

Factors Affecting the Success Level of Mobile Banking Information Systems at a Private Bank

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ABSTRACT

The rapid advancement of technology has an impact on the banking sector which is marked by changes in the behavior of the Indonesian people in banking transactions, namely the increasing number of mobile banking users. The rising number of mobile banking users does not necessarily make customers comfortable and safe using mobile banking. This study will discuss what factors affect the success rate of mobile banking information systems using the modified Delone and McLean information system success method, which is the Security System variable added to the model. The research method used is quantitative research with the intended population being users of mobile banking services. This study uses SEM with a PLS approach as a data analysis method, showing that system security affects User satisfaction and Use.

Keywords: Success Factors, Mobile Banking, Delone and McLean, SEMPLS.

INTRODUCTION

With the rapid advancement of information technology in the financial industry, there have been some changes in the behavior of the Indonesian people in the banking sector. The results of the SharingVision 2024 survey showed that as many as 58% of the majority of Indonesians conduct banking transactions through mobile banking.

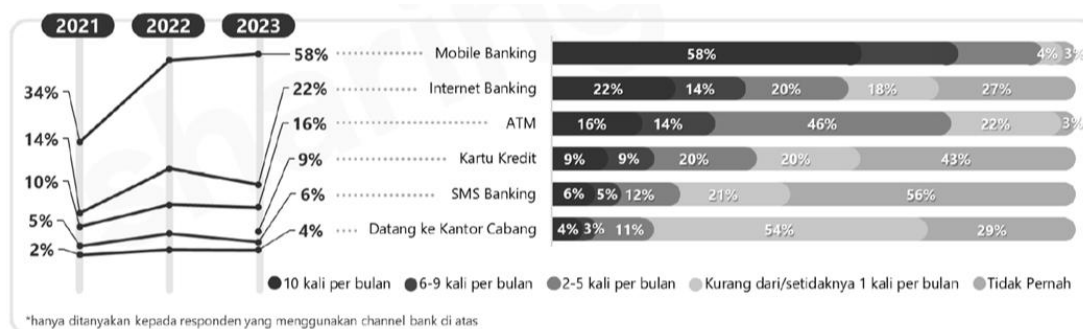


Figure 1. Indonesian People's Banking Transaction Methods. Source: Sharing Vision survey results in 2024

Therefore, this also impacts the increasing demand for mobile banking services (Abdennebi, 2023). Mobile banking provides banking services such as payments, fund transfers, loan applications, and cash withdrawals without ATM cards (Tungjitnob et al., 2021). Also, the ease of accessing mobile banking anywhere and anytime makes mobile banking the choice of customers (Merhi et al., 2019). With the widespread use of mobile banking, it does not make customers comfortable with using mobile banking. The discomfort felt by customers is due to concerns about using mobile banking applications related to their security and convenience factors (I. A. Firmansyah et al., 2021). Based on this background, this research will discuss the factors that influence the level of success in mobile banking with the modified Delone and McLean IS success model. Information quality, service quality, system quality, and system security will be measured for their influence on user satisfaction, usage, and the success of mobile banking information systems.

LITERATURE REVIEW

Mobile Banking is a channel provided by banks to their customers to interact with banks through their smartphones(Kumar et al., 2020). Mobile banking is one of the most revolutionary technological breakthroughs in banking as it allows customers the freedom to conduct financial transactions independently through their mobile devices(Sharma & Sharma, 2019). In addition, mobile banking also offers a high level of usability and can be personalized according to customer needs(Abdennebi, 2023). Mobile banking will help banks expand their customer reach without depending on the position of branch offices. Thus, the existence of mobile banking is essential in the current era of digitalization, because most banking transactions can be done with online services via smartphones(I. A. Firmansyah et al., 2021). The availability of mobile banking services can certainly help customers access information related to their accounts and conduct remote transactions at a low cost.

The right measurement model is needed to determine the success of an information system so that it can produce what factors determine success. This study uses Delone and McLean's information system success measurement model. According to (Razief Ardhana Bardijan & Sugiharti Binastuti, 2022) The Delone and McLean information system success model is a research model for measuring the success of an information system based on interrelated success variables. The independent variables are Service Quality, Information Quality, and System Quality, and the dependent variables are Use, User Satisfaction, and Net Benefits. Information Quality can be the result of an information system, such as information that is easy to understand, has sufficient integrity, and has excellent accuracy(Razief Ardhana Bardijan & Sugiharti Binastuti, 2022). System Quality in the case of mobile banking is described through ease of use, response time, user interface, and reliability and stability(Sharma & Sharma, 2019). Service Quality can be seen from the quality of assistance obtained by application users, including the accuracy and responsiveness provided(Pitafi & Ali, 2023). The Security System factor can be seen in how the system provides a sense of security to users when users access and use technology(Ansor, 2022). The Use variable will be measured regarding how often use, usage patterns, and user dependence on using mobile banking information system services (D. Firmansyah et al., 2023). The User Satisfaction variable is reflected as a feeling of pleasure or displeasure with the results that result from combining all the benefits that a person expects in using mobile banking(Abdennebi, 2023). Net Benefits referred to in the Delone and McLean model mean the benefits obtained by individuals or organizations from using the system, such as financial or operational benefits (Muhammad Azhari Marpaung & Jarot S.Suroso, 2022).

METHODS

In this research, the model used is based on the theory of the Delone and McLean information system success measurement model which has been modified as in the following figure.

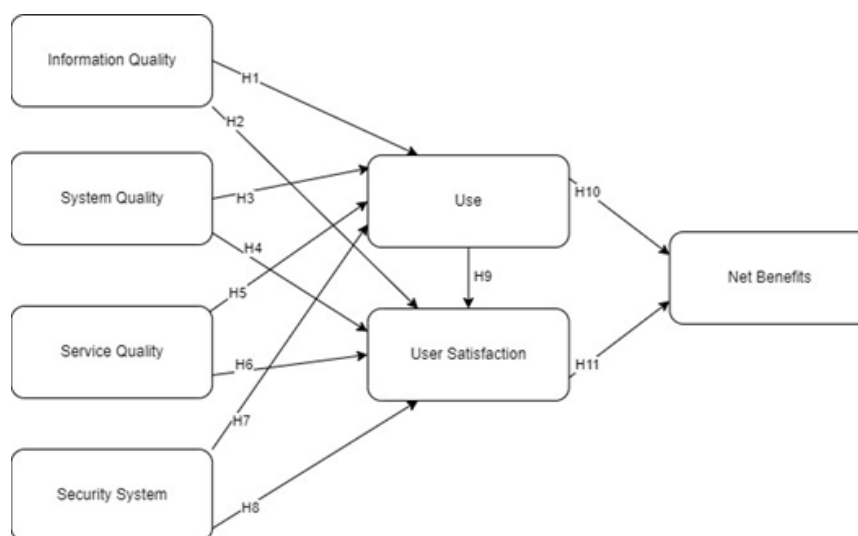


Figure 2. Research Model

Based on the research model above, the hypothesis formed is as follows:

- H1: Information quality affects the Use.
- H2: Information quality affects the User satisfaction.
- H3: System quality affects the Use.
- H4: System quality affects the User satisfaction.
- H5: Service quality affects the Use.
- H6: Service quality affects the User satisfaction.
- H7: Security system affects the Use.
- H8: Security system affects the User satisfaction.
- H9: The Use affects the User satisfaction.
- H10: The Use affects the Net benefits.
- H11: User satisfaction affects the Net benefits.

The primary data collected in this study is a questionnaire distributed online to active mobile banking users who have used mobile banking more than once. The variable measurement that will be carried out in this study is to use a Likert scale assessment from Scale 1 (Strongly disagree) to Scale 5 (Strongly agree). This study uses Structural Equation Modeling (SEM) with a Partial Least Squares (PLS) approach as a data analysis method with the help of SmartPLS tools.

RESULTS

The data collected in this study totaled 400 respondents. The respondents' gender consisted of 252 male respondents and 148 female respondents. The age group of respondents consisted of 9 respondents aged over 50 years, 74 respondents aged 41-50 years, 195 respondents aged 31-40 years, 121 respondents aged 21-30 years, and 1 respondent aged under 20 years. The last education of the respondents consisted of 10 respondents having the last high school education, 46 respondents had the last Diploma education, 301 respondents had the last Bachelor's Degree education, and 43 respondents had the last Master's Degree education.

Table 1. Respondent Profile

Categories	Description	Total	Percentage
Gender	Male	252	63.00%
	Female	148	37.00%
Age	<20	1	0.25%
	21-30	121	30.25%
	31-40	195	48.75%
	41-50	74	18.50%
	>50	9	2.25%
Education	High School	10	2.50%
	Diploma	46	11.50%
	Bachelor Degree	301	75.25%
	Master's Degree	43	10.75%

Average Variance Extracted (AVE), Loading Factor, Cronbach's Alpha, and Composite Reliability were conducted in this study to ensure that all variables and indicators were valid and reliable. On the AVE, all variables have an AVE value above 0.5. A variable is valid when the AVE value is more than 0.5 (SÜRÜCÜ & MASLAKÇI, 2020). In the Loading Factor test results, all indicators have a Loading Factor value above 0.7. An indicator is declared valid if it has a loading factor value above 0.7 (Purwanto & Sudargini, 2021). In testing the reliability of data with Cronbach's Alpha, all variables have a Cronbach's Alpha value above 0.6. A variable is reliable when Cronbach's Alpha value is > 0.6 for all constructs (SÜRÜCÜ & MASLAKÇI, 2020). In testing data reliability with Composite Reliability, all

variables have a Composite Reliability value above 0.7. A variable is declared reliable if it has a composite reliability > 0.7 (Shrestha, 2021). Based on these tests, none of the variables or indicators in this study were declared invalid or unreliable. The result is shown in Table 2. Path Coefficient is a value that shows the direction of the relationship between variables (Purwanto & Sudargini, 2021). This value shows how the independent variable affects the dependent variable. A variable is said to have a significant effect if its significance level is smaller than 0.05 (Kwong & Wong, 2013). The model fit test is needed in the SEM method to get a model that fits and matches the sample data (Simanjuntak & Hamimi, 2019). This research model has an SRMR value of 0.068. So it can be concluded that this study has a model that fits or good fit with the data and can continue interpreting the analysis. A model is said to be suitable if the SRMR value is smaller than 0.08 (Kyndt & Onghena, 2014).

Table 2. Validity and Reliability Test

Variable	Indicator	Outer Loading Factor	AVE	Cronbach's Alpha	Composite Reliability
Information Quality	IQ1	0.854	0.723	0.808	0.887
	IQ2	0.840			
	IQ3	0.857			
System Quality	SQ1	0.784	0.678	0.762	0.863
	SQ2	0.869			
	SQ3	0.815			
Service Quality	SeQ1	0.854	0.712	0.798	0.881
	SeQ2	0.872			
	SeQ3	0.803			
Security System	SS1	0.858	0.771	0.851	0.910
	SS2	0.900			
	SS3	0.874			
Use	USE1	0.713	0.691	0.776	0.869
	USE2	0.894			
	USE3	0.874			
User Satisfaction	US1	0.849	0.734	0.819	0.892
	US2	0.854			
	US3	0.867			
Net Benefit	NB1	0.824	0.704	0.791	0.877
	NB2	0.839			
	NB3	0.854			

Table 3. Path Coefficient and Hypothesis Test

Hypothesis		T-Table	T Statistics	P Values	Result
H1	IQ → USE	1.960	1.389	0.165	Rejected
H2	IQ → US	1.960	3.692	0.000	Accepted
H3	SQ → USE	1.960	2.133	0.033	Accepted
H4	SQ → US	1.960	0.617	0.537	Rejected
H5	SeQ → USE	1.960	3.215	0.001	Accepted
H6	SeQ → US	1.960	1.130	0.259	Rejected
H7	SS → USE	1.960	3.853	0.000	Accepted

H8	SS → US	1.960	4.491	0.000	Accepted
H9	USE → NB	1.960	7.540	0.000	Accepted
H10	USE → US	1.960	9.237	0.000	Accepted
H11	US → NB	1.960	6.756	0.000	Accepted

DISCUSSION

In this research, were 11 hypotheses tested, 3 were rejected and 8 were accepted. The following is an explanation of the results of hypothesis testing based on the variables tested. The Effect of Information Quality on Use, by the hypothesis test states that the first hypothesis (H1), namely the Information Quality variable, does not affect customer use (Use) of mobile banking information systems. Following the P-value of the first hypothesis (H1) which is greater than 0.05. This result is matched with the results of the previous research (D. Firmansyah et al., 2023). The Effect of Information Quality on User Satisfaction, by the hypothesis test states that the second hypothesis (H2), namely the Information Quality variable, affects customer satisfaction (User Satisfaction) in mobile banking information systems. Following the P-value of the second hypothesis (H2) which is less than 0.05. This result is consistent with the previous study (Sharma & Sharma, 2019). The Effect of System Quality on Use, by the hypothesis test states that the third hypothesis (H3), namely the System Quality variable, affects customer use (Use) of mobile banking information systems. Following the P-value of the third hypothesis (H3) which is smaller than 0.05. This result is matched with the previous study (D. Firmansyah et al., 2023). The Influence of System Quality on User Satisfaction, by the hypothesis test states that the fourth hypothesis (H4), namely the System Quality variable, does not affect customer satisfaction (User Satisfaction) in mobile banking information systems. Following the P-value of the fourth hypothesis (H4) which is greater than 0.05. This result is consistent with the results of previous research (Sharma & Sharma, 2019). The Effect of Service Quality on Use, by the hypothesis test states that the fifth hypothesis (H5), namely the Service Quality variable, affects customer use (Use) of mobile banking information systems. Following the P-value of the fifth hypothesis (H5) which is smaller than 0.05. This result is matched with the previous study (D. Firmansyah et al., 2023). The Effect of Service Quality on User Satisfaction, by the hypothesis test states that the sixth hypothesis (H6), namely the Service Quality, does not affect customer satisfaction (User Satisfaction) in mobile banking information systems. Following the P-value of the sixth hypothesis (H6) is greater than 0.05. This is not in line with previous study (Sharma & Sharma, 2019).

The Effect of Security System on Use, by the hypothesis test states that the seventh hypothesis (H7), namely the Security System variable, affects customer use (Use) of mobile banking information systems. Following the P-value of the seventh hypothesis (H7) is smaller than 0.05. The Effect of Security System on User Satisfaction, by the hypothesis test states that the eighth hypothesis (H8), namely the Security System variable, affects customer satisfaction (User Satisfaction) in mobile banking information systems. Following the P-value of the eighth hypothesis (H8) is smaller than 0.05. The Effect of Use on User Satisfaction, by the hypothesis test states that the ninth hypothesis (H9), namely the Use variable, affects customer satisfaction (User Satisfaction) in mobile banking information systems. Following the P-value of the ninth hypothesis (H9) is smaller than 0.05. This result is matched with the previous research (Sharma & Sharma, 2019). Effect of Use on Net Benefit, by the hypothesis test states that the tenth hypothesis (H10), namely the Use variable, affects the success (Net Benefit) of mobile banking information systems. Following the P-value of the tenth hypothesis (H10) is smaller than 0.05. This result is matched with the previous study (Sharma & Sharma, 2019). The Effect of User Satisfaction on Net Benefit, by the hypothesis test states that the eleventh hypothesis (H11), namely the User Satisfaction variable, affects the success (Net Benefit) of the mobile banking information system. Following the P-value of the eleventh hypothesis (H11) is smaller than 0.05. This result is matched with the previous research (Sharma & Sharma, 2019).

CONCLUSION

Based on this study, factors that influence the success of mobile banking information systems have been found. The Use variable has a significant effect on the Net Benefit variable. In addition, Use as a median variable, is influenced by other independent variables, namely Service Quality, System Quality, and Security System. User Satisfaction has

a significant effect on the Net Benefit variable. In addition, User Satisfaction as a median variable, is influenced by other independent variables, namely Information Quality, Security System, and Use.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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