

The Use of Unified Theory of Acceptance and Use of Technology in the Adoption of M-Payment

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ABSTRACT

One of the financial technologies (FinTech) innovations used by 46% of the internet user in Indonesia is mobile payment, or m-payment. This quantitative research aims to examine the acceptance level of m-payment applications using the Unified Theory of Acceptance and Use of Technology (UTAUT). An online questionnaire was distributed among 102 respondents and processed with the software IBM SPSS Statistics 25 using a multiple linear regression model. The result shows that independent variables such as performance expectancy, effort expectancy, social influence, and facilitating conditions, significantly influence behavioral intentions of m-payment use.

Keywords:

UTAUT, m-Payment, financial technology, behavioral intentions.

1. Introduction

The development of internet technology in the last twenty years has undeniably brought many benefits to its users, both in terms of communication, information dissemination, lifestyle, and distribution of goods and services. In Indonesia, the percentage of internet users has reached 56% of the total 268.2 million population of Indonesia in 2019 (Katadata.co.id 2019). Mobile phones, especially smartphones, are arguably an important element that unites communication and entertainment functions (Abrahão, Moriguchi, & Andrade, 2016).

At present, retail banks are not the only dominant players in the financial services industry. Users of online shopping applications now can not only pay by debit card, because they can also choose to use PayPal. Novice business people have other funding alternatives in the form of peer-to-peer (P2P) lending, which can be accessed online. Therefore, the financial services industry is currently moving towards the era of digitalization (Chishti and Barberis 2016).

One type of business created to meet the needs of the community for more practical financial services is known as financial technology, or abbreviated as FinTech. This term is used to refer to all products resulting from innovation which are a combination of financial services and information technology (Bank Indonesia 2016). FinTech allows payment transactions that initially have to be done face-to-face with a certain amount of cash, to be possible remotely within seconds. On a macroeconomic scale, non-cash transactions make the economy more efficient by making the handling processes undertaken by businesses and governments more transparent and accountable (Kompas.com 2014).

One of the most widely used FinTech products in Indonesia today is mobile payment, also known as m-Payment, which refers to financial service products that can be accessed via mobile phones (Bank Indonesia 2016). Over the past few years, m-Payment has shown rapid growth. Developed countries which are the center of m-Payment progress issue Google Wallet and PayPal. With the tight regulation of foreign companies in Asia, local FinTech companies are also developing in China, such as AliPay and WeChatPay (Bayindir and Trifonova 2019).

The procurement of m-Payment services in Indonesia is supported by Bank Indonesia (BI) through the "National Non-Cash Movement" campaign. This movement began in 2014 (Agusta 2018). As well as an innovation in the payment system, a company must be able to recognize well the needs of its users. Understanding of consumers will be able to help understand the achievement of maximum performance in providing the best service for consumers.

This study aims to examine the level of user acceptance of the m-Payment application using the perspective of the Unified Theory of Acceptance and Use of Technology (UTAUT). UTAUT is a model developed by Venkatesh in 2003 by combining eight previously developed theories with the aim of measuring the level of acceptance and use of a technology. The aspects discussed in the UTAUT include performance expectancy, effort expectancy, social influence, and facilitating conditions. The author decides to use UTAUT after comparing several other alternative theories or models, because UTAUT is considered to be the most comprehensive and can describe in detail the context of technology acceptance in Indonesia.

Until now, there is limited research that measures the level of acceptance of FinTech products, in this case m-Payment. Research that studies the intention and actual use of m-Payment as a means of payment in Indonesia, especially in Jakarta, Bogor, Depok, Tangerang and Bekasi areas (Greater Jakarta), is also limited. Therefore, there is a question whether the performance expectation, effort expectation, social influence and facilitating conditions influence the users' intention behavior to use m-Payment.

2. Literature Review and Hypothesis Development

Magsamen-Conrad et al. (2015) used UTAUT to measure the actual use and adoption of inter-generation tablet PC technology. As a result, only determinants of effort expectancy and facilitating conditions that affect positively after going through gender, age, experience, and voluntariness of use moderations. Khechine et al. (2014) used UTAUT to measure the level of acceptance of the webinar system by students. The results of this study indicate that interest in using a webinar system is directly influenced by three of the four independent variables of UTAUT, which are performance expectancy, effort expectancy, and facilitating conditions. Camilleri (2019) examined the user acceptance of e-government services in the form of government agency web pages using the UTAUT approach. The results of this study indicate that this model is suitable for analyzing problems related to technology acceptance. UTAUT constructs such as performance expectancy, effort expectancy, social influence, and facilitating conditions have a positive influence on the ability to use online-based government services.

According to Venkatesh et al. (2003), performance expectancy is defined as the level at which a person believes that using the system will help him gain profits at work. The higher level of trust someone uses the system will help him get better performance, is considered to be a very high perception of performance expectations for the system. Venkatesh (2016) states that performance expectations have the most significant influence compared to the other three variables. Research with similar results by Khechine et al. (2014) states that performance

expectancy has the most significant effect on the acceptance of tablet PC technology along with two other variables, effort expectancy and facilitating conditions. Users who have high levels of performance expectations are considered to have a good perception of the m-Payment service system (Attuquayefio and Addo 2014). This indicates that there is an opportunity for users who wish to use the m-Payment service system. For this reason, performance expectations can affect the user's intention to use the m-Payment service system

H₁: Performance expectancy influences the user's behavioral intentions on the m-Payment use.

Effort expectation is defined as the level of ease of use of the system (Venkatesh, Thong and Xu 2016). Someone's perception of the ease of using a system is often regarded as something that tends to affect the desires of individuals using the system. A user who has a high level of effort expectation is considered to have a good perception of the m-Payment service system (Liébana-Cabanillas, Sánchez-Fernández and Muñoz-Leiva 2014). Another study by Al-Qeisi (2015) found that effort expectations were a key determinant in his research regarding internet banking acceptance in Arab countries. The results of this study indicate the existence of user interest to use the system, with the condition that the level of ease that users can accept. For this reason, effort expectations can affect the user's intention to use the m-Payment service system.

H₂: Effort expectancy influences the user's behavioral intention towards the m-Payment use.

Social influence is defined as the extent to which a person feels that other people considers important believe that he must use a new system. This happens because an individual's behavior is influenced by the way the individual believes that others will see it as a result of the use of technology (Venkatesh, Morris, et al. 2003). Study conducted by Mustaqim et al. (2018) regarding the factors that influence the intention to use an e-commerce site, social influence is the only one among other UTAUT constructs that significantly influences the intention to use an e-commerce site. Another study by Camilleri (2019) that measured the level of acceptance of e-government systems produced the same conclusion, which is social influence was a significant influence on the intention in using the system. A user who has a high level of social influence is considered to have a good perception of the m-Payment service system. This indicates that there is an opportunity for users who wish to use the m-Payment service system. For this reason, social influence can influence the user's intention to use the m-Payment service system.

H₃: Social influence influences the user's behavioral intention in the m-Payment use.

Facilitating conditions are defined as the extent to which a person believes that the infrastructure and facilities that exist to support the intention of individuals to adopt technology (Venkatesh, Morris, et al. 2003). The level of trust can be said as the magnitude of one's perception of facilities that support the intention of individuals to adopt technology. A user who has a high level of facilitating conditions is considered to have a good perception of the m-Payment service system. This indicates that there is an opportunity for users who wish to use the m-Payment service system. Research by Abrahao et al. (2016) regarding the interest in using e-learning in college students shows that effort expectancy has the most significant effect, followed by facilitating conditions. Meanwhile, research by Al-Qeisi et al. (2015) concluded that facilitating conditions did not significantly influence interest in using the internet banking system. However, research by Khechine et al. (2014) which discusses the level of acceptance of e-government systems concludes facilitating conditions have a significant effect on system acceptance.

H₄: Facilitating conditions influence the user's behavioral intention towards the m-Payment use.

3. Materials and Methods

The research object used in this study is all mobile payment services or m-Payment, which are financial service products that can be accessed via mobile phones. The five most popular m-Payment service products in Indonesia in 2018 are Go-Pay from Go-Jek, OVO from PT. Visionet Internasional, Tcash from Telkomsel, BCA KlikPay from BCA, and DOKU Wallet (FT Confidential Research Mobile Payment 2019).

This research distributed online questionnaire using Google Form. The approach used in this research is descriptive quantitative. This study adopted a questionnaire statement developed by Venkatesh et al. (2003). The survey instrument consisted of two parts. The first part gathered demographic information about the respondents and their preferences of M-Payment use. The second part captured measures of the research variables. Performance Expectancy variable is measured by perceived usefulness, job-fit, relative advantage and outcome expectations. effort expectancy variable is measured by perceived ease of use, complexity, and ease of use. Social

Influence indicators consist of subjective norm, social factors and image. Variable of Facilitating Conditions is measured by perceived behavioral control, and compatibility. Behavioral Intention is measured by using system use continuance constructs.

Sample collection uses purposive sampling method. The samples used were 102 respondents who live in the areas of Greater Jakarta and have used the m-Payment system. In this study, researchers used multiple linear regression analysis. Multiple linear regression analysis techniques are used to examine the relationship between several independent variables (X1, X2, ... Xn) with the dependent variable (Y). Some statistical tests that will be carried out in this study are the reliability and validity tests, and the classical assumption test which consists of the normality test, heteroscedasticity test, and multicollinearity test. As well as conducting hypothesis testing, which are the simultaneous significance test (F test) and partial significance test (T test).

4. Results and Discussion

Descriptive statistical results on respondents indicate that the proportion of research respondents by gender 41.75% of respondents were male, and 58.25% were female. Proportion of domicile of respondents, most of the respondents 56.31% came from DKI Jakarta, 18.45% Tangerang, 5.83% Bekasi, 4.85% Depok, 2.91% came from Bogor, and the rest are from other regions. Based on the age of the respondents, where 57.3% aged 19-25 years, 21.4% aged 26-32 years, 9.7% aged 40 years and over, 7.8% aged 33-39 years, and 3.9 % aged 18 years and under.

Table 1 presents demographic data on the respondent responses used in the analysis. Of the 102 respondents, 41.75% were male, and 58.25% were female. Fifty-seven respondents (55.89%) live in Jakarta. Most of respondents (fifty-nine or 57.3%) are in a range of age 19-25-year-old.

Table 1. Sample Demographics

Category	Frequency (n = 102)	Percentage
Gender		
Male	42	41.75%
Female	60	58.25%
City		
Bekasi	9	8.83%
Bogor	6	5.83%
Depok	11	10.79%
DKI Jakarta	57	55.89%
Tangerang	19	18.63%
Age		
Less than 18	4	3.9%
19-25	59	57.3%
26-32	22	21.4%
33-39	7	7.8%
More than 40	10	9.7%

Prior to test the hypothesis, this study tested the data obtained from the questionnaire, to ensure that the data to be processed was valid and reliable. The results of the reliability test as indicated in Table 2, state that data is reliable because the Cronbach's Alpha value is above 0.6.

Table 2. Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N of Items
0,917	16

The validity test results in Table 3 show that the research instruments were valid.

Table 3. Validity Test Results

Validity Test Results			
Performance Expectancy	r count	r tabel (5%)	Criteria
PE1	0,546	0,166	Valid
PE2	0,635	0,166	Valid
PE3	0,585	0,166	Valid
PE4	0,513	0,166	Valid
Effort Expectancy	r count	r tabel (5%)	Criteria
EE1	0,715	0,166	Valid
EE2	0,774	0,166	Valid
EE3	0,770	0,166	Valid
EE4	0,743	0,166	Valid
Social Influence	r count	r tabel (5%)	Criteria
SI1	0,514	0,166	Valid
SI2	0,514	0,166	Valid
Facilitating Conditions	r count	r table (5%)	Criteria
FC1	0,643	0,166	Valid
FC2	0,485	0,166	Valid
FC3	0,587	0,166	Valid
Behavioral Intentions	r count	r table (5%)	Criteria
BI1	0,697	0,166	Valid
BI2	0,778	0,166	Valid
BI3	0,774	0,166	Valid
BI4	0,686	0,166	Valid

In addition, this study also conducted normality, heteroscedasticity and multicollinearity tests. The results of this test indicate that the data met the criteria.

Simultaneous significance test or F test is used to test whether there is a simultaneous influence between all independent variables on the dependent variable. If the significance value is less than 0.05, then the hypothesis is accepted, and if the significance value is greater than 0.05, the hypothesis will be rejected.

The hypothesis used in this F test is as follows.

H₀: The independent variables, performance expectancy, effort expectancy, social influence, and facilitating conditions do not have a significant influence together on use behavioral intentions.

H_a: The independent variables, performance expectancy, effort expectancy, social influence, and facilitating conditions have a significant influence together on use behavioral intentions.

Following the predetermined hypothesis, the results of the F test can be seen from the significance value in Table 4.

Table 4. Test Results F

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	448,890	4	112,223	60,119	.000 ^b
	Residual	182,935	98	1,867		
	Total	631,825	102			
a. Dependent Variable: BI						

Based on the results in Table 4, the significance value obtained is 0.000, which means lower than 0.05. With these results, it can be concluded that H_a was accepted. The independent variables, performance expectancy, effort expectancy, social influence, and facilitating conditions have a significant influence together on the dependent variable, behavioral intentions.

A partial significance test or T test is used to determine whether the independent variables performance expectancy, effort expectancy, social influence, and facilitating conditions have a significant effect partially (separately) on the dependent variable, behavioral intentions. If the t value is greater than t table and the significance value of the variable is less than 0.05, then the variable is considered to have a significant effect on the dependent variable.

Table 5. T Test Results

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	Constant)	0,168	1,108		0,152	0,880
	PE	0,375	0,078	0,361	4,836	0,000
	EE	0,269	0,077	0,282	3,501	0,001
	SI	0,188	0,072	0,159	2,611	0,010
	FC	0,314	0,094	0,247	3,329	0,001

The results of hypothesis testing in Table 5 can be seen its significance compared to the standard value of 0.05, so that conclusions can be drawn as follows:

H_1 : Performance expectancy influences the user's behavioral intentions on the m-Payment use.

The test results show a significance value of 0,000, smaller than 0.05, so it can be concluded that H_1 is acceptable. The results of this hypothesis test support the previous studies Among the studies whose results are in line with this study are Min et al. (2008), Liébana-Cabanillas et al. (2014), and Camilleri (2019). Users who have high performance expectations can be considered to have a good perception of the m-Payment application. This can encourage opportunities for someone to use m-Payment.

Although most studies show the magnitude of the effect of performance expectations on interest in use, not all studies have the same results. Research by Mustaqim et al. (2018) regarding the acceptance of one e-commerce in the fashion sector shows that performance expectations do not significantly influence the use interest.

H_2 : Effort expectancy influences the user's behavioral intention towards the m-Payment use.

The test results show a significance value of 0.001, smaller than 0.05, so it can be concluded that H_2 can be accepted. The results of this study contradict the research of Magsamen-Conrad et al. (2015) who studied the acceptance of tablet PC technology where effort expectancy had no significant effect on behavioral intentions. However, the results of this hypothesis test are in line with other previous studies (Boonsiritomachai and Pitchayadejanant, 2017). Their research discusses the factors that influence the acceptance of m-Payment technology. If a technology can be easily learned how to use it, someone will be more motivated to use the system.

H_3 : Social influence influences the user's behavioral intention in the m-Payment use.

The test results show a significance value of 0.010, smaller than 0.05, so it can be concluded that H₃ is acceptable. Although study by Khechine et al. (2014) prove that social influence does not significantly influence the interest in using technology, several similar studies, such as Oliveira et al. (2016) gave the same results as this study; that social influence significantly influences the intention to use. Another study by Mustaqim et al. (2018) also shows that only social influence factors that have a significant effect on the emergence of the intention to use e-commerce. In the end, someone can be motivated to try something because of the influence of the people around him.

H₄: Facilitating conditions influence the user's behavioral intention towards the m-Payment use.

The test results show a significance value of 0.001, smaller than 0.05, so it can be concluded that H₄ is acceptable. The results contradict with Al-Qeisi et al. (2015) who studied the acceptance of internet banking technology in three middle eastern countries: Jordan, Saudi Arabia, and Egypt. The findings from Al-Qeisi's research prove that facilitating conditions do not significantly influence the interest in using the system. The same results were obtained in the study of Attuquayefio and Addo (2014) who studied the acceptance of information technology in elementary schools. However, research by Mustaqim et al. (2018) did not show the same results. These different results are probably caused by differences in the products that are the subject of research and the types of respondents chosen. Facilitating conditions have a significance influence on most studies. Someone will be more motivated to use technology that is easily accessible and has supporting facilities if they need help. Looking at the current condition of m-Payment and the results of this study, it can be concluded that the facilitating conditions indeed have a significant effect on the interest in using m-Payment.

The results of the calculation of the coefficient of determination in Table 6 show that the Adjusted R Square value of 0.696. This means that the independent variable is able to explain the dependent variable by 69.6%. While the remaining 30.4% can be explained by other variables not tested in this study.

Table 6. Coefficient of Determination

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842 ^a	0,708	0,696	1,369
a. Predictors: (Constant), TotalFC, TotalSI, TotalPE, TotalEE				

Referring to Table 5, the regression equation is obtained as follows.

$$Y = 0,168 + 0,375 \cdot (PE) + 0,269 \cdot (EE) + 0,188 \cdot (SI) + 0,314 \cdot (FC) + e$$

The regression equation explains that, for example if there is an increase in one unit of the PE variable and it is assumed other variables constant, then the Y value that reflects the intention in using m-Payment will increase by 0.375.

5. Conclusions

The results of this study explain that performance expectancy, effort expectancy, social influence and facilitating conditions affect the users' intention to use of m-payment. The results showed that the independent variables of UTAUT can be used to predict the users' interest in using m-Payment by 69.9 percent, while the remaining 30.4 percent is explained by other variables that are not covered in this study. Therefore, the next research is expected to be able to test these variables. In addition, further research can also examine moderation variables, such as age, gender and voluntary use of m-payment. Another limitation is there is a large difference in the number of respondents who live in Jakarta with respondents from other regions, which reached 55%. In other words, the sample used has the possibility of not being fully representative. Further research is expected to cover more cities in Indonesia, since there are different conditions, such as the quality of internet connection or the purchasing power.

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