Mobile Banking: System Quality, Information Quality, Service Quality, Customer Satisfaction, and Loyalty

R Amalina Dewi Kumalasari[1], Kartika Indah Permanasari[2], Magdalena Karismariyanti[3], Dadang Munandar[4]

[1,3]Universitas Telkom
[2]Politeknik Negeri Malang
[4]International Women University
E-mail: radenamalina@telkomuniversity.ac.id

ABSTRACT

The fierce competition for the banking industry in the digital age is accelerating the banking industry's digital transformation to stay competitive. This condition further widens the opportunity for banks to enter the digital banking business. On the contrary, the others maintain their existing ecosystem by providing online services. Online service is consumers' option for facilitating transactions. Information systems and quality services enhance the consumer experience with service technology. Successful implementation of service technicians can be seen in user satisfaction, leading to the user's intent to continue using the service technology and eventually recommend it to others. This study evaluates the mobile banking customer experience satisfactory using the information system success model by DeLone & McLean (2003). The authors collected 176 respondents from Bank Mandiri mobile banking users in this study. Findings based on multiple regression analysis indicate that system quality, information quality, and service quality significantly impact customer satisfaction, affecting loyalty. Increasing system quality, information quality, and service quality can be attained by attaining customer satisfaction and loyalty to mobile banking services.

Keywords: Mobile banking, system quality, information quality, service quality, satisfaction, loyalty

INTRODUCTION

Banks are no longer the leading players in providing financial services, especially in payments and loans. The entry of fintech companies as newcomers in Indonesia was able to shift the position of banking with the advantages of speed and ease of access that can target all groups. The development of fintech has become increasingly unstoppable after receiving support from the government; where in 2016, Bank Indonesia issued regulations for the payment process for e-commerce transactions to be more efficient and secure, and the Financial Services Authority issued a Financial Services Authority Regulation regarding information technology-based lending and borrowing services.

One of the efforts that banks can make to compete in today's digital era is to carry out digital transformation. Several banks have established digital banks, but some have chosen to maintain the existing ecosystem by prioritizing online services that can be consumers' choices to facilitate transactions. Internet banking and mobile banking have become the mainstay of online banking services. However, internet banking has begun to be displaced by the popularity of mobile banking, which is more practical (without having to carry tokens) and accommodates consumer mobility.

Based on Payment System Statistics and Financial Market Infrastructure (Banks, 2021), Bank Indonesia, as of September 2021, the volume of mobile banking transactions has increased significantly compared to Internet banking. Internet banking transactions in 2013 were 1,140,285 thousand transactions, increased to 2,622,033 thousand in 2017, and continued to decline to 1,531,839 thousand transactions in 2020, while mobile banking transactions in 2013 were 748,118 thousand transactions and continued to increase to 3,427,101 thousand transactions in 2020.
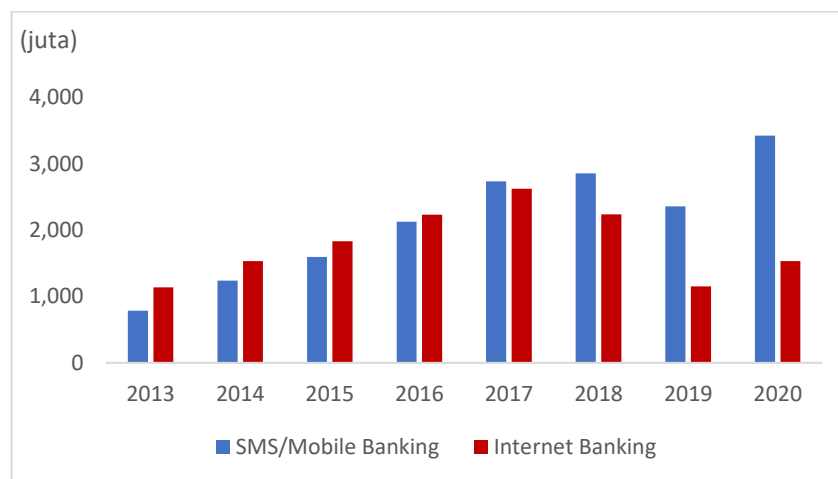
Picture 1. Internet Banking and Mobile Banking Transaction Volume in Indonesia 2013 – 2020

As one of the milestones to winning the competition in the digital era, banks must seriously manage and improve the quality of mobile banking to attract consumer interest and provide the best banking experience for consumers. Bank Mandiri, one of the largest state-owned banks in Indonesia, in March 2021, began to introduce "Livin' by Mandiri" as a refinement of the Mandiri Online application to increase the ease and convenience of customers in accessing banking services. Livin' by Mandiri means a friend or close friend who can be relied on for an easier and happier life (Sitanggang & Perwitasari, 2021).

On October 2, 2021 (Adv, 2021), as a form of improvement to the previous version, Bank Mandiri launched "New Livin' by Mandiri" by carrying the concept of a branch in hand with complete financial services, including integration of Mandiri Group subsidiary services and a digital ecosystem that is a customer favorite. In "New Livin' by Mandiri", customers can access all savings accounts, personal loans, and credit cards integrated with digital ecosystems such as e-wallet; this service is claimed by Bank Mandiri that has never existed before in any banking application in Indonesia (Threestayanti, 2021). New Livin' by Mandiri also features a Quick Pick feature to access transactions instantly and connect with more than 1,800 payment partners. This innovation is a concrete step to providing a comprehensive banking experience, a full suite of financial services, and an open customer ecosystem.

In several empirical studies, consumer experience evaluation has been applied to explain consumer behavior towards a product or service (Liébana-Cabanillas et al., 2014; Sharma & Sharma, 2019). Information quality of systems and services in a service technology can realize a

positive consumer experience as a technology user. The success of implementing a service technician can be seen in user satisfaction. It will lead to their intention to continue to use and even recommend the service technology to others.

The relationship between customer satisfaction, service quality and loyalty intentions have been studied by several researchers (Hamidi & Safareeyeh, 2019; Liébana-Cabanillas et al., 2016; Pappas et al., 2014). Customer satisfaction and loyalty are essential to assess consumers' shopping experience and use of products or services that will affect consumers' long-term behavior (Grönroos, 1991). Satisfaction has been recognized as a critical measure of continued use and success in information systems and e-commerce contexts. In the financial sector, customer satisfaction and loyalty evaluation is used to increase competitiveness because companies in the financial sector provide products and services almost the same from one company to another. Therefore, the service aspect in the banking sector needs to be explored further(George & Kumar, 2014; Kaura et al., 2015).

Several studies have used information systems success models (DeLone & McLean, 2003)to investigate customer satisfaction with mobile banking *(Motiwalla et al.*, 2019; Tam & Oliveira, 2016). This study aims to evaluate the consumer experience satisfaction in using Mobile Banking by using the information system success model by DeLone & McLean (2003), including system quality, service quality, and information quality, whether customer satisfaction with mobile banking can affect customer loyalty intentions.

METHOD

This type of this research is quantitative research, and the data used are primary data from online questionnaires. The target population in this study are Bank Mandiri customers who have used the latest version of Mandiri mobile banking (New Livin' Mandiri) and are included in the category of workers (employees) of productive age (24-50 years old). The sampling technique used is non-probability sampling, with a purposive sampling technique. Purposive sampling is a sampling technique with specific considerations from the researcher. The particular consideration refers to the target population.

Question items from system quality, information quality, service quality and customer satisfaction were adapted from the research by Zhou (2013) and *Motiwalla et al.* (2019). The question item of loyalty is adapted from Baabdullah et al. (2019). Respondents' feedback on the questionnaire statements ranged from 1 "strongly disagree" to 5 = "strongly agree". The hypothesis testing uses multiple linear regression. WhatsApp and email distributed 200 questionnaires, and there were 178 questionnaires returned and analyzed.

RESULT AND DISCUSSION

Validity Test

The number of tested statements related to system quality, information quality, service quality, customer satisfaction and consumer loyalty was 18. From the Validity Test results, all statements have a calculated R-value greater than the R table value of 0.361. So that all statement items are feasible to use and can measure the variables to be measured.

Reliability Test

The number of tested statements related to system quality, information quality, service quality, customer satisfaction and consumer loyalty was 18. From the reliability test results, all statements have a value greater than 0.61. So that all statement items are feasible to use and can be said to be reliable.

Normality test

The purpose of the normality test is to test whether, in the regression model, the residual value has a normal distribution or not. The normality test in this study uses the One-Sample Kolmogorov-Smirnov Test, which shows the probability value of each variable > 0.05, so it can be concluded that the variables used in this study have random data are typically distributed.

Multicollinearity Test

This study tested multicollinearity with VIF (Volume Inflation Factor). The results of the multicollinearity assumption test of model 1 obtained the results of the System Quality, Information Quality and Service Quality, each of which has a tolerance value of less than 1, as well as the VIF number is still between numbers 1-10, meaning that there is no multicollinearity. The results of the multicollinearity assumption test of model 1 obtained the results of System Quality, Information Quality, Service Quality and Customer Satisfaction; each variable has a tolerance value of less than 1, as well as the VIF number is still between numbers 1-10, meaning that there is no multicollinearity.

Heteroscedasticity Test

This study uses the Park test to detect the presence or absence of heteroscedasticity. If the probability value is > 0.05, then there is no heteroscedasticity; if the probability value is < 0.05, then there is heteroscedasticity. The calculation results on the heteroscedasticity test show the Prob value > 0.05. This means that the estimated model is free from heteroscedasticity, so it is feasible.

Multiple Linear Regression Analysis

Model 1 . t-test				
Independent Variable	Beta	t	Sig t.	Information
System Quality (X1)	0.253	3.398	0.001	Significant
Information Quality (X2)	0.267	3,792	0.000	Significant
Service Quality (X3)	0.321	4.711	0.000	Significant
Bound Variable: Customer Satisfaction (Y1)				

Model 2 . t-test				
Independent Variable	Beta	t	Sig t.	Information
Customer Satisfaction (Y1)	0.54	8.148	0.000	Significant
Bound Variable: Loyalty (Y2)				

Discussion

The Effect of Mobile Banking System Quality on Customer satisfaction

The multiple linear regression analysis results showed a significant value of t of 0.001 <0.05, meaning that there was a significant effect of the System Quality variable on the Customer satisfaction variable. From the test, the standardized coefficient value (Beta coefficient) is 0.253, indicating that the System Quality variable has a positive (unidirectional) effect on Y1, this mean that improving the Quality System will increase Customer Satisfaction, and vice versa. Thus, H1 is accepted. The quality of the mobile banking system affects customer satisfaction. The results of this study are in line with the research of (Baabdullah *et al.*, 2019; Motiwalla et al., 2019; Tam & Oliveira, 2016) if customers perceive mobile banking as high quality, easy to use, easy to navigate, and attractive (Choudrie et al., 2018).

The Effect of Mobile Banking Information Quality on Customer satisfaction

The multiple linear regression analysis results showed a significant value of t of 0.000 <0.05, meaning that there was a significant effect of the Information Quality variable on the Customer satisfaction variable. From the test, the standardized coefficient value (beta coefficient) is 0.267, indicating that Information Quality has a positive (unidirectional) influence on Customer satisfaction, this mean that improving the Information Quality will increase Customer Satisfaction, and vice versa. Thus, H2 is accepted. The quality of mobile banking information affects customer satisfaction. The results of this study are in line with research (Lee & Chung, 2009; Motiwalla et al., 2019; Sharma & Sharma, 2019; Tam & Oliveira, 2016; T. Zhou, 2013) who stated that information quality is an independent variable that affects customer satisfaction. If mobile banking can provide accurate, relevant, timely, complete, and easily accessible information, consumers will be satisfied with mobile banking.

The Influence of Mobile Banking Service Quality on Customer satisfaction

The multiple linear regression analysis results showed a significant value of t of 0.000 <0.05, meaning that there was a significant effect of the Service Quality variable on the Customer satisfaction variable. From the test, the standardized coefficient value (beta coefficient) is 0.321, indicating that Service Quality has a positive (unidirectional) influence on Customer satisfaction, this mean that improving the Service Quality will increase Customer Satisfaction, and vice versa. Thus, H3 is accepted. The service quality of mobile banking affects customer satisfaction. The results of this study are in line with research *by Motiwalla et al*. (2019) and (T. Zhou, 2013). Service quality plays an essential role in customer satisfaction. Thus, the development of service quality becomes a competitive driver in investment funds and strategies to improve the quality of these services (Choudrie et al., 2018).

The Effect of Customer satisfaction on Loyalty

The multiple linear regression analysis results showed a significant value of t of 0.000 <0.05, meaning that there was a significant effect of the Customer satisfaction variable on the Loyalty variable. The test's standardized coefficient (Beta) value is 0.54, indicating that customer satisfaction has a positive (unidirectional) effect on Y2. The higher the customer satisfaction, the higher the loyalty, and vice versa. Thus, H4 is accepted. Customer satisfaction affects loyalty. The results of this study are in line with research (Arhas et al., 2022; Baabdullah et al., 2019;

Sampaio et al., 2017; Q. Zhou et al., 2021). Customers who are always satisfied with mobile banking services tend to be loyal and will return to use these services in the future.

CONCLUSION

The importance of mobile banking is increasing due to technological developments with the internet and the public's need for convenience in carrying out financial transactions. Mobile banking can benefit both institutions and consumers. After all, it provides convenience, minimal service fees, bank accounts that are easier to manage, and is an attractive option for busy people, because it can save time. Banks must seriously manage and improve the quality of mobile banking to attract consumers and provide the best banking experience for consumers. Customer loyalty is primarily concerned with keeping customers using online banking services. If users enjoy mobile banking, they will feel satisfied and return to using the service in the future.

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