampling technique. The number of samples in this study were 400 respondents. However, in distributing questionnaires, the authors will add as much as 10% of the minimum number of respondents previously obtained to avoid unresponsive data. Therefore, the authors of this study will distribute questionnaires to 440 respondents.

6.1. Statistical Techniques Used in the Present Study

6.1.1. Validity Test

This test is conducted to determine whether each statement submitted in this questionnaire has a valid value or not. Validity testing is carried out based on item analysis, namely correlating the scores of each item with variable scores using the Pearson Correlation technique. The validity test is calculated using SPSS. There are 2 criteria in the validity test, if the significance value < 0.05 and then value of r count > r table (0.098), the item is

declared valid. Otherwise, if the significance value > 0.05 and then value of r count < r table (0.098), the item is declared invalid **(Priyatno, 2018)**.

6.1.2. Reliability Test

This test is carried out using the Cronbach Alpha method which is used as a measuring tool to see whether the results for each variable are reliable or not. The basis for decision making in this study is to state a variable is reliable or not, the writer uses the theory according "reliability is less than 0.6 is not good, while 0.7 is acceptable and above 0.8 is good." **(Priyatno, 2018)**.

6.1.3. Hypotheses Test

This test is conducted to determine whether the independent variable has a significant effect on the dependent variable or not. There are 2 criteria in making decisions for this test, if the significant value < 0.05 and the t value > t table (1.966), then the independent variable has a significant effect on the dependent variable. Otherwise, if the significant value > 0.05 and the t value < t table (1.966), then the independent variable has no significant effect on the dependent variable **(Priyatno, 2018)**.

6.1.4. Determination Coefficient Test

This test is conducted to measure how far the model explains the dependent variable with a value between 0 and 1. The small coefficient of determination means that the independent variable is very limited in explaining the dependent variable. Meanwhile, the coefficient of determination which is close to 1 means that the independent variable provides the information needed by the dependent variable **(Ghozali, 2018)**.

6.2. Data Analysis and Interpretation

Table 1. Distribution respondents based on gender.

Gender	Valid respondents	Percentage
Male	233	52.7 %
Female	209	47.3 %
Total	442	100 %

Interpretation of table-1.

Based on table 1 above the most respondents are male respondents. A total of 52.7% were male or 233 people. And the remaining 47.3% are female or 209 people.

Table 2. Distribution respondents based on usage.

Answer	Valid respondents	Percentage
Yes	418	94.6 %
No	24	5.4 %
Total	442	100 %

Interpretation of table-2.

Based on table 2 above, 442 respondents who filled out the questionnaire, 94.6% or as many as 418 respondents had used one of the three mobile payment services in Indonesia. Meanwhile, the respondents who said they had never used it were 5.4% or 24 people.

Table 3. Validity test results.

Variable	Indicator	Significance	r_{count}	r_{table}	Description
Trust	T.1	0.000	0.729	0.098	Valid
	T.2	0.000	0.763	0.098	Valid
	T.3	0.000	0.795	0.098	Valid
Perceived Usefulness	PU.1	0.000	0.815	0.098	Valid
	PU.2	0.000	0.819	0.098	Valid
	PU.3	0.000	0.785	0.098	Valid
Perceived Ease of Use	PEOU.1	0.000	0.773	0.098	Valid
	PEOU.2	0.000	0.742	0.098	Valid
	PEOU.3	0.000	0.776	0.098	Valid

Social Influence	SI.1	0.000	0.825	0.098	Valid
	SI.2	0.000	0.830	0.098	Valid
	SI.3	0.000	0.800	0.098	Valid
Attitude Towards Using	ATU.1	0.000	0.803	0.098	Valid
	ATU.2	0.000	0.813	0.098	Valid
	ATU.3	0.000	0.788	0.098	Valid
User Behavioral Intention to Use	UBITU.1	0.000	0.802	0.098	Valid
	UBITU.2	0.000	0.817	0.098	Valid
	UBITU.3	0.000	0.796	0.098	Valid

Interpretation of table-3.

From the results obtained in table 3, it can be seen the results of the significance value and the r count value obtained. The significance value will be compared with the value 0.05 and the r count value will be compared with the r table (0.098). If the significance value obtained is < 0.05 and the value r count > r table (0.098), the item is declared valid. Conversely, if the significance value obtained is > 0.05 and the r count < r table (0.098), the item is declared invalid. Based on table 3, all the significance values of each indicator have a significance value > 0.05 and a value r count > r table (0.098). So, it can be concluded that each variable X and Y in this study is declared valid.

Table 4. Reliability test results.

Variables	Cronbach's Alpha	N of Items	Description
Trust	0.638	3	Reliable
Perceived Usefulness	0.731	3	Reliable and Accepted
Perceived Ease of Use	0.642	3	Reliable
Social Influence	0.753	3	Reliable and Accepted
Attitude Towards Using	0.721	3	Reliable and Accepted
User Behavioral Intention to Use	0.728	3	Reliable and Accepted

Interpretation of table-4.

From the results obtained in table 4, the Cronbach Alpha value for all variables is > 0.6. So, it can be concluded that all variables in this study are reliable. There are 4 variables, namely perceived usefulness, social influence, attitude towards using, and user behavioral intention to use have a Cronbach Alpha value > 0.7. So that the four variables are declared reliable and acceptable.

Table 5. Hypotheses test results.

Hypotheses	t_{count}	t_{table}	Significance	Description
Trust→ Perceived Usefulness (H1)	15.192	1.966	0.000	Accepted
Perceived Usefulness→ Attitude Towards Using (H2)	17.911	1.966	0.000	Accepted
Perceived Ease of Use→ Attitude Towards Using (H3)	16.485	1.966	0.000	Accepted
Trust → User Behavioral Intention to Use (H4)	15.881	1.966	0.000	Accepted
Social Influence → User Behavioral Intention to Use (H5)	20.435	1.966	0.000	Accepted
Attitude Towards Using → User Behavioral Intention to Use (H6)	18.563	1.966	0.000	Accepted
Perceived Usefulness → User Behavioral Intention to Use (H7)	20.307	1.966	0.000	Accepted
Perceived Ease of Use → User Behavioral Intention to Use (H8)	16.537	1.966	0.000	Accepted

Interpretation of table-5.

From the output obtained in table 5, the significance value for all variables is < 0.05 and t count value > t table (1.966). So, it can be concluded that all hypotheses in this study are accepted and have a positive and significant effect.

Table 6. Determination Coefficient test results.

Hypotheses	R Square	Percentage
Trust → Perceived Usefulness (H1)	0.367	37 %
Perceived Usefulness → Attitude Towards Using (H2)	0.446	45 %
Perceived Ease of Use → Attitude Towards Using (H3)	0.406	41 %
Trust → User Behavioral Intention to Use (H4)	0.388	39 %
Social Influence → User Behavioral Intention to Use (H5)	0.512	51 %
Attitude Towards Using → User Behavioral Intention to Use (H6)	0.464	46 %
Perceived Usefulness → User Behavioral Intention to Use (H7)	0.509	51 %
Perceived Ease of Use → User Behavioral Intention to Use (H8)	0.407	41 %

Interpretation of table-6.

From the results obtained in table 6, hypotheses that have the greatest influence are hypotheses 5 and 7. Where both have R square values of 0.512 and 0.509. If rounded to a percent. both hypotheses have an R square value of 51%. Hypotheses that have a small R square value is hypothesis 1. Where the R square value is 0.367. If rounded to a percentage, it becomes 37%.

7. Recommendations

- For the further studies, the authors suggest that to use the order reference models such as Unified Theory of Acceptance and Use of Technology (UTAUT) can be used to provide an analysis of gender and age variables as moderating variables in influencing user behavioral intention to use mobile payment services.
- Adding other external variables such as reviews and ratings of an application whether these two variables can influence user behavioral intentions to use mobile payment services.

8. Conclusion

The purpose of this study is to find the factors that influence user behavioral intention to use mobile payment in Indonesia. In this study, the authors used the TAM model. The authors found similar studies that have been conducted by **(Amin et al., 2015)** about "Applying the Technology Acceptance Model in examining Bangladeshi consumers behavioral intention to use Mobile Wallet" to analyzing the factors that influence consumer behavior towards the implementation of mobile payment services as well as how consumer behavior can change into an intention to use mobile payment services. However, in that study did not include external variables contained in the TAM model. Therefore, in this research, the authors adding 2 external variables, namely trust and social influence with expected to get the perspective of mobile payment users in Indonesia.

The results of this study state that the factors that influence the user's behavioral intention to use mobile payments are trust, social influence, attitude toward using, perceived usefulness, and perceived ease of use. There are 2 variables that have a high enough influence on user behavioral intentions namely social influence and perceived usefulness, which reaches 51%. Therefore, it is hoped that mobile payment services in Indonesia can provide new innovations to the payment process that has been implemented so far so that users can have other payment alternatives during this pandemic. For example, payment by means of "Smile to Pay" which has been implemented in China in recent years, where this payment is made by means of face recognition so that when the user wants to make a payment, the user only must stand in front of the smile to pay machine by smiling and entering the user's phone number. After that the user's balance will be automatically deducted. This is an interesting and useful innovation in this pandemic. At the time of making a payment, users do not need to interact directly with other people. With this innovation, it is hoped that users will be able to inform each other about the latest ways to make payment transactions during this pandemic.

The variable that has the smallest influence in this study is trust. So, it is hoped that mobile payment services in Indonesia must provide sufficient knowledge to both new and existing users regarding the crimes that often occur. So that if the user gets a fraud mode on behalf of a mobile payment company, the user can be more careful regarding the user's personal information so that it is not misused by other parties.

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