

The Effect of Perceived Usefulness, Perceived Ease of Use, Social Influence on The Use of Mobile Banking through the Mediation of Attitude Towards Use

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Abstract

Mobile banking is one of the channels of banking service provided by banking institutions in forms of modern platforms that are fully based on digital technology and displace physical interaction between banks and their customers. For banking industry, mobile banking is more than a service option; it is a strategic plan to facilitate customer's changes in behavior. However, the acceptance of such platform by the public, particularly micro entrepreneurs, is still in question. The objective of this research is to identify factors influencing the use of mobile banking based on the perception of micro customers of Bank DKI in Surabaya. The variables used in this study were developed from previous researches that also examined the same matter with adjustment on the characteristics of micro customers. The variables, developed through the theoretical review, were then empirically assessed using SEM-PLS. The data was collected from questionnaires distributed to 266 micro customers who received financing from Bank DKI. The survey discovered that perceived usefulness, perceived ease of use, and social influence are empirically proven to have both direct effects on the use of mobile banking and indirect effects through attitude toward use. Practical implications also discussed in this paper.

Keywords

Mobile banking; perceived ease of use; attitude toward use; social influence; micro customer

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Introduction

As banking services are evolving along technological advancement (Bhatiasevi et al., 2015), mobile banking contributes to the improvement of life quality in terms of financial transactions through features meeting customer's needs such as money transfer, bill payment, and unlimited access

(Baptista & Oliviera, 2015). The increasing speed of information technology development in the digital banking era has urged banks to improve their services; M-banking is one of them.

Banking sector is changing, improving, and transforming toward the digital era, where the banking industry transformation

is the answer for the changes in people's behavior, which must be addressed quickly and accurately by industrial players to face the digital banking innovations (OJK, 2019).

The characteristics of mobile banking that can be used and accessed easily (through the use of menus available in application downloadable and installable by customers) are appealing for customers. digital service improvements are factors requiring Indonesian banks to consider digital technology as a part of their strategies. Most banking industry players, particularly the Regional Development Bank (Bank Pembangunan Daerah in Indonesian, abbreviated as BPD), has included digital initiatives as part of their corporate strategies (PWC, 2018)

Mobile banking technology connects millions of individual and organizational computer networks throughout the world. There are at least six reasons why mobile banking technology is so popular and beneficial for life in the digital era; they are broader connectivity and reach, lower communication cost, lower transaction cost, lower agency cost, interactive, flexible, and easy, and better ability in quickly distributing knowledge (Laudon and Laudon, 2000).

On the one side, the presence of this digital era is awaited and responded very well by the public and business actors, but on the other hand, the presence of this digital era also creates new problems or concerns among business actors, especially the micro business segment such as low education, micro business actors cannot apply it. digital technology into business activities, cyber crime phishing. Easiness in transaction has become an inhibitor for micro, small, and medium-sized business, making them fall behind e-commerce. The sustainability and the future of micro enterprises can be seen through to what extent they are able to respond to the presence of the digital era and how they use the existing technology; which is

unfortunate that some micro entrepreneurs are not familiar with digitalization and are still comfortable with the conventional way of banking transactions, caused by technological illiteracy (OJK, 2019). If the constraints faced by micro entrepreneurs are not immediately dealt with seriously, then facing future competition will raise concerns for the sustainability of micro entrepreneurs in the Greater Surabaya area in particular and Indonesia in general. To help improve the marketing of digital banking services, which is reflected in the use of mobile banking, starting from the identification of factors that influence micro-entrepreneurs using mobile banking, this research was conducted.

Indonesian MSME has had a considerable contribution to the state's gross domestic product, recorded IDR 8,573.9 trillion or 57.8% in 2019. Furthermore, their market share is 99.9% (64,194,054 business units), incomparable with major business of 0.01% (5400 business units) in Indonesia (BPS, 2019). The former absorbs 97% of the national workforce, leaving the remaining 3% for the major business. The two facts above signify the role of MSME, particularly the micro ones, for Indonesian economy.

To help micro entrepreneurs respond to the digital era, financial inclusion is required so that they are able to take benefit from mobile banking and to improve their business sustainability (Kishore & Siqueira, 2016). This study was conducted to help micro entrepreneurs improve their access to digital banking by first identifying factors influencing their perception about mobile banking. Bank customers categorized as micro-business owners were selected as the research subject based on several considerations. First, they belong to the supporting sector of Indonesian economy (OJK, 2019). Second, learning and identifying their opinion based on their reactions to and interactions with current digital banking services are crucial for understanding their experience

and their impact for the future development of micro enterprise.

Literature Review

Grand Theory: Technology Acceptance Model (TAM)

Mobile banking is the latest banking platform this does not need any physical encounter between banks and their customers. Physical branch offices are now decreasing in their role and function. Bank service paradigm is shifting from tangible and intangible, so the use of Technology Acceptance Model (TAM) approach is very appropriate. The model was introduced by Davis in 1982, a theory specialized for modelling user’s acceptance to technology, that is a theory

of reasoned action with a view that people’s reaction and perception about certain matters will determine their attitude and behavior (Davis, 1989). One of TAM’s theory, i.e. actual system usage, is mostly influenced by behavioral intention toward usage, which is affected by two beliefs: perceived usefulness and perceived ease of use.

Mobile Banking

Mobile banking is a safe, reliable, cheap, highly accessible, and easy banking platform application. In short, the difference between digital banking and the previous conventional platform is presented in Table 1.

Table 1. Characteristics Differences between Digital Banking and the Previous Era

	Conventional	Digital Banking
Transaction Place	Bank	Online
Physical Encounter	Mandatory	Not necessary
Infrastructure	Computer at the back office	Open application
Distribution	Physical	Digital
Transaction Instrument	Saving account book, ATM, written transfer order, cheque	Smartphone
Verification Instrument	Signature, saving account book, written transfer order, cheque	PIN, Finger Print, OTP (one-time password)

Note: compiled from various sources, 2019

Micro Entrepreneurs

The term micro enterprise in this research refers to Law number 20 of 2008. MSME are productive ventures owned by individuals and/or individual business entity with the net value of IDR 50 million at the most excluding land and business place or IDR 300 million of annual sales at the maximum. The specific objects of this research are the micro customers of Bank DKI branch of Surabaya who have received loan from IDR 100-500 million. Loan for micro enterprises is different

from the loan for larger business as the loan value is smaller, does not require asset-based collateral, applicable for businesses with simpler operation (Kimotho, 2005), applicable for marginalized lender groups, and is generally using group approach (Igbenidon and Igbatayo, 2004). The purpose of this loan is to empower micro enterprises or their group in running their business for optimal success in improving their living standard and to contribute to the development and the well-running of public organization. Loan for micro

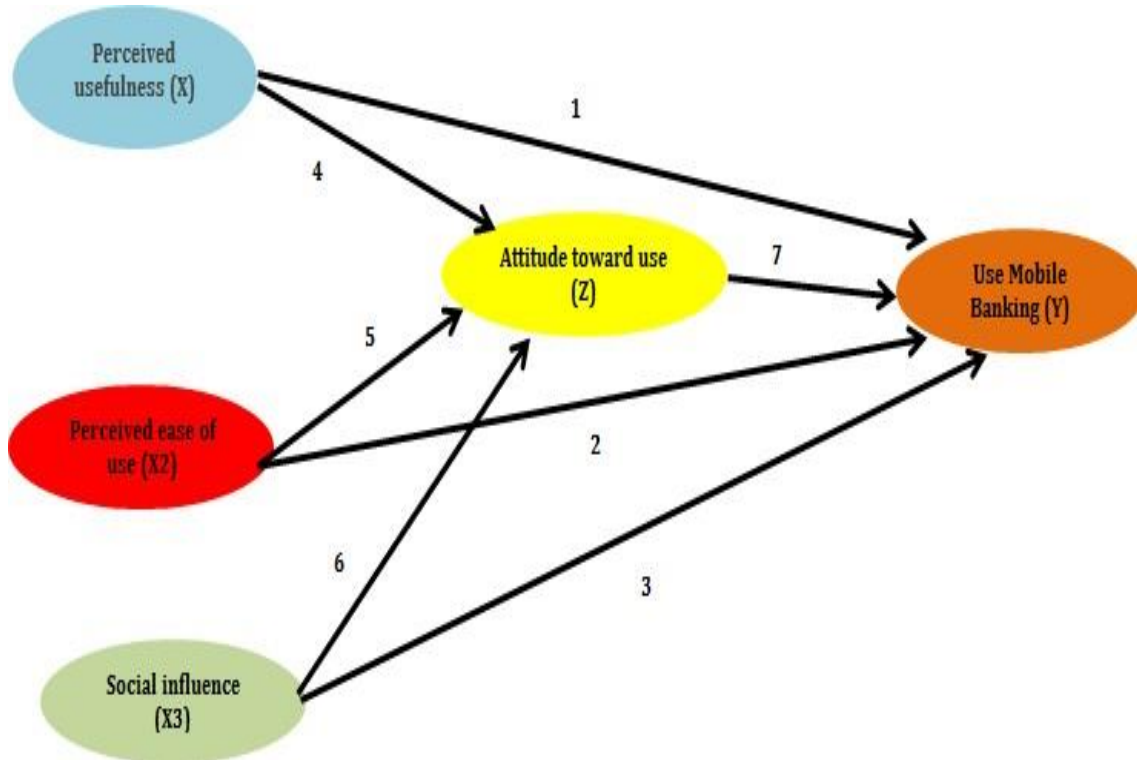
customers is designed to increase the capacity of people who are economically in middle to low level, active participating in larger economy, and operating in informal sector such as trade, agriculture, catering, etc.

The Use of Mobile Banking

Customer experience related to benefit and usefulness explains that the most important construction in studies explaining behavioral intention for using mobile banking is the influence of perceived ease of use, perceived usefulness, trust, and social influence (Malaquias et al., 2018). Experts have studied the dimensions of digital banking usage; they are quality of internet connection, trust, resistance to change, self-efficacy, gender (Al-Somali et al. (2009), trust, perceived cost of use, perceived risk, need for personal interaction, credibility, compatibility with lifestyle and needs (Hanafizadeh et al.,

2014), perceived enjoyment, information on online banking, security and privacy, and quality of internet connection (Pikkarainen et al., 2004). As the findings differ, there is no consensus between experts, opening more research opportunities particularly in the context of micro enterprise.

The factors that encourage the use of mobile banking based on the perceptions of micro business actors are obtained by constructing the mobile banking usage variables from previous studies which are adjusted to the characteristics of micro business actors. Figure 1 explains that the use of mobile banking among micro entrepreneurs is built theoretically, namely perceived usefulness, perceived ease of use, social influence and attitude toward use, which is then tested to prove this point of view:



Perceived Usefulness

Davis (1989) defined perceived usefulness as the extent to which person believes that

the use of certain information system, will improve his performance. Perceived usefulness is a factor that explains the use of mobile banking services. Customers use

mobile banking by considering the benefit that they can get from using the service compared to the benefit from using other banking transaction channels (Pikkarainen, 2004; Lisa Wessels, 2010; Malaquias et al., 2018). Therefore, perception about the benefit of usage is expected to have a direct effect on customer's attitude through perceived usefulness. In order to prove such notion, the following hypothesis will be tested.

H1: Perceived Usefulness (PU) directly influences the use of Mobile Banking

Perceived Ease of Use

Perceived ease of use refers to the level of user's willingness to use a system where he does not need to make any effort (Davis et al., 1989). It is not only considered as an important factor for the adoption of technology but also for the long-term use of the technology (Hanafizadeh et al., 2014). Researchers believe that the higher the perceived ease of use of a technology, the higher the possibility of the platform to be used. The opinion will be assessed using the following hypothesis.

H2: *Perceived Ease of Use (PEOU)* directly influences the use of mobile banking

Social Influence

Social influence considers that a person feels the importance of other people's opinion about his need to use available systems (Venkatesh et al., 2003). Family and friendly bond are also influential for individual's decision (Sharma et al., 2017). Venkatesh and Davis (2000) observed the inter-related effect social influences such as subjective norm, voluntariness, and image are relevant to increase understanding related to intention to use and to perceived usefulness. Therefore, in relation to mobile banking, the researcher believes that social influence affects the use of mobile banking. To prove the opinion, the following hypothesis will be tested.

H3: Social Influence directly influences the use of mobile banking

Attitude toward use

According to Wessels (2010), Suh & Han (2002), Al-Somali et al. (2009), and Mohammadi (2015), perceived usefulness, perceived ease of use, social influence, and profile demography can influence attitudes and beliefs in the decision to use an information system, in this case mobile banking. The researcher believes that perceived usefulness affects a person's intention to use a platform based on considerations of the benefits he will receive and that intention is also directly influenced by perceived ease of use. Therefore, if most people in an environment or community are already using a platform, someone will be encouraged to use that platform. In the end, this intention will influence him to use mobile banking. Therefore, the following hypotheses were proposed.

H4 : Perceived Usefulness directly affects Attitude Toward Use

H5: Perceived Ease of Use directly affects Attitude Toward Use

H6: Social influence directly affects Attitude Toward Use

H7: Attitude toward use affects the Use of Mobile Banking

H8 : Perceived usefulness affects the Use of Mobile Banking through Attitude Towards use

H9: Perceived Ease of Use affects the Use of Mobile Banking through Attitude Towards Use

H10: *Social influence* affects the Use of Mobile Banking through *attitude towards use*

Research Method

The research data were harvested through a Google Form questionnaire, which was preceded by a pilot test. Content validity was checked through discussions with a banking expert, a research practitioner, and an academic to ensure the completeness of the questionnaire item, including its clarity.

The research was carried out on micro customers of the DKI Surabaya Branch in the City of Surabaya Raya (Surabaya, Gresik, Sidoarjo) - Indonesia, as for the consideration of the selection because MSMEs in Indonesia contribute quite a lot to gross domestic product (GDP). In 2019, it was recorded that MSMEs contributed up to 57.8% of GDP. The second reason is the ability to absorb the workforce of around 97% of the national workforce. These two criteria show the very important role of MSMEs, especially micro-enterprises for the Indonesian economy. This research was conducted in October 2020. A total of 40 respondents were involved in the pilot test. Pearson's correlation value is between 0.888 and 0.990 (meeting the criteria of >0.50), and the Cronbach's alpha value is between 0.948 and 0.995 (fulfilling the criteria of ≥ 0.70) (Ghozali, 2014). It can be concluded that the questionnaire has good validity and reliability, so the main questionnaire is feasible to be distributed to the target respondents.

Based on the results of the pilot test above, the main questionnaire was distributed to 266 respondents. Partial least squares with three-step analysis, namely the outer

model, inner model, and hypothesis test, were used to analyze the data. The outer model was used to describe the relationship between indicator blocks and their latent variables through testing to three indicators: convergent validity, discriminant validity, and unidimensionality. Then, Inner model was used to predict the causal relationship between latent variables or to test the hypotheses. This model uses three indicators: coefficient of determination (R^2), predictive relevance (Q^2), and Goodness of Fit Index (GoF). The third step is hypothesis testing. In this research the confidence level is set to 95%. A 5-point Likert scale was used; 1 for strongly disagree, and 5 for strongly agree.

Discussion

Respondent's Profile

The demographic profile of the respondents is as follows. Seventy percent of the respondents are males, 45% of them are between 41-50 years old, 96% are married, 65% are high school graduates. They are micro credit customers. A more comprehensive demographic profile is shown in Table 1.

Table 1. Respondent Profile and Frequency Information

Demographic Profile	Criteria	Frequency	Percentage
Gender	Female	88	31.1
	Male	195	68.9
Age	20-30 years	13	4.6
	31-40 years	50	17.7
	41-50 years	127	44.9
	51-60 years	79	27.9
	61-70 years	14	4.9
Marital Status	Single	10	3.5
	Married	273	96.5
Educational level	primary school	17	6
	Junior High School	38	13.4
	Senior High School	184	65
	University	44	15.5
	Postgraduate	0	0
Business Sector	Services	68	24
	Trading	208	73.5
	Manufacture	5	1.8
	Primary Processing	2	0.7
Bank DKI Customers	Yes	283	100
	No	0	0
Credit limit owned	< 100 million up to 200 million	79	27.9
	> 200 million up to 300 million	98	34.6
	> 300 million up to 400 million	42	14.8
	> 400 million up to 500 million	64	22.6
Length of Becoming a Bank DKI Customer	< 1 years	15	5.3
	1 years up to < 4 years	231	81.6
	4 years up to < 6 years	29	10.2
	6 years up to 9 years	8	2.8
have used the Mobile Banking application before	Yes	190	67.1
	No	93	32.9
Have you used the Jakone Mobile application before	Yes	176	62.2
	No	107	37.8
If you have been using it, how long has it been	< 1 years	134	47.3
	1 up to 2 years	116	41
	> 3 years	33	11.7

Outer Model Evaluation

The outer model evaluation was done by testing the convergent and discriminant validity of each item. Convergent analysis was tested using the outer loading, which is said to be valid if the value of each item is above 0.7 and the Average Variance Extracted (AVE) score is above 0.5 for each construct (Hair et al., 2014). The test results show that the outer loading is between 0.886 and 0.948 and that the AVE value is between 0.843 and 0.890. The results of the outer model test are shown in Table 2. The second step is testing the discriminant validity. A model is said to meet the criteria if the square root of AVE is greater than the correlation between constructs (Fornell and Larker, 1981). Table 3 shows the comparison between the root square AVE (in parentheses) and the correlation with other constructs. The results prove that the model in this study does not have any discriminant validity problem.

Inner Model Evaluation

The test is the inner model evaluation, which is done by examining the coefficient of determination (R^2), predictive relevance (Q^2), and GoF. Based on the PLS

estimation, the coefficient of determination (R^2) for attitude towards use and the use of mobile banking is between 0.880 and 0.871. According to Chin et al. (2008), with the coefficient of determination categorized into three classes, namely 0.19 (weak), 0.33 (moderate), and 0.67 (substantial), the attitude towards use and the use of mobile banking is substantial. The second inner model test was performed using the Stone-Geisser predictive relevance test (Q^2), which explains how to measure the level of observation values restructured by the model and its parameters (Chin, 2010). An endogenous construct has a predictive relevance if its Q^2 is greater than 0 (Hair et al., 2014). In this study the Q^2 is between 0.745 and 0.729. As the values of Q^2 are greater than 0, all constructs have the predictive relevance. The third inner model test uses GoF. A GoF value of 0.10 is considered small, while a GoF value of 0.25 is considered moderate, and 0.36 is considered large. In this study the GoF value is 0.865, considered to be large. Based on the evaluation of R^2 , Q^2 , and GoF, it can be concluded that the proposed structural model is robust, so hypothesis testing can be carried out.

Table 2. Outer Loading, AVE, Composite Reability

Variable	indicator	Item	Outer Loading	AVE	CR
Attitude Towards (ATT)	ATT1.1	intention	0.922	0.925	0.976
	ATT1.2		0.919		
	ATT2.1	Individual salient beliefs	0.918		
	ATT2.2		0.933		
	ATT3.1	User assesment of the desire to use certain information system application	0.925		
	ATT3.2		0.924		
	ATT4.1	the number of affections (feelings) that a person feels to accept or reject an object	0.933		
Perceived ease of use (PEOU)	PEOU1.1	Interactive	0.912	0.922	0.972
	PEOU1.2		0.921		
	PEOU2.1	Easy to learn	0.917		
	PEOU2.2		0.930		
	PEOU3.1	User friendly	0.929		
	PEOU3.2		0.925		
Perceived usefulness (PU)	PU1.1	Service	0.914	0.911	0.980
	PU1.2		0.923		
	PU2.1	Benefit	0.910		
	PU2.2		0.904		
	PU2.3		0.920		
	PU2.4		0.909		
	PU2.5		0.914		
	PU3.1	Efisien	0.911		
	PU3.2		0.914		
	PU4.1	Efektif	0.894		
Social Influence (SI)	SI1.1	Referensi	0.943	0.943	0.960
	SI2.1	Self Confidence	0.939		
	SI2.2		0.948		
Use mobile banking (UMB)	UMB1.1	Fiture	0.938	0.918	0.974
	UMB1.2		0.934		
	UMB1.3		0.886		
	UMB1.4		0.899		
	UMB2.1	Future financial transaction	0.928		
	UMB2.2		0.927		
	UMB2.3		0.912		

Table 3. The comparison between Square Root of AVE and Correlations

	ATT	PEOU	PU	SI	UMB
ATT	0.925				
PEOU	0.870	0.922			
PU	0.900	0.837	0.911		
SI	0.898	0.848	0.866	0.943	
UMB	0.917	0.865	0.876	0.877	0.918

Hypothesis Testing

Hypotheses 1 to 4 state that perceived usefulness, perceived ease of use, social influence, and attitude towards use directly affect the use of mobile banking, while hypotheses 5, 6, and 7 state that perceived ease of use and social influence have a direct effect on attitude towards use, and hypotheses 8, 9, and 10 state that perceived ease of use and social influence indirectly affect the use of mobile banking through attitude towards use. The acceptance or

rejection of this research's hypothesis is based on the value of t-distribution table (two tails), namely 1.96 with a significance level of 0.05. The PLS scores indicate that all t-statistics are lower than 1.96 with p values of lower than 0.05, and a confidence interval of 95%. The conclusion is that the results support hypotheses 1 to 10. A summary of the hypothesis testing is shown in Tables 4 and 5.

Table 4. Hypothesis test

Hypothesis	Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
H1	PU -> UMB	0.163	0.158	0.081	2.003	0.046
H2	PEOU -> UMB	0.197	0.203	0.098	2.014	0.045
H3	SI -> UMB	0.159	0.151	0.075	2.112	0.035
H4	PU -> ATT	0.387	0.384	0.079	4.893	0.000
H5	PEOU -> ATT	0.246	0.252	0.071	3.465	0.001
H6	SI -> ATT	0.354	0.352	0.069	5.167	0.000
H7	ATT -> UMB	0.457	0.463	0.117	3.908	0.000

Table 5. Hypothesis test

Hypothesis	Factor/Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
H8	PU -> ATT -> UMB	0.177	0.178	0.062	2.860	0.004
H9	PEOU -> ATT -> UMB	0.112	0.116	0.044	2.546	0.011
H10	SI -> ATT -> UMB	0.162	0.162	0.050	3.232	0.001

Conclusion

The main purpose of this research is to answer problems that have been constructed systematically in the research questions. Based on existing theories and assumptions that have been made as well as empirical data that has been collected, research results and implications were identified and will be explained in this section.

Perceived usefulness with its three indicators, namely service, benefits, efficiency, and effectiveness, directly affects the use of mobile banking. The results of this study support the findings of Tan and Teo (2000) that perceived usefulness is an important factor in innovation adaptation. Bhattacharjee (2002) found that the willingness of individuals to use a particular system for their transactions depends on their perception of its use. Koenig-Lewis et al. (2010) investigated the effect of perceived risk on the intention to use M-banking and found a positive relationship between perceived usefulness and the use of mobile banking. Venkatesh and Davis (2000) and Agarwal and Karahanna (2000) suggested that perceived usefulness and perceived ease of use have direct and indirect effects on behavioral intentions.

Perceived ease of use with its three indicators, namely interactive, easy to learn, and user friendly, directly affects the use of mobile banking. Perceived ease of use has been very well established, and mobile banking is convenience, easy to learn, and easy to use. Its features are easier to use than the features of other banking platforms. This result supports the finding that perceived ease of use has a positive effect on the use of mobile banking (Gu et al., 2009; Hanafizadeh et al., 2014; Lin, 2011; Luarn & Lin, 2005); perceived ease of use has a positive effect on the use of mobile banking (Gu et al., 2009). The result is also in line with the findings of Baptista & Oliveira (2015),

Oliveira et al. (2014), Yuan et al. (2014), and Zhou et al. (2010) that ease of use has a significant effect on the use of mobile banking. The results of this study refute the findings of Pikkarainen et al. (2004) that there is no significant positive relationship between perceived ease of use and the use of mobile banking in Finland.

Social influence with its inherent attributes, namely references and self-confidence, has a positive effect on the use of mobile banking, which means that the more recommendations from the surrounding environment (family, colleagues, etc.) the stronger the social influence for someone to use mobile banking. Based on the outer loading value, self-confidence is the strongest in reflecting social influence. This is relevant with the circumstances of micro customer. They feel that mobile banking is irrelevant with their characteristics, having small business and low education level. The finding supports that action intensity in social influence increases a person's willingness to use mobile banking (Alalwan et al., 2017). It is also similar with the finding of Malaquais et al. (2018) that social influence has a significant relationship with the use of mobile banking in the US and Brazil.

Attitude towards use in this study is measured using three indicators: individual salient beliefs, user assessment of the desire to use a certain information system application, and the number of affections (feelings) that a person feels to accept or reject an object. Based on the outer loading values, individual salient beliefs are the strongest in reflecting attitude toward use with the statement of "I believe that JakOne Mobile can keep the security of my banking transactions". This implies that the greater the perception of micro customers about the level of security of mobile banking, the higher their confidence. This is in accordance with the characteristics of micro customers, which is technologically illiterate, which makes security as the first consideration in

choosing a mobile banking service. This finding supports the results of Suh & Han (2002) that attitude toward use affects the use of online banking. This is also in line with Al-Somali et al. (2009), who examined randomly selected 400 respondents in Saudi Arabia, that attitude towards use has a significant effect on the use of mobile banking.

Perceived Usefulness affects attitude towards use. This means that the higher the perception of benefits felt by customers on mobile banking services can affect the attitude of using mobile banking. The findings of this study are in line with several previous studies that have been conducted by previous researchers, namely research conducted by Al-Somali et., Al (2010) which states that there is a strong relationship and influence between perceived usefulness towards attitude towards. Research conducted by Nasri (2012), Tan et al. (2011) and Kim et al. (2010) examined an empirical investigative study of the acceptance of the use of mobile internet banking technology. Based on this study, the results show that perceived usefulness has a positive and significant effect on attitude toward using internet banking use.

Perceived ease of use with its attributes, namely interactive, easy to learn, user friendly, has an effect on attitude towards use. This shows that the higher the perceived ease of being felt by customers for mobile banking services can affect a person's attitude towards the use of mobile banking. The ease of learning about the mobile platform will be a consideration for customers to switch from conventional services (coming to the bank) to becoming mobile banking services (without face to face) so as to give a positive impression and increase customer loyalty. The ease of learning provides an important contribution for customers to determine customer attitudes in using a mobile banking platform. The results of this study can support previous research which states that perceived ease of use has a positive

effect on attitude towards use Al-Somali et al. (2009); Suh & Han (2002). The same study was also studied by Chau and Lai (2003) which showed that perceived ease of use was positively related and had a significant effect on attitude toward using internet banking use.

Social influence and its attributes, namely reference and self-confidence, have a significant influence on attitude towards use. This shows that the stronger the social influence given by the surrounding environment is able to increase the use of mobile banking, which means that the more recommendations from the surrounding environment (family, colleagues, etc.), the higher the social influence will affect a person's attitude. The indicator of self-confidence has the highest value in reflecting the social influence variable. This is in accordance with the condition of micro customers who have doubts that the mobile banking platform is not in accordance with the characteristics of micro customers who have small-scale businesses, with a low level of education. someone to use mobile banking (Alalwan et al., 2017) ;. This study is in line with the results of research conducted by Malaquais et. al., (2019) on the use of mobile banking in the US and Brazil, where it is stated that social influence has a significant relationship with attitude towards use.

Attitude toward use is proven to play a role as a mediating variable between perceived usefulness for mobile banking use. This shows that attitude toward use is strong enough to influence customers to use mobile, which is very important in determining attitudes toward using mobile banking. This study is in line with the results of Suh & Han (2002) in his research "Effect of trust on customer acceptance of Internet banking" that the most dominant variable in the intention to use mobile banking is driven by trust. This happens because trust that refers to a security system has been very well established in the minds of customers, with

a feeling of security and protection of their transactions and personal data from the risk of virtual crime and cyber-attacks.

Attitude toward use is proven to act as a mediating variable between perceived ease of use on mobile banking use. This shows that attitude toward is very important in improving attitudes to using mobile banking. It is proven that banking continues to innovate to provide convenience and provide a user friendly interface so that customers are increasingly interested in using mobile banking. This study is in line with the Sabah results. et., al (2009) who found a strong influence between Perceived Ease Of Use on Use Mobile Banking through Attitude Towards Use.

attitude toward use has a role as a mediating variable between Social Influence on mobile banking use. This shows that attitude toward is very important in increasing the intention to use mobile banking. It is proven that the more recommendations from the surrounding environment (family, colleagues, etc.), the higher the social influence will affect a person's intention. This study is in line with the results of Sabah.et., Al (2009) who found a strong influence between Social Influence on Use Mobile Banking through Attitude Towards Use.

This research is in line with the condition of banks with the status of BUMN both in Indonesia and abroad, that digital development is a challenge for the banking industry, but awareness and readiness of resources are needed to face change. The demands of the external environment require immediate adaptation of existing resources in banking. The development of information technology and the demands of the public for an application as well as an increase in smartphone specifications and sophistication require banking institutions to make adjustments to their mobile banking applications. This adjustment allows users to evaluate the use of mobile banking according to their preference for perceived usability,

perceived convenience, social influence, such as previous research conducted by Mufarih, et., Al (2020); Liu et., Al (2011); shaykh et al (2017); andrade et., al (2016); alalwan et., al (2017).

Limitations and Future Research

This study uses a questionnaire distributed through a WhatsApp group. There are problems that commonly occur with questionnaires, i.e. low response rates and low anonymity (Ritter & Sue, 2007). This study uses closed-ended questions that limit participants' responses, in that their answers did not fully reflect their opinions. This research can be further developed by the use of mixed method, namely by interviewing bankers (heads of branch offices, heads of division heads, etc.), regulators (OJK & BI), and customers so that their opinions can be compared to get more comprehensive results.

The sample of this study was selected using the purposive method, from which data can be collected at low cost yet hindering the representativeness of respondent groups. Even though the target respondents have been divided into three groups, their response rates were not the same. The proportion of the three groups is also difficult to know; although based on the latest education and age and type of business it can be predicted that the middle-aged group is the largest group responding to the questionnaire. Using the same method, this study can produce different results if the proportion of the respondent group is different. For example, micro-entrepreneurs who are not married who inherited a family business, with financial supports from their parents, may have a lower risk appetite than the middle-aged people who are married and have limited amount of funds.

This study is still demographically limited to Surabaya area and the surroundings. Using online method, this survey could have been carried out in a

larger area with a larger sample size. This study was not conducted so due to limited time and resources.

The conceptual framework of this research can also be applied by people engaged in banking businesses by optimizing their customer databases to develop marketing strategies that can increase the use of mobile banking. This framework is useful for predicting future use of mobile banking, and it can be adopted, replicated, or applied to other financial businesses such as pawnbroking, finance, and insurance companies. Most companies in the three businesses still carry out their activities conventionally. If they do not immediately develop digital services, they might be left behind. It opens up opportunities for further researches to develop other dimensions.

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References

- Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun cognitive absorption and beliefs about information technology usage. *MIS Quarterly*, 24(4), 665–694.
- Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*, 37(3), 99–110.
- Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, 19(2), 130–141.
- Anol Bhattacherjee (2002) Individual Trust in Online Firms: Scale Development and Initial Test, *Journal of Management Information Systems / Summer*, 19, (1), pp. 211–241
- Baptista, G., & Oliveira, T. (2015). Understanding Mobile Banking: The unified theory of acceptance and use of technology combined with cultural moderators.

- Computers in Human Behavior, 50, 418–430.
- Bhatiasevi, V. (2015). An extended UTAUT model to explain the adoption of mobile banking Information Development, 1–16 Published online before print.
- Chin, W. W. (2000). Frequently asked questions – Partial Least Squares & PLS- Graph. Home page [online]. Last update: 21 December 2004. Available at: <http://discnt.cba.uh.edu/chin/plsfaq/plsfaq.htm>.
- Chin, W. W. (2010). How to write up and report PLS analyses. In Handbook of partial least squares (pp. 655–690). Springer, Berlin, Heidelberg.
- Chin, W. W., Peterson, R. A., & Brown, S. P. (2008). Structural equation modelling in marketing: Some practical reminders. *Journal of Marketing Theory and Practice*, 16(4), 287–298. doi:10.2753/MTP1069-6679160402
- Ching Mun C., Aik Chuan T., Jia Jia S, Kam H. O. & B. I. Tan. (2011) Factors Affecting Malaysian Mobile Banking Adoption: An Empirical Analysis *International Journal of Network and Mobile Technologies*, 2(3), ISSN 2229-9114 Electronic Version September 2011.
- Chau, P. Y. K., & Lai, V. S. K. (2003). An Empirical Investigation of the Determinants of User Acceptance of Internet Banking. *Journal of Organizational Computing and Electronic Commerce*, 13(2), 123–145.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Dwivedi, Y. K., Kapoor, K. K., Williams, M. D., & Williams, J. (2013). RFID systems in libraries: An empirical examination of factors affecting system use and user satisfaction. *International Journal of Information Management*, 33(2), 367–377.
- Dwivedi, Y. K., Shareef, M. A., Simintiras, A. C., Lal, B., & Weerakkody, V. (2016). A generalised adoption model for services: A cross-country comparison of mobile health (m-health). *Government Information Quarterly*, 33(1), 174–187.
- Dwivedi, Y. K., Rana, N. P., Janssen, M., Lal, B., Williams, M. D., & Clement, M. (2017). An empirical validation of a unified model of electronic government adoption (UMEGA). *Government Information Quarterly*, 34(2), 211–230.
- Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2017). Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model. *Information Systems Frontiers*, 1–16.
- Gu, J.-C., Lee, S.-C., & Suh, Y.-L. (2009). Determinants of behavioral intention to mobile banking. *Expert Systems With Applications*, 36, 11605–11616.
- Ha, K.-H., Canedoli, A., Baur, A. W., & Bick, M. (2012). Mobile banking—Insights on its increasing relevance and most common drivers of adoption. *Electronic Markets*, 22(4), 217–227.
- Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th edition). Prentice-Hall, Inc.
- Hanafizadeh, P., Behboudi, M., Abedini Koshksaray, A., & Jalilvand Shirkhani Tabar, M. (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*, 31(1), 62–78.

- Igbinedion, O. J. and A. S. Igbatayo (2004), "Micro Credit and Poverty Reduction in Sub-Saharan Africa: Challenges and Policy Framework in Nigeria". *Nigeria Journal of Business Administration*, 6(2), pp. 15-35.
- Kenneth C. Laudon; Jane P. Laudon, (2000), *Management Information Systems, organization and Technology in The Networked Enterprise*, Prentice-Hall, New Jersey, USA.
- Ketterer, J., A., Andrade., G (2016) Digital Central Bank Money and the Unbundling of the Banking Function Institutions for Development Sector, Capital Markets and Financial Institutions Division , Discussion Paper No. No IDB-DP-449
- Kimotha, M. (2005), National Micro Finance Policy Framework and its Expected Impact on the Micro Finance Market in Nigeria. CBN Seminar to Mark the International Year of Micro Credit in Nigeria, 15-16 December, Abuja.
- Kishore, S. V. K., & Sequeira, A. H. (2016). An empirical investigation on mobile banking service adoption in rural Karnataka. *Sage Open*, (January-March), 1–21.
- Koenig-Lewis, N., Palmer, A. and Moll, A. (2010), "Predicting young consumers' take up of mobile banking services", *International Journal of Bank Marketing*, 28(5), pp. 410-432.
- Kim, C., Tao, W., Shin, N., & Kim, K.-S. (2010). An empirical study of customers' perceptions of security and trust in e-payment systems. *Electronic Commerce Research and Applications*, 9(1), 84–95.
- Mufarih, M., Jayadi, R., & Sugandi, Y. (2020). Factors Influencing Customers to Use Digital Banking Application in Yogyakarta, Indonesia. *The Journal of Asian Finance, Economics and Business*, 7(10), 897–907.
- Lee, K. C. & Chung, N. (2009). Understanding Factors Affecting Trust in and Satisfaction with Mobile Banking in Korea: A Modified DeLone and McLean's model perspective. *Interacting with Computer*, 21(5/6), 385-392.
- Lin, H.-F. (2011). An empirical investigation of mobile banking adoption: The effect of innovation attributes and knowledge-based trust. *International Journal of Information Management*, 31, (252–260).
- Lin, H.-F. (2013). Determining the relative importance of mobile banking quality factors. *Computer Standards & Interfaces*, 35(2), 195–204.
- Liu, D., Chen, S. and Chou, T. (2011), "Resource fit in digital transformation: Lessons learned from the CBC Bank global e-banking project", *Management Decision*, 49(10), pp. 1728-1742
- Luarn, P., & Lin, H.-H. (2005). Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior*, 21, 873–891.
- Malaquias, R. F., & Hwang, Y. (2019). Mobile banking use: A comparative study with Brazilian and U.S. participants. *International Journal of Information Management*, 44, 132–140.
- Martins, C., Oliveira, T. & Popovic, A. (2014). Understanding the Internet Banking Adoption: A Unified Theory of Acceptance and Use of Technology and Perceived Risk Application. *International Journal of Information Management*, 34(1), 1-13.
- Mohammadi, H. (2015). A study of mobile banking loyalty in Iran. *Computers in Human Behavior*, 44, 35–47.
- Nasri, W., & Charfeddine, L. (2012). Factors affecting the adoption of

- Internet banking in Tunisia: An integration theory of acceptance model and theory of planned behavior. *The Journal of High Technology Management Research*, 23(1), 1–14.
- Oliveira, T., Faria, M., Thomas, M. A., & Popovič, A. (2014). Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM. *International Journal of Information Management*, 34, 689–703.
- Otoritas Jasa Keuangan (OJK), (2019). Booklet Perbankan Indonesia, Jakarta, Indonesia.
- Pikkarainen, T., Pikkarainen, K., Karjaluoto, H. and Pahlila, S. (2004), "Consumer acceptance of online banking: an extension of the technology acceptance model", *Internet Research*, Vol. 14 No. 3, pp. 224-235.
- Price Waterhouse Coopers (PWC), (2018). Digital Banking in Indonesia, Jakarta, Indonesia.
- Ritter, L. A., & Sue, V. M. (2007). *Introduction to using online surveys. New Directions for Evaluation*, 2007(115), 5–14.
- Sharma, S. K. (2017). Integrating cognitive antecedents into TAM to explain mobile banking behavioral intention: A SEM-neural network modeling. *Information Systems Frontiers*, 1–13.
- Sharma, S. K., Gaur, A., Saddikuti, V., & Rastogi, A. (2017). Structural equation model (SEM)-neural network (NN) model for predicting quality determinants of e-learning management systems. *Behaviour & Information Technology*, 36(10), 1053–1066.
- Shaikh, A. A., Glavee-Geo, R., & Karjaluoto, H. (2017). Exploring the nexus between financial sector reforms and the emergence of digital banking culture – Evidences from a developing country. *Research in International Business and Finance*, 42, 1030–1039.
- Suh, B., & Han, I. (2002). Effect of trust on customer acceptance of Internet banking. *Electronic Commerce Research and Applications*, 1(3-4), 247–263.
- Tan, Margaret and Teo, Thompson S.H. (2000) "Factors Influencing the Adoption of Internet Banking," *Journal of the Association for Information Systems*, 1 (1) , Article 5.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204.
- Venkatesh, V., & Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS Quarterly*, 24(1), 115–139.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.
- Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, 11(4), 342–365.
- Wessels, L. and Drennan, J. (2010), "An investigation of consumer acceptance of M-banking", *International Journal of Bank Marketing*, 28 (7), pp. 547-568.
- Yuan, S., Liu, Y., Yao, R., & Liu, J. (2014). An investigation of users' continuance intention towards mobile banking in China. *Information Development*, 32(1), 20–34.
- Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, 26, 760–767.

