

Analysis Of Factors Affecting Customers In Using Mobile Banking Application: The Case Of Mobile Banking In Jakarta

Pinkyvi Tiffany Widajanto¹, Nilo Legowo²

^{1,2} Information Systems Management Department Binus Graduate Program

Master of Information Systems Management, Bina Nusantara University, Jakarta, Indonesia

Email : ¹pinkyvi.widajanto@binus.ac.id, ²nlegowo@binus.edu

Abstrak

Penelitian ini dilatarbelakangi oleh meningkatnya transaksi digital dan semakin banyaknya bank yang meluncurkan aplikasi mobile banking untuk membantu mempermudah aktivitas keuangan sehari-hari nasabahnya. Dengan menggunakan metode Technology Acceptance Model (TAM), penelitian ini bertujuan untuk mengetahui analisis faktor-faktor yang mempengaruhi penggunaan aplikasi mobile banking. Metode TAM digunakan karena sesuai dengan tujuan penelitian dan dapat menjelaskan pengaruh faktor-faktor yang berhubungan dengan penerimaan aplikasi mobile banking. Faktor-faktor yang akan diteliti dalam penelitian ini meliputi persepsi kegunaan, persepsi kemudahan penggunaan, persepsi keamanan, dan branding. Penelitian ini dilakukan terhadap 400 responden yang merupakan nasabah salah satu bank di wilayah Jakarta dan telah menggunakan aplikasi mobile banking baru dari bank tersebut. Dari hasil penelitian ini akan diperoleh hasil yang menggambarkan apakah usability, convenience, security, dan brand image berpengaruh positif dan signifikan terhadap penggunaan mobile banking. Hasil penelitian ini diharapkan dapat membantu perbankan dalam meningkatkan pelayanannya ditinjau dari keempat faktor tersebut.

Kata Kunci: *Branding, Kemudahan Penggunaan yang Dirasakan, Kegunaan yang Dirasakan, Keamanan yang Dirasakan, Mobile Banking*

Abstract

This research is motivated by the increase in digital transactions and more and more banks launching mobile banking applications to help facilitate their customers' daily financial activities. By using the Technology Acceptance Model (TAM) method, this study aims to determine the analysis of the factors that influence the use of mobile banking applications. The TAM method is used because it fits the research objectives and can explain the influence of factors related to the acceptance of a mobile banking application. The factors to be investigated in this study include perceived usefulness, perceived ease of use, perceived security, and branding. This research was conducted on 400 respondents who are customers of a bank in the Jakarta area and have used the new mobile banking application from the bank. From the results of this study will be obtained results that describe whether usability, convenience, security, and brand image have a positive and significant influence on the use of mobile banking. The results of this study are expected to assist banks in improving their services in terms of these four factors.

Keywords: *Branding, Perceived Ease of Use, Perceived Usefulness, Perceived Security, Mobile Banking*

INTRODUCTION

Mobile Banking is one of the online banking services that different institutions provide. Customers that want comfort, convenience, quickness, and flexibility in their transactions at any time and anywhere will find this facility to be a satisfying solution [1]. Transfers, bill payments, balance checks, topping up e-wallets, buying electricity tokens, buying credit, and other financial operations can all be done through mobile banking. However, despite the extremely rapid development in mobile users, not everyone has adopted mobile banking for routine financial operations [2]. According to the findings of a survey this bank performed of its clients, some clients are still hesitant to transition to digital banking due to security concerns, technical challenges with mobile banking, and low levels of client confidence in the security of mobile banking.

This bank has unveiled a new logo for their mobile banking application in March 2021. The branding change for the Mobile Banking application is intended to transform it into a Super App that makes use of more sophisticated technology to create a distinctive and contemporary personal touch when accessing all available financial services, including billers, and later different products in subsidiary companies. This bank is undergoing some types of digital transformation. The author of this study will examine the TAM (Technology Acceptance Model) in this article to describe how customers may receive and make the most of the new mobile banking application and service. The Technology Acceptance Model (TAM) is a model that explains behavioral intention. Between behavioral intention and behavior are two different things, behavioral intention is still an interest. Interest is defined as a desire to perform a behavior. While behavior (behavior) is a real action or activity carried out. Thus it can be interpreted that a behavior will be carried out if someone has an interest in doing it [3]. From the explanation above, it can be concluded that interest in using the Mobile Banking system is an encouragement for someone to carry out behavior in using the Mobile Banking system.

Over the years, the presentation and classification of TAM-related research studies in two broad categories internet banking and mobile banking supported the good presentation of TAM research. The conducted review of the TAM model, its extensions, development, and shortcomings has specified consistent evolution of the model, still many unexplored areas related to theory, and practical aspects of technology adoption could facilitate the interested parties such as academic researchers, organizations, and government institutions. This research study contributes to the existing literature; and will be beneficial for future researchers' desire in Internet banking and Mobile banking research comprehending the TAM model [4].

Previously, TAM has been widely used to estimate customer intentions to shop online and customer acceptance of mobile payments [5]. According to Cheong & Park, Usefulness and Ease of Use have a positive relationship with customer attitudes towards mobile internet. Attitude towards mobile internet was found to be the most significant factor in predicting behavioral intention to use mobile internet [6]. TAM proposes that Usefulness and Ease of Use, as well as feeling pleasure, can predict behavioral intentions among mobile technology users. The perception factors that influence customer interest in the use of Mobile Banking that wants to be examined in this research are Perceived Usefulness, Perceived Ease of Use, Perceived Security, and Branding.

The rise in digital transactions and the increasing number of banks releasing mobile banking applications to aid in their clients' daily financial activities are the driving forces behind this study. This study used the Technology Acceptance Model (TAM) to analyze the variables that affect the use of mobile banking applications. The TAM approach is utilized because it meets the study's goals and can illustrate how various elements that affect a mobile banking app's adoption interact. Perceived utility, perceived simplicity of use, perceived security, and perceived branding are among the criteria that will be looked into in this study. 400 respondents who are bank customers in the Jakarta area and have

utilized the new mobile banking application from the bank. From the results of this study will be obtained results that describe whether usefulness, ease of use, security, and brand image have a positive and significant influence on the use of mobile banking. The results of this study are expected to assist banks in improving their services in terms of these four factors.

METHOD

This study uses quantitative research methods, which means that in this research activity, researchers try to determine the relationship between variables based on data obtained from a sample of respondents determined in the population. The study's primary data source was the responses to the questionnaires given to the chosen respondents. With the help of a questionnaire distribution method that involved providing written statements to respondents, data were gathered. Respondents address the statements made as well. Where the answers are already accessible, this questionnaire is closed. The TAM (Technology Acceptance Model) theory was used in the questionnaire's design to ask about this bank's acceptance of mobile banking [7]. Questionnaires were given to customers using the bank's new mobile banking application.

The subjects in this study were users of this bank's new mobile banking application who had transactions at least once using this application. The number of active users of this mobile banking application currently is 7,100,000 people [8]. For Jakarta, based on the Bank's internal data, as of July 2021, the number of users of this bank's mobile banking application is 785,376 people. The sample calculation uses the Slovin formula because the population is relatively large. From the calculation, it was found that the number of respondents for this study was 400 respondents.

This study uses the Random Sampling Method in which all individuals in the population either individually or jointly are given the same opportunity to be selected as sample members. The time of data collection in this study was from mid-2021 to early 2022.

$$n = N/N(d)^2 + 1$$

whereas :

n = sample

N = population

d = precise score 95% atau sig. = 0,05.

For this research, the results of the number of samples as follows:

$$n = 785.376/785.376 (0,05)^2 + 1$$

$$n = 399,79 \rightarrow \text{rounded up to } 400$$

In this research, the independent variables include Perceived Usefulness (PU), Perceived Ease of Use (PE), Perceived Security (PS), and Branding (B). And what is included in the dependent variable is Attitude Toward Use (AU) and Actual System Use (AS). The following is the model of this research:

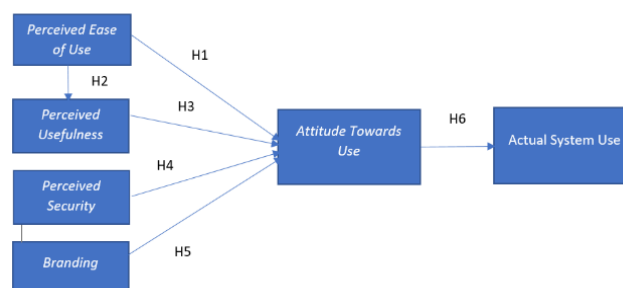


Figure 1: Research Model

Based on the description above, this research has several temporary hypotheses or conjectures that will be tested and researched, including the following:

- H1: Perceived Ease of Use has a significant effect on Attitude Towards Use
- H2: Perceived Ease of Use has a significant effect on Perceived Usefulness
- H3: Perceived Usefulness has a significant effect on Attitude Towards Use
- H4: Perceived Security has a positive influence on Attitude Towards Use
- H5: Branding has a significant effect on Attitude Towards Use
- H6: Attitude Toward Use has a significant effect on Actual System use

The main data source (primary) in the study came from the answers to the selected respondents' questionnaires. Questionnaires were given to customers using the bank's mobile banking application. The questionnaire statements that given to customers using mobile banking application are:

1. Perceived Usefulness (PU)
 - a. I consider that the Bank's mobile banking application provides convenience benefits in daily financial transactions. (PU1)
 - b. I consider that by using the Bank's mobile banking application, financial transactions become more efficient. (PU2)
 - c. I consider that the features in the Bank's mobile banking application are useful in my daily financial transactions. (PU3)
 - b. I consider that all the features in the Bank's mobile banking application increase my productivity in daily transactions. (PU4)
2. Perceived Ease of Use (PE)
 - a. I consider that the Bank's mobile banking application is easy to use for any transaction, anytime and anywhere. (PE1)
 - b. I consider that all transaction menus contained in the Bank's mobile banking application are clear and understandable. (PE2)
 - c. I only need minimal effort to learn and understand the use of the Bank's mobile banking application. (PE3)
 - d. I consider that overall the features in the Bank's mobile banking application are very easy financial transaction tools. (PE4)
3. Perceived Security (PS)
 - a. I feel safe in providing personal data for financial transaction needs in Bank's mobile banking. (PS1)
 - b. I feel I can rely on the security of the Bank's mobile banking application in financial transactions. (PS2)
4. Branding (B)
 - a. When I saw the Bank's mobile banking application, I realized that it was a digital product from this Bank. (B1)
 - b. I feel confident and confident in using the Bank's mobile banking application because I know the image of this Bank as a banking institution in Indonesia. (B2)
5. Attitude Towards Use (AU)
 - a. I feel that using the Bank's mobile banking application is a good idea for financial transactions. (AU1)
 - b. I feel that using the Bank's mobile banking application is a wise idea in conducting financial transactions. (AU2)

- c. I feel that using the Bank's mobile banking application makes my financial transactions more enjoyable. (AU3)
6. Actual System Use (AS)
- a. I use the Bank's mobile banking application for all my daily financial transactions. (AS1)
- b. I feel that using the Bank's mobile banking application has really helped me and I will continue to use it. (AS2)
- c. I am satisfied using the Bank's mobile banking application for daily financial transactions. (AS3)
- The questionnaire uses a Likert scale to answer it.
The Likert scale used is as follows:
- Score 5 for answer Strongly Agree
 - Score 4 for the answer Agree
 - Score 3 for answer Neutral
 - Score 2 for the answer Disagree
 - Score 1 for the answer Strongly Disagree

RESULT AND DISCUSSIONS

Respondent Profiles

1. Gender

Table 1
Respondent's Gender

Gender	Frequency	Percentage (%)
Male	169	42%
Female	231	58%
Total	400	100%

Based on the table, it can be seen that the number of men from the entire sample is 169 people or 42% of the total sample, while the number of women is 231 people or 58% of the total sample. This shows that the majority of users of this bank's mobile banking application in Jabodetabek are women.

2. Age

Table 2
Respondent's Age

Age	Frequency	Percentage (%)
18-25	174	43%
26-35	157	39%
35-55	55	14%
>55	14	4%
Total	400	100%

Based on the table, it can be seen that the largest number of samples is 174 people aged 18-25 years, the 26-35 year age group is 157 people, the 35-55 year age group is 55 people, and the age group over 55 years old is 14 people.

3. Education Level

Table 3

Respondent's Education Level

Education Level	Frequency	Percentage (%)
High School	107	27%
Bachelor's Degree	257	64%
Master's Degree	35	8%
Doctoral Degree	1	1%
Total	400	100%

Based on the table, it can be seen that the highest number of samples had a bachelor education level of 257 people, a high school education group of 107 people, a master's education group of 35 people, and a doctoral education group of 1 person.

4. Amount of Time Being a Customer

Table 4

Respondent's Amount of Time Being a Customer

Time-length to be a customer	Frequency	Percentage (%)
<1 year	79	20%
1-5 years	231	58%
>5 years	90	22%
Total	400	100%

Based on the table, it can be seen that 1-5 years is the largest number of samples in the old criteria of being a customer, as many as 231 people. The group of less than 1 year is 79 people, and the group is more than 5 years old who become bank customers as many as 90 people.

Instrument Test

1. Validity Test and Reliability Test

A validity test is used to determine the validity of a questionnaire. When the survey's questions may provide light on the subject matter it will be measuring, the survey is said to be legitimate. A question or indicator is legitimate if the Corrected Item-Total Correlation (r-count) is higher than the r-table value of 0.361 [9]. There were 400 people that answered this survey's questions. The table below shows the findings of the questionnaire validity test.

Table 5 Questionnaire's Validity Test

Variable	Indicator	R Count	R table	Remarks
PE	PE1	0,793	0,361	Valid
	PE2	0,854	0,361	Valid
	PE3	0,854	0,361	Valid
	PE4	0,883	0,361	Valid
PU	PU1	0,793	0,361	Valid
	PU2	0,854	0,361	Valid
	PU3	0,854	0,361	Valid
	PU4	0,883	0,361	Valid
PS	PS1	0,793	0,361	Valid
	PS2	0,854	0,361	Valid
	PS3	0,854	0,361	Valid

Variable	Indicator	R Count	R table	Remarks
B	B1	0,883	0,361	Valid
	B2	0,793	0,361	Valid
	B3	0,854	0,361	Valid
AU	AU1	0,854	0,361	Valid
	AU2	0,883	0,361	Valid
	AU3	0,793	0,361	Valid
AS	AS1	0,854	0,361	Valid
	AS2	0,854	0,361	Valid
	AS3	0,883	0,361	Valid

The reliability test is intended to measure the level of consistency of research instruments. According to Sekaran, if Cronbach's alpha value is greater than or equal to 0.60, it means that the instrument can be said to be reliable [10]. The table of the results of the questionnaire reliability test can be seen from table below:

Table 6 Questionnaire's Reliability Test

Variable	Indicator	Cut-Off Value Cronbach's Alpha	Cronbach's Alpha Result	Remarks
PE	PE1	> 0.60	0,863	Reliable
	PE2			
	PE3			
	PE4			
PU	PU1	> 0.60	0,890	Reliable
	PU2			
	PU3			
	PU4			
PS	PS1	> 0.60	0,869	Reliable
	PS2			
	PS3			
B	B1	> 0.60	0,798	Reliable
	B2			
	B3			
AU	AU1	> 0.60	0,727	Reliable
	AU2			
	AU3			
AS	AS1	> 0.60	0,829	Reliable
	AS2			
	AS3			

The results of the validity test shown by the table, prove that all indicators used in measuring the variables in this study have a correlation value > 0.361 and Cronbach's Alpha value is greater than 0.60. So it can be concluded that all indicators in this study are valid.

2. Construct Validity and Reliability Test

It is aimed by the construct validity test to ascertain whether each indication can adequately explain the current construct. Indicators with a p-value 0.05 and a loading factor > 0.5 are utilized to measure the research variables, whereas indicators with a p-value > 0.05 and a loading factor 0.5 are excluded from the model.

According to Ghozali, the standardized loading factor value (Estimate value) is what has to be looked at; if it is less than 0.70, the indicator is discarded because it is deemed ineffective for measuring the latent construct [11].

All variables had satisfied the convergent validity minimum limit, according to the validity and reliability test results. These findings reveal that each variable has been adequately defined by the data collecting tool, since all items have received favorable factor loading, AVE, Cronbach's Alpha, and CR ratings. There is no requirement for variable reduction because the variables being examined are deemed to have convergent validity, therefore SEM analysis can begin.

Table 7 Validity and Reliability Test Result

Variable	Loading Factor	Loading Factor ²	Error	CR	AVE
PE	0.820	0.672	0.180	0.846	0.788
	0.777	0.604	0.223		
	0.818	0.669	0.182		
PU	0.860	0.740	0.140	0.799	0.741
	0.731	0.534	0.269		
	0.820	0.672	0.180		
	0.834	0.696	0.166		
PS	0.751	0.564	0.249	0.830	0.808
	0.842	0.709	0.158		
	0.753	0.567	0.247		
B	0.906	0.821	0.094	0.720	0.708
	0.935	0.874	0.065		
	0.748	0.560	0.252		
AU	0.584	0.341	0.416	0.699	0.653
	0.514	0.264	0.486		
	0.504	0.254	0.496		
AS	0.600	0.360	0.400	0.603	0.627
	0.582	0.339	0.418		
	0.691	0.477	0.309		
	0.830	0.689	0.170		

The AVE value doesn't generally have a problem, according to the table above. All research indicators have a loading factor value of > 0.5 and an average variable extracted (AVE) value of > 0.5, according to the validity test results. And the build reliability value, which has a value larger than 0.5, can be used to determine the reliability assessment. All of the study's variables were deemed reliable as a result. Thus, no variables were dropped from the research model.

3. Structural Model Analysis

After testing the reflective measurement model, the next step is to test the structural model. The testing of the structural model consists of model evaluation and hypothesis testing. Below is the result of this research structural model.

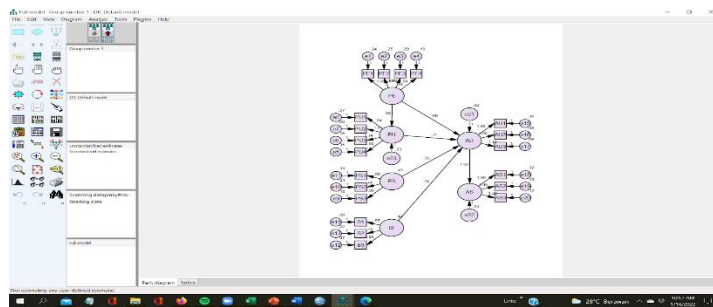


Figure 2. Research Structural Model

To make sure the model fits the whole data, model evaluation must be done. The Goodness-of-Fit (GOF) results will be compared with the previously established cut-off values during the model evaluation [12]. Confirmatory Factor Analysis (CFA), performed with SPSS AMOS software, was used to derive GOF values. The model will be re-specified if the GOF value does not meet the cut-off value. The results of the model evaluation are presented in the following table:

Table 8. Model Evaluation with Goodness-of-Fit

No	GOF Type	Cut-off Score	Result	Remarks
Absolute Fit Indices				
1	Chi Square	>0.05	0.000	Not Meet
2	GFI	>=0.7	0.707	Meet
3	AGFI	>=0.7	0.670	Not Meet
4	RMR	<=0.1	0.281	Meet
5	RMSEA	<=0.1	0.085	Not Meet
Incremental Fit Indices				
6	NNFI	>=0.7	0.761	Meet
7	CFI	>=0.7	0.832	Meet
8	IFI	>=0.7	0.833	Meet
Parsimony Fit Indices				
9	PNFI	0.60 – 0.90	0.713	Meet
10	PGFI	0.50 – 1.00	0.629	Meet

It can be seen from the results of the model evaluation, it was found that several GOF parameters did not meet the cut-off value so a re-specification of the model was needed and the analysis could be continued to the next stage if the GOF cut-off value had been met [13]. The model can be said to be fit if it meets the Good fit of at least 5 indicators.

4. Structural Equation Model (SEM)

Structural model analysis using SPSS AMOS software, where the final result is the value of β and P-value. The P-value will be used in determining whether the relationship between variables is significant or not. The value of β is the estimated coefficient of the explanatory variable which shows the change in the response variable caused by the unit change of each explanatory variable

by keeping all other explanatory variables constant/unchanging. The coefficient is the degree of change in the outcome variable for every 1 unit change in the predictor variable.

The relationship between variables is said to be significant if the P-value is less than 0.05, but if the value is above 0.05, it can be said that the relationship between variables is not significant. Then which β has a positive value indicates that there is a positive relationship between variables, and vice versa, if it is negative, then there is no negative relationship. The results of the SEM analysis can be seen in the following table:

Table 9 SEM Analysis Test Result (P-Value)

Hypothesis	Impact	P-Value Cutt-off Value	P-Value Result	Result Remarks
H1	PE -> AU	< 0.05	0.004	Significant
H2	PE -> PU	< 0.05	0.000	Significant
H3	PU -> AU	< 0.05	0.000	Significant
H4	PS -> AU	< 0.05	0.000	Significant
H5	BI -> AU	< 0.05	0.000	Significant
H6	AU -> AS	< 0.05	0.000	Significant

Based on the table of SEM analysis test results for the P-Value above, all hypotheses that describe the relationship between variables show that their values are below 0.05. This shows that all the variables in the hypothesis are significantly related.

Table 10: SEM Analysis Test Result (β)

Hypothesis	Impact	β Cut-off Value	β Result	Result Remarks
H1	PE -> AU	Positive Value	0.087	There is a positive relationship
H2	PE -> PU	Positive Value	0.577	There is a positive relationship
H3	PU -> AU	Positive Value	0.313	There is a positive relationship
H4	PS -> AU	Positive Value	0.154	There is a positive relationship
H5	BI -> AU	Positive Value	0.255	There is a positive relationship
H6	AU -> AS	Positive Value	1.017	There is a positive relationship

Based on the table of SEM analysis test results for above, all influences between variables are positive and this shows that all variables are positively related.

Result of Hypothesis Testing

Result of Hypothesis 1 Testing

For hypothesis 1, the Perceived Ease of Use variable has an effect on the Attitude Towards Use variable, based on the results of statistical analysis using SEM, hypothesis 1 has a p-value of 0.004 and a (standardized coefficient) of 0.087. So it can be said that the Perceived Ease of Use variable

significantly affects Attitude Towards Use, so that Hypothesis 1 is accepted. Customers who find it easy to use the mobile banking application will tend to be more inclined to continue to transact digitally through the mobile banking application in the future.

Result of Hypothesis 2 Testing

For hypothesis 2, the Perceived Ease of Use variable has an effect on the Perceived Usefulness variable, based on the results of statistical analysis using the SEM method, hypothesis 2 has a p-value of 0.000 and a (standardized coefficient) of 0.577. So it can be said that Perceived Ease of Use significantly affects Perceived Usefulness, so Hypothesis 2 is accepted. The results of the study proved to be in line with the nature of TAM which stated that perceived ease of use would have a direct effect on perceived benefits [14]. Customers who find it easy to use the mobile banking application, tend to feel directly the benefits provided by the mobile banking application.

Result of Hypothesis 3 Testing

For hypothesis 3, the Perceived Usefulness variable has an effect on the Attitude Towards Use variable, based on the results of statistical analysis using the SEM method, hypothesis 3 has a p-value of 0.000 and a (standardized coefficient) of 0.313. So it can be said that Perceived Usefulness affects Attitude Toward Use significantly, so Hypothesis 3 is accepted. Customers who feel the benefits of the mobile banking application will be more inclined to continue using the mobile banking application to transact digitally because it is felt to facilitate their daily financial transaction activities.

Result of Hypothesis 4 Testing

For hypothesis 4, the Perceived Security variable has an influence on the Attitude Towards Use variable, based on the results of statistical analysis using the SEM method, hypothesis 4 has a p-value of 0.000 and a (standardized coefficient) of 0.154. So it can be said that Perceived Security significantly affects Attitude Toward Use, so Hypothesis 4 is accepted. The sense of security offered by the mobile banking application will make customers feel confident and do not hesitate to use the mobile banking application for daily digital transactions. Customers will feel more confident in choosing this digital channel because it has a high level of security so there is no need to be afraid of losing money or engaging in fake transactions.

Result of Hypothesis 5 Testing

For hypothesis 5, namely the Branding variable has an effect on the Attitude Towards Use variable, based on the results of statistical analysis using the SEM method, hypothesis 5 has a p-value of 0.000 and a (standardized coefficient) of 0.255. So it can be said that Branding significantly affects Attitude Toward Use, so Hypothesis 5 is accepted. This is in line with a previous study that examined the relationship between branding and customer's attitude towards banking services in Iran which showed that there was a significant relationship between branding and customer attitude [15]. With the good image of the bank and the mobile banking application itself, of course, it makes customers even more confident to continue using the application for digital transactions.

Result of Hypothesis 6 Testing

For hypothesis 6, the Attitude Towards Use variable has an effect on the Actual System Use variable, based on the results of statistical analysis using the SEM method, hypothesis 6 has a p-value of 0.000 and a (standardized coefficient) of 1.017. So it can be said that Attitude Toward Use affects Actual System Use significantly, so Hypothesis 6 is accepted. In previous research, it was stated that

Attitude Towards Use and Actual System Use had a close relationship and greatly influenced [16]. With all the advantages possessed by the mobile banking application, of course, it makes customers accept the application positively and satisfaction can be achieved because the application is easy to use and can increase customer productivity.

CONCLUSION

The study's findings were found to be consistent with earlier research on other mobile banking application objects. The findings of this study will aid businesses in evaluating which tactics may be introduced and enhanced to increase customer utilization and satisfaction with banking services. The Bank now knows which areas of their services need to be improved in order for consumers to have a positive experience when using mobile banking applications as a consequence of the findings of this study. Of course, this will boost the bank's customer preferences and loyalty. Recommendations related to topics for further research are to examine the level of customer satisfaction with the newly updated mobile banking application service, whether there is a significant change in the service perceived by customers between the old application and the new application. Among services that compete in the same category, mobile banking services must provide something new to bank customers (E-banking services). The perceived utility of mobile banking services has a significant impact on the intention to utilize them. According to the findings of this study, once bank customers evaluate mobile banking services based on their judgments of simplicity of use, usefulness, and ability, their opinion of utilizing mobile banking applications improves.

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