

ENHANCING E-CUSTOMER LOYALTY IN THE BANKING SECTOR IN INDONESIA: THE MEDIATING ROLE OF E-SATISFACTION AND E-TRUST

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ABSTRACT

Although previous studies have examined e-satisfaction and e-trust as mediators in various contexts, this study examines them as mediators within a dual-pathway model, specifically in Indonesia's banking sector. This study aims to examine the effect of m-banking service quality on e-customer loyalty, with e-customer satisfaction and e-trust as mediators, using a quantitative approach. There were 140 purposively selected samples, namely active users of BRI^{mo} services and priority customers of the BRI Padang branch, Indonesia. Data were collected via online questionnaires and analyzed using SmartPLS 3.0 with structural equation modeling. The results show that m-banking service quality has a positive and significant effect on e-customer satisfaction and e-trust, but not on e-customer loyalty. E-customer satisfaction had a positive and significant effect on e-customer loyalty. On the other hand, e-trust had no significant effect on e-customer loyalty. E-customer satisfaction mediates the relationship between m-banking service quality and e-customer loyalty, whereas e-trust does not. The implications of this study emphasize the importance of customer satisfaction and trust in banking institutions when using digital services in order to increase sustainable use.

Keywords: *M-Banking Service Quality; E-Customer Loyalty; E-Customer Satisfaction; E-Trust*

INTRODUCTION

Digital transformation has revolutionized the financial services sector, particularly the banking industry, by introducing technology-based services that are increasingly fast, efficient, and personalized. The 4.0 industrial revolution has brought about major changes in financial service innovation, including mobile banking (m-banking). M-banking is a digital banking service that allows customers to conduct financial transactions in real time via mobile devices. In Indonesia, m-banking adoption has increased significantly in recent years in line with the growing demand for flexible, secure financial services accessible without time or location restrictions (Singh, 2024).

Mobile banking (m-banking) is a fundamental innovation in the banking sector that leverages advances in information and communication technology to enhance the convenience and efficiency of transactions for customers. It has evolved into a digital-friendly, responsive banking tool, supported by a security system that significantly streamlines the time customers spend accessing banking services (Qatawneh & Makhoulouf, 2025). The quality of m-banking services can shape user perceptions and experiences across dimensions such as system reliability, ease of interface navigation, data

security, and application responsiveness. Therefore, in creating customer satisfaction, these dimensions collectively influence customers' evaluation of the performance of the digital services they receive.

Alnaim et al. (2022) show that the influence of m-banking service quality on customer loyalty is not always direct but can operate through indirect mechanisms, mediated by psychological variables such as satisfaction and electronic trust. Melinda et al. (2023) found that superior digital service quality contributes to customer trust in digital banking service providers. This level of trust, in turn, contributes to increased customer satisfaction, thereby encouraging long-term loyalty (Florence & Aprillia, 2025).

Beyond functional aspects, customers also consider psychological factors such as trust and emotional satisfaction when assessing the quality of their interactions with m-banking applications. Customer satisfaction is significantly influenced by service quality, whether physical or digital (Li et al., 2021). Several experts have also examined the mediating role of e-customer satisfaction on the use of m-banking service quality on e-customer loyalty, where most of them found that to gain customer loyalty, customers tend to recommend it to others and express their satisfaction through

social media and messaging applications on their mobile phones (Marliyah et al., 2021). Ayinaddis et al. (2023) in their study in Ethiopia found that banks' failure to improve the quality of digital services has a significant impact on customer loyalty, including among customer segments that previously showed high loyalty. Digital customer loyalty is an important indicator for ensuring customer retention and reducing long-term acquisition and marketing costs.

Bank Rakyat Indonesia (BRI), as the Himbara bank with the highest number of mobile banking users via the BRImo application, is committed to delivering innovation in digital banking technology to all customers, especially millennials and priority customers in Indonesia. Based on the 2022-2024 trend, the number of BRImo users has increased each year. The average annual increase in BRImo users is 180,000 users. Specifically, for the BRI Regional Padang in 2022, there were 398,511 users (2.60%), and by 2024, there will be 816 users (2.68%).

The features available in the BRImo application can have a positive impact on increasing customer satisfaction with the quality of physical and digital services (Khatoon et al., 2020), such as information services, transaction services, and communication services, which overall provide a more efficient and effective service experience for all segments of Bank BRI customers, especially priority customers. Priority customers are individual customers with savings or investments above a certain limit in accordance with bank policy. Priority customers are entitled to special services, exclusive facilities, and comprehensive asset management that results in a personal relationship and exceeds expectations, thereby driving customer satisfaction (Syafri et al., 2019; Khan et al., 2019; Khan et al., 2023). However, another study found that e-service quality does not significantly affect e-satisfaction (Ashiq & Hussain, 2024).

Therefore, the approach to priority customers can be done through double mediation via e-satisfaction and e-trust in the use of BRImo to understand the relationship between the quality of m-banking services and customer loyalty. This study is relevant to further development, especially in the context of Indonesia's digital banking industry, which continues to undergo significant transformation in technology adoption and in customer expectations for fast, secure, and reliable services.

Several experts have also examined the mediating role of e-customer satisfaction in the relationship between m-banking service quality and e-customer loyalty, where customer loyalty

generally leads to recommendations to others and to the expression of satisfaction through social media and messaging apps on their phones (Suariedewi & Suprapti, 2020).

In providing quality electronic m-banking services, Ayinaddis et al. (2023) identify several dimensions as benchmarks: reliability, system security, response speed to customer requests, and application ease of use. These dimensions can increase customers' perceptions of satisfaction and electronic trust, which ultimately impact customer loyalty. Another factor, according to Sembiring and Iskanto (2025), is the improvement in the quality of m-banking services, namely ease of use, service efficiency, and the ability to meet personal needs. Thus, service quality is determined not only by the application's technical performance but also by the extent to which the digital system can provide an experience tailored to individual users' preferences and expectations.

Research by Sharma and Sharma (2019) shows that the combination of system quality and interpersonal interaction quality is an important dimension in the formation of sustainable trust in m-banking applications. Melinda et al. (2023) in their research on m-banking users in Indonesia, found that e-trust mediates the relationship between electronic service quality and e-loyalty. In this case, e-trust serves as a bridge connecting positive perceptions of services with the repeated decision to continue using services from the same bank. This means that even with high service quality, without trust, loyalty will not be optimally created.

Another study conducted by Alnaim et al. (2022) also reinforces that e-trust has cognitive and affective dimensions, namely logical evaluation and emotional feelings towards digital banking services (m-banking), so that it can reflect the extent to which customers feel confident and believe that m-banking can carry out transactions safely with a perceived usefulness relationship in the long term (Almaiah et al., 2023). According to Alnaim et al. (2022), e-satisfaction occurs when customers compare the actual performance of digital services (e.g., transaction speed, ease of navigation, or data security) with their initial expectations, thereby forming service satisfaction and encouraging customer loyalty, such as continuing to use m-banking and recommending it to others.

This study offers some novelties. First, this study uses a dual-pathway model analysis. Most previous studies have examined the roles of e-satisfaction and e-trust in distinct roles (Rohwiyati et al., 2024; Hafidz & Ali, 2024; Lolemo & Pandya, 2025). Second, this study is conducted in

the banking sector, particularly in the context of an emerging economy such as Indonesia. Nevertheless, some research has examined the mediating roles of e-satisfaction and e-trust within a single model across various contexts. Qatawne et al. (2024) found a significant mediating role of e-satisfaction and e-trust in the context of e-government services. However, another study found that e-satisfaction and e-trust did not significantly mediate the effect of e-service quality on e-loyalty in the context of online travel agencies (Alnaim et al., 2022). In addition, a previous study has examined e-satisfaction and e-trust as moderators (Al-dweeri et al., 2017). Therefore, it is not yet clear what role e-satisfaction and e-trust play, specifically in Indonesia's banking sector. Therefore, this study attempts to fill the gap by offering a conceptual model to examine the influence of m-banking service quality on e-customer loyalty, mediated by e-customer satisfaction and e-trust in Indonesia

RESEARCH METHODS

This study used a quantitative approach and hypothesis testing. Primary data were collected by distributing online questionnaires to respondents. The questionnaire structure was based

on a five-point Likert scale, which allowed respondents to determine their decisions: (1) strongly disagree; (2) disagree; (3) neutral; (4) agree; and (5) strongly agree. The sample consisted of 140 people selected through purposive sampling, namely active users of BRImo and priority customers of BRI Padang, West Sumatra. In SEM models, the required sample size is typically determined by multiplying the total number of indicators by a factor of 5 to 10 (Hair et al., 2021). This study has 28 indicators, so the minimum required sample size is $27 \times 5 = 140$. Therefore, there are 140 samples in this study.

The research constructs for the m-banking service quality variable are based on Arcand et al. (2017); the e-customer satisfaction and e-trust variables are based on Albashrawi and Motiwalla (2019); and the e-customer loyalty variable is based on Amin (2016).

Furthermore, the data analysis technique used was Structural Equation Modeling (SEM) with SmartPLS 3.0. The tests carried out included an outer model test comprising a validity test and a reliability test, as well as an inner model test comprising R-squared and hypothesis testing (Hair et al., 2021). Figure 1 presents the conceptual framework of this study.

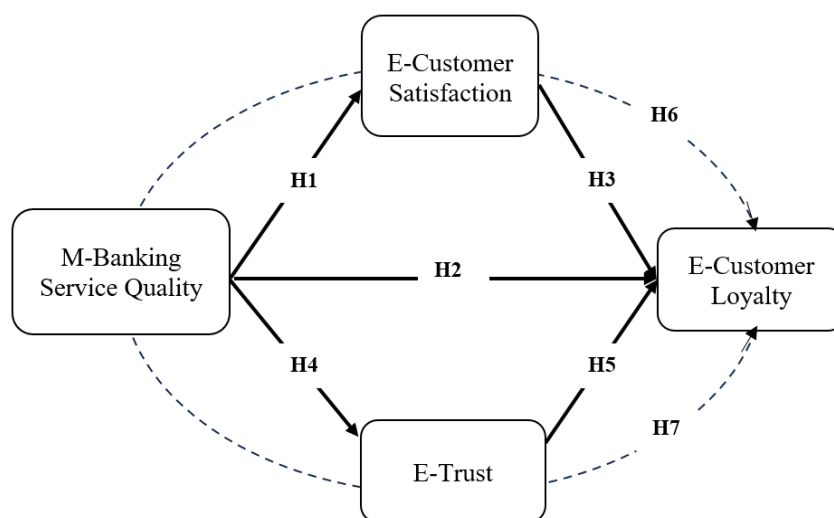


Figure 1. The Conceptual Framework

RESEARCH RESULTS

Respondents

The research data were obtained from 140

priority customers who use BRImo services in Padang, West Sumatra, and their characteristics are summarized in Table 1.

Table 1. Demographic Profiles of The Respondents (N = 140)

Characteristics	Frequency	Percentage
<i>Age</i>		
61-79 years old (Baby Boomers)	8	5.7%
45-60 years old (Gen X)	19	13.6%
29-44 years old (Millennials)	84	60.0%
17-28 years old (Gen Z)	29	20.7%
<i>Marital Status</i>		
Unmarried	23	16.4%
Married	114	81.4%
Divorce	3	2.1%
<i>Education Level</i>		
Senior High School	9	6.4%
Diploma	15	10.7%
Undergraduate	95	67.9%
Master	20	14.3%
Doctoral	1	0.7%
<i>Occupation</i>		
Employees	26	18.6%
Entrepreneurial	96	68.6%
Student	5	3.6%
Housewife	8	5.7%
Retiree	5	3.6%
<i>Income per Month (Indonesian Rupiah)</i>		
Less than IDR25.000.000	9	6.4%
IDR25.000.001 - 50.000.000	25	17.9%
IDR50.000.001 - 100.000.000	95	67.9%
More than IDR100.000.001	11	7.9%
<i>Duration in Using BRI Prioritas</i>		
Less than 1 year	44	31.4%
1-5 years	52	37.1%
5-10 years	33	23.6%
More than 10 years	11	7.9%

Table 1 shows data on respondents, namely priority customers who use BRImo services in Padang, West Sumatra, who were sampled in the study, totaling 140 people. Most of the respondents were millennials, married, had a bachelor's degree, worked as entrepreneurs, and

had been using BRI Priority services for 1-5 years.

Analysis

The results of the outer testing used for validity and reliability testing are presented in Table 2.

Table 2. Outer Model Results

Variables/Indicators	Outer Loadings	Cronbach's Alpha	Composite Reliability	Results
<i>M-Banking Service Quality</i>		0.974	0.977	Reliable
M-banking (BRImo) is enjoyable	0.757			Valid
M-banking (BRImo) provides convenience	0.868			Valid
M-banking (BRImo) is easy to use	0.888			Valid
The color design, font size, graphics, animations, etc., of the M-banking (BRImo) application are very professional	0.860			Valid
The design of the M-banking (BRImo) application is creative	0.879			Valid
Overall, the design of the M-banking (BRImo)	0.902			Valid

application is visually appealing				
Personal information provided in the BRImo application is well-protected	0.872			Valid
Online transactions made through BRImo are secure	0.905			Valid
There is a guarantee of privacy for personal information when conducting transactions with M-banking (BRImo)	0.865			Valid
You can contact the call center or RM Priority online if you encounter difficulties using BRImo	0.738			Valid
Bank BRI offers testimonials from customers who use BRImo	0.813			Valid
My banking productivity has increased through M-banking (BRImo)	0.892			Valid
Bank BRI provides convenience in transactions even through M-banking (BRImo)	0.927			Valid
The effectiveness of my banking activities has improved through M-banking (BRImo)	0.887			Valid
The BRIMO app is very easy to use to find what you're looking for regarding banking services	0.933			Valid
Overall, M-banking (BRImo) is very easy to operate	0.898			Valid
<i>E-Customer Satisfaction</i>		0.972	0.980	Reliable
Satisfaction and comfort with banking transaction services using BRImo	0.974			Valid
Very satisfied with the decision to use BRImo services	0.955			Valid
The decision to choose and use the BRImo app was the right one	0.950			Valid
Satisfaction with the experience of using BRImo services	0.961			Valid
<i>E-Trust</i>		0.939	0.961	Reliable
Trust that the BRImo app protects your privacy and data confidentiality	0.941			Valid
The BRImo app is reliable in handling customer complaints	0.934			Valid
The BRImo app cares about your transaction convenience	0.956			Valid
<i>E-Customer Loyalty</i>		0.970	0.977	Reliable
Recommend the use of M-banking (BRImo) to others	0.933			Valid
Encourage others to use M-banking (BRImo)	0.926			Valid
Share positive information about M-banking (BRImo) with others	0.966			Valid
Recommend the BRImo app to someone who asks for advice	0.947			Valid
Continue and keep using the BRImo app	0.949			Valid

Based on Table 2, all indicators in each variable are valid because the outer loadings are greater than 0.7. All variables are also reliable because they meet the cut-off used in this study (Cronbach's alpha: m-banking service quality 0.974; e-customer satisfaction 0.972; e-trust 0.939;

and e-customer loyalty 0.970 are greater than 0.7, while the composite reliability of m-banking service quality 0.977; e-customer satisfaction 0.980; e-trust 0.961; and e-customer loyalty 0.977 are greater than 0.8).

Table 3. Model Testing Index

Endogen Variables	Cut of Value	R ²	Model Evaluation
E-Customer Satisfaction	≥ 0,20	0.889	Fit
E-Trust	≥ 0,20	0.816	Fit
E-Customer Loyalty	≥ 0,20	0.905	Fit

Based on Table 3, the model is acceptable because all endogenous variables have an R-squared value greater than 0.2. The endogenous variable e-customer satisfaction has an R-squared value of 0.889 in the strong category; the variable

e-trust has an R-squared value of 0.816 in the strong category; and the variable e-customer loyalty has an R-squared value of 0.905, also in the strong category.

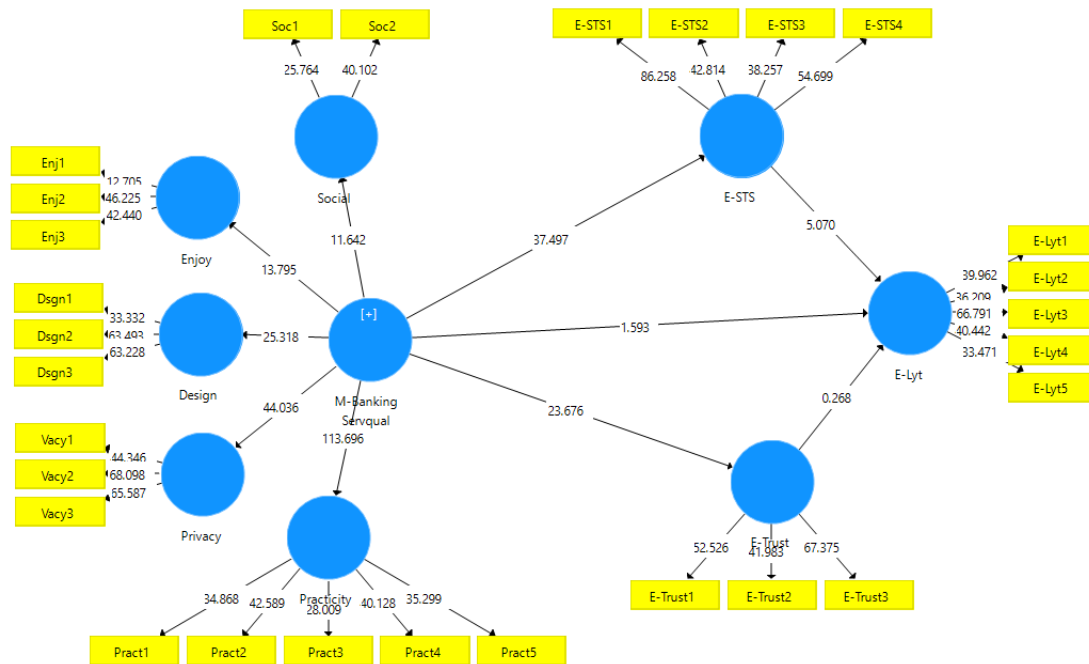
**Figure 2. Result of The Structural Model**

Figure 2 shows the estimation of indicators as functions of variables and the relationships among variables. All indicators have contributed to the formation of their respective variables. The Vacy2 indicator shapes m-banking

service quality; E-STS1 is the main indicator of e-customer satisfaction; E-Trust3 is the main indicator of e-trust; and E-Lyt3 is the main indicator of e-customer loyalty.

Table 4. The Result of Hypothesis Testing

Hypothesis	β	p-value	Results
H1: M-Banking Service Quality → E-Customer Satisfaction	0.943	0.000	Supported
H2: M-Banking Service Quality → E-Customer Loyalty	0.257	0.111	Not Supported
H3: E-Customer Satisfaction → E-Customer Loyalty	0.678	0.000	Supported
H4: M-Banking Service Quality → E-Trust	0.903	0.000	Supported
H5: E-Trust → E-Customer Loyalty	0.030	0.268	Not Supported
H6: M-Banking Service Quality → E-Customer Satisfaction → E-Customer Loyalty	0.639	0.000	Supported
H7: M-Banking Service Quality → E-Trust → E-Customer Loyalty	0.027	0.790	Not Supported

Notes: β = Standard Coefficients

Table 4 shows the flow of influence between variables in the model. M-banking service quality has a positive and significant effect on e-customer satisfaction ($\beta = 0.943$, p -value < 0.05), supporting H1. M-banking service quality has a positive but insignificant effect on e-customer

loyalty ($\beta = 0.257$, p -value > 0.05), which does not support H2. E-customer satisfaction has a positive and significant effect on e-customer loyalty ($\beta = 0.678$, p -value < 0.05), supporting H3. M-banking service quality has a positive and significant effect on e-trust ($\beta = 0.903$, p -value < 0.05), supporting

H4. E-trust has a positive but insignificant effect on e-customer loyalty ($\beta = 0.030$, $p\text{-value} > 0.05$), which does not support H5. M-banking service quality has a positive and significant effect on e-customer loyalty through e-customer satisfaction ($\beta = 0.639$, $p\text{-value} < 0.05$), supporting H6. Finally, M-banking service quality has a positive but insignificant effect on e-customer loyalty through e-trust ($\beta = 0.027$, $p\text{-value} > 0.05$), which does not support H6.

DISCUSSION

The results of hypothesis 1 testing show that m-banking service quality has a positive and significant effect on e-customer satisfaction among *BRI Prioritas* Padang customers. These results are consistent with research by Ikram (2024), which shows that the quality of m-banking services positively affects e-customer satisfaction. Based on the study, the m-banking service quality of BRImo for *BRI Prioritas* customers supports the effectiveness of activities, thereby increasing satisfaction among *BRI Prioritas* customers in Padang. The banking sector is in dire need of loyal customers, as they are valuable assets for companies facing increasingly competitive digital competition (Li et al., 2021). The availability of m-banking services to facilitate customer transactions is considered a key factor in successfully maintaining customer loyalty (Bui et al., 2022). As Parasuraman et al. (2005) state, if service performance meets or exceeds expectations, the service is considered high quality. Conversely, if performance falls short of expectations, the service is considered subpar. In this study, BRImo's service was found to be satisfactory, thereby increasing customer satisfaction.

The results of hypothesis 2 testing indicate that m-banking service quality does not positively affect e-customer loyalty. This is in line with the research by Fajarini and Meria (2020). In addition, Andrian and Fadillah (2021) found that m-banking service quality has no significant effect on e-customer loyalty in certain areas, which warrants further examination to ensure that all aspects of *BRI Prioritas* Padang's services consistently meet customer expectations. Loyalty for *BRI Prioritas* customers cannot be measured solely by the use of a well-functioning application, as this is already a basic expectation; there must also be an emotional bond. BRImo, as an application for *BRI Prioritas* customers, must provide financial services effectively and efficiently. Therefore, in this study, mediation is needed as a variable that can improve *BRI Prioritas* customer service by considering e-customer satisfaction.

The results of hypothesis 3 testing show that e-customer satisfaction has a positive and significant effect on e-customer loyalty. These results indicate that the level of satisfaction of *BRI Prioritas* Padang customers will determine the strength or weakness of their loyalty. Customer loyalty has been shown to encourage them to share positive experiences of their BRImo transactions and to recommend it to their colleagues and relatives. The findings of this study are consistent with the research by Suariedewi and Suprpti (2020), which states that customer satisfaction significantly affects customer loyalty. meaning that when customers feel comfortable conducting transactions and their needs and desires are met through the m-banking facility (BRImo), they will use it consistently and recommend it to colleagues, family, and others. Customer loyalty to mobile banking refers to their desire to continue using the same service provider (Zhou et al., 2021).

The results of hypothesis 4 testing show that m-banking service quality has a positive and significant effect on e-trust. This study supports the findings of Goutam and Gopalakrishna (2018), which state that the quality of m-banking services has a significant effect on e-trust. The phenomenon is that *BRI Prioritas* Padang customers' evaluation of electronic service quality will affect their trust in the service. This includes customer privacy guarantees, transaction security, quick responses from customer care (priority banking), and confidence in using BRImo services. In this case, improvements in the quality of electronic services on BRImo increase trust in these services. This study is supported by previous research by Parasuraman et al. (2005), Tran and Corner (2016), and Suariedewi and Suprpti (2020), which confirms the positive impact of m-banking service quality on e-trust, showing that quality BRImo services can enhance the experience and build the trust of *BRI Prioritas* customers in using BRImo.

The results of hypothesis 5 testing indicate that e-trust does not have a positive and significant effect on e-customer loyalty. This statistical evidence shows that e-trust in BRImo's services and application facilities cannot guarantee the emergence of e-customer loyalty. Under certain conditions, this can lead to an increase in overly rigid trust among *BRI Priority* customers, reducing flexibility in using the BRImo application and resulting in a decline in customer loyalty. In addition, other studies show that e-trust's influence on e-loyalty can lead to negative outcomes due to a conflict between trust (security) and convenience. *BRI Priority* customers strongly trust Bank BRI, which implements a multi-layered

security system (such as complex double authentication, very fast automatic logout, and multiple verifications). However, this high level of trust often comes at the cost of reduced user convenience (user experience). In the banking industry, trust is a hygiene factor. Customers can assume that all banks registered with the Financial Services Authority are trustworthy. Therefore, trust level is no longer a distinguishing variable. These insignificant results are also influenced by the behavior of millennial and Gen Z customers, who tend to have multiple bank accounts (multi-homing). BRI Priority customers' trust in Bank BRI does not preclude their loyalty to other banks. This is because the cost of switching or trying other services is very low. In this situation, customer trust loses its power to lock customers into a single ecosystem. There is a connection to the Expectation-Disconfirmation theory. When a bank builds a "highly trusted" image, customers develop very high expectations. If there is even a minor technical problem (such as the application being under maintenance), customers who were initially very trusting will feel more disappointed than those with average trust. This disappointment then reduces their desire to be loyal, which, statistically, is a negative influence.

The results of hypothesis 6 testing show that m-banking service quality, through e-customer satisfaction, positively and significantly affects the indirect relationship between m-banking service quality and e-customer loyalty. E-customer satisfaction refers to their emotional response to experiences related to transactions with service providers (Gautam & Sah, 2023). This can be interpreted as a feeling of pleasure that arises when comparing the perceived service results with customer expectations (Alarifi & Husain, 2023). Meanwhile, m-banking is a transaction tool in the form of an application that makes it easier for customers to manage their financial accounts without visiting branch offices. In this study, *BRI Prioritas* customers were generally very satisfied with the features and services of BRI_{Mo}, with the most dominant factors in assisting their transactions being transaction speed and ease of use. This, in turn, encourages *BRI Prioritas* Padang customers to conduct all financial transactions through BRI_{Mo}. The results of this study are consistent with the findings of Suariedewi and Suprpti (2020), who found that customer satisfaction mediates the relationship between m-banking service quality and customer loyalty. Other studies are also closely related to several studies on m-banking service quality that examine the mediating role of e-customer satisfaction in the relationship between e-customer

loyalty and find that customer satisfaction successfully mediates this relationship (Khatoon et al., 2020; Suariedewi & Suprpti, 2020).

The results of testing hypothesis H7 show that m-banking service quality mediates the effect of e-customer loyalty on e-trust, indicating that e-trust does not have a positive and significant effect. Based on the test results, the indirect influence coefficient is 0.059 with a p-value of 0.266, which is > 0.05 , indicating that the effect is not statistically significant and that customer trust in the BRI_{Mo} application does not guarantee growth in e-customer loyalty among BRI Priority customers. In some circumstances, overly rigid efforts to increase e-trust can reduce flexibility of use, ultimately leading to a decline in loyalty among BRI Priority customers. From the results of respondents, 67.56% of Millennials and 17.12% of Gen Z stated that BRI Priority customers are more likely to choose multiple bank accounts to facilitate each transaction, and that it is currently easy for Millennial and Gen Z customers to switch and try other banking services that are more practical with very low costs. In this situation, the e-trust variable can no longer lock customers into a single ecosystem. In analyzing the user experience of mobile banking services, there is a security-usability trade-off: increased security mechanisms (such as double authentication or repeated verification) can reduce user comfort, which in turn affects the overall user experience.

Based on HCI (Human-Computer Interaction) and system security literature, this trade-off can erode user trust in the system if the design fails to balance security and ease of use (Kaewkitipong et al., 2022). The usable security perspective shows that the trade-off between security and usability can have unintended consequences. Even if the system is technically secure, low usability can worsen the overall perception of the service, resulting in e-trust not increasing significantly or even decreasing.

CONCLUSIONS AND SUGGESTIONS

The results show that m-banking service quality has a positive and significant effect on e-customer satisfaction and e-trust, but not on e-customer loyalty. Furthermore, e-customer satisfaction had a positive and significant effect on e-customer loyalty. On the other hand, e-trust had no significant effect on e-customer loyalty. Furthermore, e-customer satisfaction mediates the relationship between m-banking service quality and e-customer loyalty, whereas e-trust does not. The implications of this study emphasize the importance of customer satisfaction and trust in banking institutions when using digital services in

order to increase sustainable use. Future researchers are expected to build on the results of this study by incorporating more complex variables and research models within distinct contexts. In addition, future researchers can increase the sample size and select larger research samples to obtain stronger results.

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