

Analysis of Factors Affecting Mobile Banking Customer Loyalty in the Greater Jakarta Area

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Abstract

The rapid growth of mobile banking services requires banks to better understand the factors that shape customer loyalty in an increasingly competitive digital environment. This study aims to analyze the factors influencing customer loyalty in mobile banking services in the *Jabodetabek* area by considering perceived security, customer convenience, service quality, and perceived value, with customer satisfaction as a mediating variable. This research employed a quantitative approach using a survey method. Data were collected through an online questionnaire distributed to 451 mobile banking users and analyzed using SEM-PLS approach. The results indicate that customer convenience, service quality, and perceived value have a positive and significant effect on customer loyalty. Perceived security does not have a direct effect on customer loyalty, but it has a positive and significant effect on customer satisfaction. Furthermore, customer satisfaction has a positive and significant effect on customer loyalty and mediates the relationship between perceived security, customer convenience, service quality, and customer loyalty. However, customer satisfaction does not mediate the relationship between perceived value and customer loyalty. This study provides practical implications for banking institutions in developing strategies to enhance mobile banking customer loyalty through improved convenience, service quality, and overall customer experience management. Suggestions for future research include adding several variables, particularly trust, and expanding the scope of the study.

INTRODUCTION

The development of mobile banking services in Indonesia has increased very rapidly in line with the digitalization of the banking sector and the increasing need for fast, practical, and flexible financial services (Adiningtyas & Auliani, 2024; Khatoon et al., 2020; Npueng et al., 2024). Mobile banking is no longer positioned as a supporting service, but has become the main channel in daily banking transaction activities. This condition encourages banks to not only focus on user acquisition, but also on efforts to retain customers through the formation of long-term loyalty.

In the context of digital services, customer loyalty is a key variable because loyalty reflects the sustainability of service use, reuse intention, and willingness of customers to recommend services to others (Huang et al., 2022). Customer loyalty to mobile banking services is influenced by various interrelated factors, both functional and psychological.

One of the fundamental factors in mobile banking services is the perception of security. Transaction security and personal data protection are the main prerequisites for building customer trust in digital services (Farhan Mahesa et al., 2024). Without a security guarantee,

customers tend to be reluctant to use mobile banking services on an ongoing basis.

In addition to security, customer convenience is also an important factor in encouraging the use of mobile banking (Hsu & Lin, 2023; Lolemo & Pandya, 2025; Nguyen et al., 2020). The ease of application navigation, clarity of view, and flexibility of time and place of transactions play a big role in shaping a positive user experience (Kim, Wichianrat, et al., 2024). The high level of convenience allows customers to use the service more intensively and consistently.

Another factor that is no less important is the quality of the service, which includes the reliability of the system, the stability of the application, the speed of response, and the quality of the features provided (Abubakar Siddique et al., 2023; Hanif & Lallie, 2021; Jenkins et al., 2022). Good service quality will increase the perception of service providers' professionalism and strengthen long-term relationships between banks and customers (Khan et al., 2024).

Furthermore, value perception relates to the customer's assessment of the balance between the benefits obtained and the costs or effort expended. The perception of high value encourages customers to continue using services because they are considered to provide greater benefits than other service alternatives (Muntasin et al., 2021).

In forming customer loyalty, these factors don't always work directly. Customer satisfaction serves as an affective evaluation that arises from the overall experience of using a service and is often a linking mechanism between experience quality and customer loyalty (Huang et al., 2022; Joshi, 2019; Nigatu et al., 2023).

Various previous studies have examined the factors that affect customer loyalty in the context of digital banking services. Amin's research (2016) shows that the quality of digital services has a significant influence on customer satisfaction and loyalty. Meanwhile, Kim, Wichianrat, et al. (2024) emphasized that the convenience of using digital applications directly contributes to user loyalty. Another study by Khan et al. (2024) states that service quality is a key determinant in building long-term relationships between customers and technology-based service providers. On the other hand, Muntasin et al. (2021) found that value perception has a direct influence on customer loyalty, but not always through satisfaction.

The urgency of this research is driven by three main factors. First, the level of competition among banks in mobile banking services is increasingly tight, with major banks recording tens of millions of active users. The estimated churn rate of 15-20% per year represents billions of rupiah in potential losses. Second, Generation Z (aged 18-25 years) dominates mobile banking users (66.3% in preliminary studies), and their characteristics highly adaptive to technology but also easily switching require an in-depth understanding of loyalty-building factors. Third, cybersecurity incidents in the digital banking sector continue to occur, which can erode customer trust and loyalty. Without a comprehensive understanding of loyalty-building factors, banks will struggle to retain customers in the competitive digital era.

The novelty of this study lies in four aspects. First, this study is the first to test a comprehensive model integrating perceived security, customer convenience, service quality, and perceived value on customer loyalty with customer satisfaction as a mediating variable in the context of mobile banking services in the Greater Jakarta area. Second, this study uses respondents from the four largest banks in Indonesia (BRI, BCA, Mandiri, BNI), making the results more representative than studies focusing on only one bank. Third, this study tests the mediating role of customer satisfaction simultaneously for all four independent variables,

identifying which paths are fully mediated, partially mediated, or not mediated. Fourth, this study uses a large sample size (451 respondents) and robust SEM-PLS analysis techniques, enhancing the validity and generalizability of findings.

Several studies have also highlighted the role of security in digital services. Farhan Mahesa et al. 2024 concluded that security has a significant effect on user satisfaction, but its direct influence on loyalty tends to be weak and inconsistent. Although these studies have made important contributions, the results still show a variety of findings, especially regarding the mechanism of building mobile banking customer loyalty.

Based on the study of previous research, there are several research gaps that can be identified. First, there are still differences in the results of the study related to the direct influence of security perception on customer loyalty in mobile banking services. Second, some studies only test the influence of variables such as security, comfort, service quality, and value perception separately, without integrating them in a single comprehensive model with customer satisfaction as a mediating variable. Third, research examining the relationship between value perception and customer loyalty through satisfaction mechanisms is still relatively limited and shows inconsistent results. Fourth, the differences in the context of the research object and the characteristics of the respondents, especially in the Greater Jakarta area as the center of economic and digital activity in Indonesia, are still rarely explored in depth.

Therefore, this study seeks to fill this gap by developing a research model that integrates the perception of security, customer comfort, service quality, and value perception of customer loyalty, with customer satisfaction as a mediating variable in the context of mobile banking services in the Greater Jakarta area.

Based on the background and research gaps that have been described, the purpose of this study is to analyze the influence of security perception, customer convenience, service quality, and value perception on mobile banking customer loyalty, as well as test the role of customer satisfaction as a mediating variable in the relationship.

RESEARCH METHOD

Data collection in this study used a survey method by distributing an online questionnaire using Google Form. The measurement was carried out using a Likert Scale of 1 – 5, namely scale 1 is strongly disagree, scale 2 is disagree, scale 3 is neutral, scale 4 is agreeable, and scale 5 is strongly agreed. The measurement of this study refers to previous research that was modified to suit the banking context with a quantitative approach to analyze the influence of relationships between variables through hypothesis tests. The safety variable was measured with 3 questions adapted from Sun et al. (2017) and 3 questions from Mostafa (2020). The customer convenience variable was measured with 8 questions adapted from Nigatu et al. (2023). The service quality variable was measured with 6 questions adapted from Zhou et al. (2021). The Value Perception variable was measured with 4 questions adapted from (Npueng et al., 2024). The customer satisfaction variable was measured by 4 questions from (Npueng et al., 2024) as well as 3 questions from (Nyagadza et al., 2022). The customer loyalty variable was measured with 3 questions from (Garepasha et al., 2021) and 3 questions from (Zhou et al., 2021).

The population in this study is mobile banking application users in the Greater Jakarta area (Jakarta, Bogor, Depok, Tangerang, and Bekasi). Sampling was carried out through

purposive sampling criteria, focusing on active mobile banking users from banks with the largest assets in Indonesia, such as BRI, BCA, Mandiri, and BNI. The selection of the bank is based on data that according to Bank Indonesia (BI), the bank (in terms of assets) also has a very significant number of mobile banking users. For example, BRI's BRImo has reached around 42.7 million active users by mid-2025. BCA through its mobile application recorded tens of millions of users. By choosing this bank, the study is expected to obtain a representative sample of mobile banking users in Indonesia. Respondents were selected to be at least 18 years old and had been using mobile banking for more than one year. This study applies the recommendations by Hair et al. (2017) where the determination of the number of representative samples is the number of statements in the questionnaire multiplied by 10, so that the total number of respondents in this study is at least 370 respondents.

This study is a quantitative study using the Structural Equation Model (SEM) method, processing of sample data using SmartPLS 3.0. Data collection began by distributing online questionnaires (pretest) to 30 respondents. After obtaining the results of the pretest data processing, the researcher conducted a validity test and a reliability test with SmartPLS 3.0 to analyze the factors that occurred. The analysis stage begins with testing the measurement model (outer model) to ensure the validity and reliability of the indicators. The convergent validity was well stated if the loading factor was ≥ 0.7 and the Average Variance Extracted (AVE) value was ≥ 0.5 , while the discriminant validity was tested using the Fornell-Larcker and HTMT criteria. The reliability of the construct was tested through Cronbach's Alpha and Composite Reliability (CR) values, with the reliability criteria if each value was ≥ 0.7 (Hair et al., 2017). Furthermore, structural model testing (inner model) is carried out by assessing the R^2 value to measure the predictability of the model and to see the magnitude of the influence of each independent variable on the dependent variable will use the direct effect test method. The hypothesis testing criteria were determined based on a t-statistical value of > 1.96 and a p-value of < 0.05

RESULTS AND DISCUSSION

This study involved around 451 respondents who were active users of mobile banking services in the Greater Jakarta area (Jakarta, Bogor, Depok, Tangerang, and Bekasi). Data collection was carried out online through a questionnaire, with the criteria that respondents were at least 18 years old and had used mobile banking for more than one year.

Based on the results of data processing, respondents consisted of 38.1% males and 61.9% females. In terms of age, the majority of respondents were in the age range of 18-25 years with a percentage of 66.3%. Based on domicile, respondents are spread throughout the Greater Jakarta area, with the proportion of respondents domiciled in Jakarta at 20.2%, Bogor at 18.2%, Depok at 19.5%, Tangerang at 20.4%, and Bekasi at 21.7%. This spread shows that the research sample covers urban areas with a high adoption rate of digital banking services.

Judging from the type of bank used, the majority of respondents were mobile banking users from BRImo bank by 11.1%, BCA Mobile by 55.9%, Livin by Mandiri by 27.5%, and Wondr by BNI by 5.5%. In addition, most respondents have been using mobile banking services for 3–5 years. Overall, the demographic characteristics of the respondents show that the research sample is representative and relevant to describe the behavior of mobile banking users in the Greater Jakarta area (El-Adly & Eid, 2016; Davis & Hodges, 2012; Herhausen et

al., 2019).

The instrument test is carried out as an initial stage before the collection of main research data. The purpose of the pretest is to ensure that the research instrument has an adequate level of validity and reliability, so that it is suitable to be used to measure research variables. The pretest was conducted on 30 respondents who had similar characteristics to the main research respondents. The validity test is carried out by looking at the correlation value between each indicator and the total score, while the reliability test is carried out using Cronbach's Alpha value.

Table 1. Pretest Test Results (30 Respondents)

Variabel	Number of Items	Cronbach's Alpha	Composite Reliability
Security Perception	6	0,931	0,946
Customer Convenience	8	0,959	0,965
Quality of Service	6	0,948	0,959
Perception of Value	4	0,897	0,929
Customer Satisfaction	7	0,947	0,957
Customer Loyalty	6	0,942	0,954

The test results showed that all indicators in each research variable had correlation values that met the validity criteria. In addition, Cronbach's Alpha values on all variables were above the required minimum limit (0.70). Thus, the research instrument is declared valid and reliable, and suitable for use in the collection of main research data.

Descriptive statistical analysis was carried out to provide an overview of respondents' perception of the variables studied, namely perception of security, customer comfort, service quality, perception of value, customer satisfaction, and customer loyalty. Measurements of all variables were carried out using a five-point Likert scale, ranging from strongly disagree to strongly agree.

Table 2. Results of Descriptive Statistical Test of Research Variables

Variabel	Number of Items	Mean	Std. Deviation	Category
Security Perception	6	4,027	0,834	Height
Customer Convenience	8	4,004	0,967	Height
Quality of Service	6	4,022	0,946	Height
Perception of Value	4	4,091	0,930	Height
Customer Satisfaction	7	4,064	0,945	Height
Customer Loyalty	6	4,084	0,892	Height

Based on Table 2, all research variables have a relatively high average value. This shows that respondents have a positive perception of security, customer comfort, service quality, and perception of the value of mobile banking. In addition, the high value of customer satisfaction and loyalty indicates a tendency for long-term relationships between users and service providers.

Furthermore, the convergent validity test was carried out by observing the loading factor value of each indicator and the Average Variance Extracted (AVE) value.

Table 3. Load Factor Indicator Value Test Results

Variabel	Indicator	Loading Factor
Security Perception	SEC1	0,824
	SEC2	0,841
	SEC3	0,857
	SEC4	0,846
	SEC5	0,822
	SEC6	0,863
Customer Convenience	WITH1	0,864
	WITH2	0,840
	CON3	0,842
	CON4	0,837
	CON5	0,821
	WITH6	0,850
	CON7	0,841
	WITH8	0,857
Variabel	Indicator	Loading Factor
Quality of Service	SQ1	0,857
	SQ2	0,849
	SQ3	0,851
	SQ4	0,851
	SQ5	0,834
	SQ6	0,869
Perception of Value	PV1	0,854
	PV2	0,844
	PV3	0,849
	PV4	0,869
Customer Satisfaction	SAT1	0,868
	SAT2	0,844
	SAT3	0,838
	SAT4	0,851
	SAT5	0,838
	SAT6	0,858
	SAT7	0,869
Customer Loyalty	LOY1	0,852
	LOY2	0,841
	LOY3	0,836
	LOY4	0,843
	LOY5	0,832
	LOY6	0,867

Based on Table 3, all indicators have a loading factor value of ≥ 0.70 , so they can be declared valid in measuring their respective constructs.

Table 4. Results of the Average Variance Extracted (AVE) Test

Variabel	AVE
Security Perception	0,709
Customer Convenience	0,712
Quality of Service	0,725
Perception of Value	0,729
Customer Satisfaction	0,724
Customer Loyalty	0,715

In addition, Table 4 shows that all variables have an AVE value of ≥ 0.50 , which means that the construct is able to explain more than half of the variance of the indicators. Thus, the measurement model meets the criteria of convergent validity. Reliability tests are carried out to assess the internal consistency of the research construct. The results of reliability tests using Cronbach's Alpha and Composite Reliability are presented in Table 5 below.

Table 5. Reliability Test Results

Variabel	<i>Cronbach's Alpha</i>	<i>Composite Reliability</i>
Security Perception	0,918	0,936
Customer Convenience	0,942	0,952
Quality of Service	0,924	0,941
Perception of Value	0,876	0,915
Customer Satisfaction	0,937	0,948
Customer Loyalty	0,920	0,938

Based on Table 5, all variables have Cronbach's Alpha and Composite Reliability values ≥ 0.70 . This shows that the research instruments have a good level of reliability and are consistent in measuring each construct.

Figure 2 shows the structural model of the research processed using SmartPLS. This model describes the relationship between the variables of security perception, customer satisfaction, service quality, and value perception on customer satisfaction and customer loyalty. In addition, customer satisfaction is positioned as a mediating variable that connects independent variables to customer loyalty.

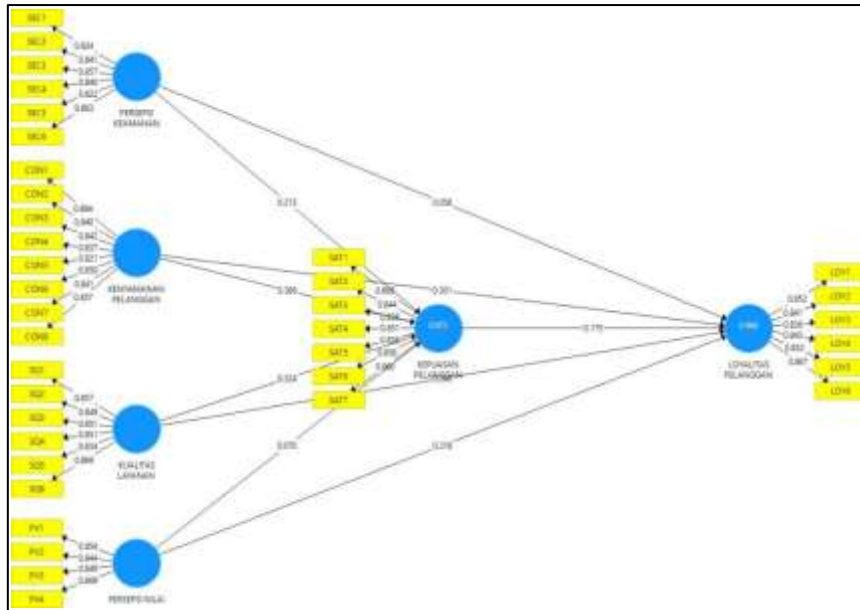


Figure 1. Path Diagram T-Value

Figure 3 shows the results of testing the significance of the relationship between variables through the direct effect method on SmartPLS. The t-statistic and p-value values in each pathway are used as the basis for determining the acceptance or rejection of the research hypothesis. The results of this test are then systematically summarized in a hypothesis testing table to facilitate the interpretation of the research results.

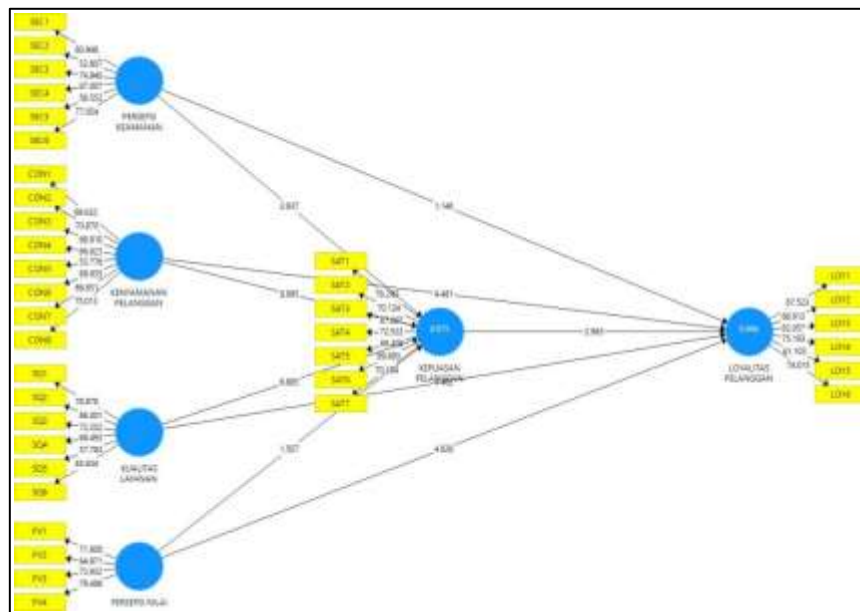


Figure 2. Path Diagram Direct Effect

The evaluation of the structural model was carried out by looking at the value of the determination coefficient (R^2) on the endogenous variable. The value of R^2 is presented in Table 6.

Table 6. R-Square Value Test Results

Variable endogenous	R ²
Customer Satisfaction	0,975
Customer Loyalty	0,966

Based on Table 6, the R-square value (R²) shows that the exogenous variables in the research model have a very strong ability to explain endogenous variables. The R² value for customer satisfaction is 0.975, which means that 97.5% of the variation in customer satisfaction can be explained by the perception of security, customer convenience, quality of service, and perception of value. Meanwhile, the R² value for customer loyalty is 0.966, which suggests that 96.6% of customer loyalty variations can be explained by a combination of independent variables and customer satisfaction as mediating variables.

According to Hair et al. (2017), in the SEM-PLS approach, the R-square value is used as the main indicator to assess the model's explainability, where values above 0.75 are categorized as strong (substantial). Therefore, the high R-square value in this study shows that the research model has excellent and realistic explanatory capabilities, considering that the variables used are the main factors relevant in the context of mobile banking services as well as predictive analytical objectives.

In addition to the R-square value, the evaluation of the inner model in SEM-PLS was also carried out through Variance Inflation Factor (VIF) testing to ensure that there was no multicollinearity problem between exogenous latent constructs. Hair et al. (2017) also explain that the VIF value of the inner model is used to assess the level of collinearity between predictor variables in explaining endogenous variables, with VIF values below 5 still acceptable, and in certain contexts higher values can be tolerated if the constructs tested are conceptually interrelated.

Table 7. Results of the Variance Inflation Factor (VIF) Value Test

Variable Predictor	Customer Satisfaction (VIF)	Customer Loyalty (VIF)
Customer Convenience	37,825	43,944
Quality of Service	29,779	34,016
Security Perception	29,364	31,187
Perception of Value	23,178	23,376
Customer Satisfaction	–	40,336

Based on the results of the VIF inner model test, the VIF value in this study shows a relatively high number. However, this condition can be understood considering that the variables used, such as security perception, customer comfort, service quality, and value perception, are perceptual constructs that are conceptually interconnected in shaping customer satisfaction and loyalty in mobile banking services.

Hair et al. (2017) emphasized that in predictive studies using perceptual latent constructs, high VIF values do not necessarily indicate serious problems as long as the direction and significance of the relationships between variables remain consistent and supported by a strong

theoretical foundation. High VIF values can occur in models with very strong explanatory power (R^2) and theoretically interrelated constructs. Thus, the high value of the VIF inner model in this study does not necessarily indicate serious methodological problems, but is a logical consequence of the predictive objectives of SEM-PLS and the conceptual proximity between the research variables. As long as the relationships between constructs are supported by a strong theoretical foundation and do not interfere with the interpretation of the main path coefficients, then the structural model can still be considered feasible and informative to explain the behavior of mobile banking customers.

The results of testing the hypothesis of the direct relationship between variables are presented in Table 8.

Table 8. Direct Effect Hypothesis Test Results

Hipotesis	Hubungan	Coefficin	t-statistic	p-value	Verdict
H1	The perception of security has a positive effect on customer loyalty.	0,058	1,042	0,298	The data does not support the hypothesis
H2	Customer comfort has a positive effect on customer loyalty.	0,301	4,500	0,000	The data support the hypothesis.
H3	Service quality has a significant effect on customer loyalty.	0,240	4,770	0,000	The data support the hypothesis.
H4	There is a significant relationship between value perception and customer loyalty.	0,218	4,832	0,000	The data support the hypothesis.
H5	The perception of security has a significant effect on customer satisfaction.	0,213	3,881	0,000	The data support the hypothesis.
H6	Customer satisfaction has a significant influence on customer satisfaction.	0,389	8,416	0,000	The data support the hypothesis.
H7	There is a positive influence between service quality and customer satisfaction.	0,324	7,158	0,000	The data support the hypothesis.
H8	Value perception has a positive influence on customer satisfaction.	0,070	1,409	0,159	The data does not support the hypothesis
H9	Customer satisfaction has a significant influence on customer loyalty.	0,175	2,853	0,005	The data support the hypothesis

Based on the results of the Direct Effect test, it can be concluded that most of the relationships between variables in the research model are proven to be significant, both on customer satisfaction and customer loyalty. The variables of convenience and quality of service show the most consistent and strong influence. Meanwhile, the perception of security and the perception of value show different patterns of influence, namely significant in one pathway but not significant in the other. Furthermore, the results of testing the mediating effect of customer satisfaction are presented in Table 9.

Table 9. Mediation Variable Test Results

Hipotesis	Mediation Pathway	t-statistic	p-value	Conclusion of Mediation
H10a	Customer satisfaction mediates the influence of security perceptions on customer loyalty.	2,377	0,018	The data support the hypothesis.
H10b	Customer satisfaction mediates the influence of customer comfort on customer loyalty.	2,749	0,006	The data support the hypothesis.
H10c	Customer satisfaction mediates the influence of service quality on customer loyalty.	2,679	0,008	The data support the hypothesis.
H10d	Customer satisfaction mediates the influence of Value Perception on customer loyalty.	1,106	0,269	The data do not support the hypothesis.

Based on Table 9, the results of the mediation effect test using specific indirect effects analysis show that customer satisfaction plays a mediator variable in several relationship paths in the research model. Customer satisfaction has been shown to significantly mediate the influence of security perceptions, customer convenience, and service quality on customer loyalty.

Furthermore, the results of the study show that customer satisfaction fully mediates the influence of security perception on customer loyalty, because the direct influence is insignificant while the indirect influence is significant. Meanwhile, customer satisfaction acts as a partial mediator in the relationship between customer comfort and service quality to customer loyalty, because both direct and indirect influences are equally significant. In contrast, customer satisfaction does not mediate the influence of value perception on customer loyalty, which suggests that value perception has more direct effect without going through customer satisfaction mechanisms.

These findings indicate that the role of customer satisfaction as a mediator is selective and stronger on variables directly related to the experience of using mobile banking services.

The demographics of respondents in this study are dominated by mobile banking users with the age range of generation Z, which is a young age group that grows and develops in the midst of rapid advances in digital technology. The characteristics of Generation Z who are familiar with technology, adaptive to digital innovation, and prioritize convenience and flexibility in daily activities make application-based services part of their lifestyle.

This condition is in line with the findings of Ramadhani Okatvia (2025) who stated that Generation Z has a high dependence on technology and makes digital services the main means of supporting daily activities. In the context of mobile banking, these characteristics can explain the strong influence of convenience and service quality on customer satisfaction and loyalty. For Generation Z, ease of use of applications, transaction speed, and system stability are key factors in shaping the user experience, while security aspects tend to be perceived as basic prerequisites that must be met by service providers.

This study aims to analyze the factors that affect mobile banking customer loyalty in the Greater Jakarta area by considering the role of security, convenience, service quality, value

perception, and customer satisfaction as mediating variables. In general, the results of the study show that the developed model has very strong explanatory capabilities, as reflected in the high values of the determination coefficient (R^2) and VIF on the variables of customer satisfaction and customer loyalty. These findings indicate that the combination of independent variables used in this study is relevant and able to comprehensively explain the loyalty behavior of mobile banking users.

The effect of security perception on customer loyalty showed insignificant results. This finding can be explained through the Two-Factor Theory proposed by Herzberg in 1959 in research conducted. In the context of services, the safety factor can be categorized as a hygiene factor, which is a basic factor that must be met to prevent dissatisfaction, but does not directly encourage the formation of customer loyalty. In other words, security is the minimum prerequisite that customers expect in the use of mobile banking services. In the research of Amalia & Wusko (2025) which also discusses the use of mobile banking, it is stated that satisfaction does not directly affect loyalty, but there is a factor in customers feeling satisfaction first from a service which then forms loyalty.

The influence of customer comfort on customer loyalty shows positive and significant results. This shows that the ease of use of the application, clarity of view, and flexibility of transactions without time and place restrictions are the main factors that encourage customers to continue to use mobile banking services on an ongoing basis. These results support the findings (Kim, Wichianrat, et al., 2024) which conclude that the ease of use and flexibility of digital services directly contribute to the satisfaction and loyalty of technology-based application users. These results show that convenience not only increases customer affective evaluation (satisfaction), but is also able to form behavioral commitments in the form of continuous use and intention to recommend mobile banking services.

Furthermore, service quality has been proven to have a positive and significant effect on customer loyalty. These findings confirm that system reliability, application stability, and speed and accuracy of service are important factors in building long-term relationships between customers and mobile banking service providers. These findings are in line with research (Khan et al., 2024) which emphasizes that service quality is a major determinant in building customer satisfaction and loyalty, especially in the technology-based service sector. These findings reinforce the view that service quality is the main foundation in building long-term relationships between banks and customers in the digital banking era.

Value perception also shows a significant influence on customer loyalty. This shows that when customers feel that the benefits obtained are proportional to the costs or effort expended, the tendency to continue using mobile banking services will increase. These findings are consistent with research (Muntasin et al., 2021) which states that value perceptions are more cognitive and rational, so their influence on loyalty is not always through satisfaction. These findings suggest that perceived value perceptions of customers, such as functional benefits, cost efficiency, and relative advantages over other alternatives, play a greater role in shaping long-term decisions to stick with mobile banking than in shaping momentary emotional satisfaction.

The effect of security perception on customer satisfaction shows positive and significant results. These findings indicate that a sense of security in transactions and the protection of personal data can increase customer satisfaction in using mobile banking services. These

findings are in line with Farhan Mahesa et al.'s 2024 research which states that the security of digital services plays a key prerequisite in building a sense of security and user satisfaction, but is not always a differentiating factor in forming loyalty directly. These findings indicate that security is a basic hygiene factor in mobile banking services. Customers consider security as the main prerequisite that must be met by banks. When the security aspect has been met, it increases the user's sense of security which ultimately drives satisfaction. However, security alone is not enough to form loyalty directly. Loyalty is only formed when that sense of security is internalized through a satisfying user experience. In other words, customer satisfaction plays an important role as a mechanism that bridges the influence of security on loyalty.

Convenience has a positive and significant influence on customer satisfaction. The easy, practical, and efficient user experience directly increases customer satisfaction in utilizing mobile banking services (Hanny et al., 2021). This is in line with research Tresiya et al. (2019) which confirms that comfort is subjective and influenced by individual experiences. Thus, the level of comfort cannot be measured only through observation, but needs to be explored directly from customer perceptions to obtain a more accurate picture of their comfort in using services.

Service quality has also been proven to have a positive and significant effect on customer satisfaction. This shows that the better the service performance perceived by the customer, the higher the level of satisfaction that is formed. Furthermore, various studies show that the dimensions of service quality, such as product variety, system reliability, response speed, interactivity, and service stability, have a significant influence on the level of consumer satisfaction. This indicates that system performance, application reliability, response speed, and quality of features provided by mobile banking are the main determinants in building a positive customer experience.

In contrast to other variables, value perception does not show a significant influence on customer satisfaction. The findings of value perception that did not have a significant effect on customer satisfaction in this study were not in line with some previous findings. However, the empirical study conducted Siahaan et al., (2025) explains that the high or low perception of value does not have much effect on the level of satisfaction that is desired. In other words, customers can feel loyal because they value mobile banking, even though the level of satisfaction they feel is not directly affected by the perception of that value. These findings are in line with the view of Zeithaml (1988) who stated that cognitive evaluation is not always directly proportional to consumers' affective responses.

The effect of customer satisfaction on customer loyalty shows positive and significant results. These findings confirm that satisfied customers tend to have the desire to continue using mobile banking services and recommend them to others. These results support research Huang et al., (2022) that states that customer satisfaction is a major factor in the formation of long-term customer loyalty. These results confirm the central role of satisfaction as a key determinant of loyalty in the context of mobile banking services. Customers who are satisfied with the application experience will have a greater tendency to reuse, maintain relationships with banks, and recommend services to others. These findings reinforce the argument that customer satisfaction is key to building long-term loyalty in the digital banking industry (Camilleri & Filieri, 2023; Migdadi, 2021; Mosavi et al., 2018).

Mediation effect testing showed that customer satisfaction significantly mediated the

influence of security, convenience, and service quality on customer loyalty. This indicates that these three variables not only have a direct effect on loyalty, but also work through the customer's affective evaluation mechanism. In contrast, customer satisfaction does not mediate the influence of value perception on customer loyalty. These findings make it clear that Value Perception is more cognitive and rational, so its effect on loyalty does not necessarily have to be through satisfaction.

Thus, the results of this study confirm that mobile banking customer loyalty is formed through a combination of functional factors, user experience, and affective evaluation of customers. Convenience and quality of service emerged as the most consistent and dominant factors in influencing satisfaction and loyalty, while security played an important supporting role through customer satisfaction. Value Perception, on the other hand, plays a direct role in forming loyalty without going through satisfaction. These findings provide a more comprehensive understanding of the mechanism for forming mobile banking customer loyalty in the Greater Jakarta area.

CONCLUSION

This study aims to analyze the influence of security, convenience, service quality, and value perception on mobile banking customer loyalty with customer satisfaction as a mediating variable. Based on the results of the data testing and discussions that have been conducted, it can be concluded that in general, the research model is able to explain the important factors that affect customer loyalty in the use of mobile banking services. The results of the study show that customer comfort and service quality have the most dominant role in increasing customer loyalty, both directly and through customer satisfaction. The easier the application is to use, flexible, and supported by reliable and stable service performance, the higher the level of customer satisfaction and loyalty to mobile banking services. These findings confirm that user experience is a key factor in retaining customers in the digital banking era. The results of mediation testing showed that customer satisfaction acted as a mediating variable in the relationship between security perception, customer comfort, and service quality to customer loyalty. In contrast, customer satisfaction does not mediate the relationship between value perception and customer loyalty. Thus, customer satisfaction has proven to be an important mechanism in bridging the influence of service experience factors on mobile banking customer loyalty. Overall, this study concludes that mobile banking customer loyalty is more shaped by the quality of the user experience, especially convenience and quality of service, than by functional factors alone. These findings are expected to make a theoretical contribution to the development of digital banking and marketing literature, as well as become practical considerations for mobile banking service providers in designing strategies to increase customer satisfaction and loyalty.

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