Do e-service quality and e-recovery service quality affect e-satisfaction? A study on mobile banking users

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ABSTRACT

Purpose — *This study aims to analyze the roles of e-service quality and e-recovery service quality on e-satisfaction in the mobile banking app.*

Method — *The research method was conducted quantitatively using a descriptive-analytic method and verification analysis. A survey was conducted using a questionnaire instrument with 400 samples of active Indonesian mobile banking users. The collected data were analyzed using multiple regression analysis.*

Result — *This study found that e-service quality and e-recovery service played a significant role in influencing the e-satisfaction of the users, both simultaneously and partially. The role of these two competencies is positive, indicating the progressive impact of e-service quality and e-recovery service quality on the users' e-satisfaction.*

Contribution — *This research makes a significant academic contribution by providing valuable insights into the intricacies of e-service quality and e-recovery service quality concepts and their coherence with customer satisfaction in the context of marketing services, while also offering relevant and updated insights into the mobile banking subsector within the digital business landscape.*

*Keywords: mobile banking, e-service quality, e-recovery service quality, e-satisfaction*

INTRODUCTION

The trend of electronic transactions is experiencing incredibly popular development as the unique demand for transactions from consumers is also escalating. Consequently, companies nowadays are not only focused on facilitating basic electronic transaction services like money transfers but also on expanding their scope to provide transactions for services and product purchases with shorter processes, integrated within one online platform. For instance, an integrated payment gateway is used when ordering online transportation, applying for fintech loans, and making purchases from one commerce to another in a matter of seconds, all with a seamless process. We observe that electronic transaction service providers have demonstrated their capability in offering integrated pay-and-receive services within a centralized online platform.

In Indonesia, the high growth of electronic transactions can be clearly observed through the increasing value of 'electronic money' transactions over the past three years, from 2019 to 2021. According to the Bank Indonesia Annual Report, there has been a noteworthy surge in the value of electronic money transactions in Indonesia throughout the year 2021. The data examining the volume of electronic money transactions in Indonesia is presented in Figure 1 below:

Figure 1. Growth of electronic money transaction from 2019 – 2021 in Indonesia
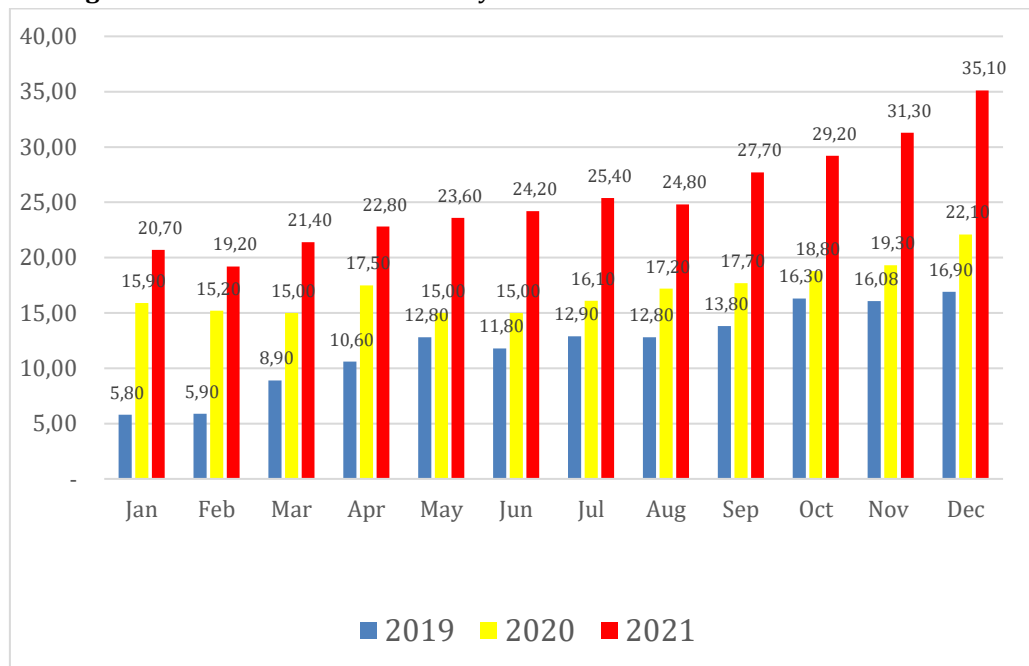
Source**:** Bank Indonesia (2019, 2020, 2021)

The growth of electronic money transactions is also reflected in the rapid development of mobile banking, digital banking, and e-wallets, as these three provide online transaction services integrated with the internet. Mobile banking is a service provided by banking companies, while digital banking and e-wallets are products of the shifting economy towards digital business. Digital banking operates without physical office branches, while e-wallets or digital wallets do not need a physical office at all to function. However, a recent survey by Populix in 2022 titled "Consumer Preferences Towards Banking and e-Wallet Apps" indicates that 91% of consumers still prefer mobile banking for their online financing service, with e-wallets coming in second at 84%, while digital banking only has 33% preference among consumers.

Achieving customer satisfaction is a key factor driving companies to compete in the digital business era (Tahir, 2023). Furthermore, in this current digital business era with a large pool of banking solutions that consumers can freely choose from, companies must prioritize customer satisfaction to stand out in a highly competitive market. This can be achieved through the provision of high-quality products, both goods and services, at competitive prices compared to its competitors (Tjiptono & Diana, 2019). Customer satisfaction is a term used to indicate how well a company provides services that meet their customers' expectations (Tahir, 2023).

Customer Satisfaction Score (CSAT) is a recognized tool used by businesses to assess customer satisfaction based on their user experiences (Oliver, 2021). It serves as a valuable instrument for understanding customer needs and identifying sentiments towards the company's services. Additionally, companies often employ CSAT to understand why customers opt for competitor's products or services instead of their own offerings (Oliver, 2021).

According to Kim in Sasono et al. (2021), customer satisfaction in using intangible online products or technology-based services to fulfill transaction needs is referred to as e-customer satisfaction. Their satisfaction in using mobile banking services represents a form of e-customer satisfaction or e-satisfaction. E-satisfaction is defined as the level of customer satisfaction based on the accumulation of experiences perceived by customers while consuming products or services on an online website.

Several factors can influence user satisfaction with mobile banking services, including the ease, security, and responsiveness of the mobile banking application (Shahria & Jahan, 2022). The mobile banking service itself is the primary factor influencing user satisfaction (Yu & Nuangjamnong, 2022). Users' perception of the features of the mobile banking application will impact how

customers evaluate the satisfaction of the mobile banking product (Makmuriyah & Vanni, 2020).

Sembiring & Pandjaitan (2022) imply that improving the e-recovery service of handling electronic transaction issues can lead to increased customer satisfaction. This could be achieved through evaluating the related complaints of provided services, allowing banks to design appropriate solutions to prevent recurrence.

Moreover, providing assurance for mobile banking is also a significant factor that contributes to user satisfaction (Islam & Himel, 2015). This is because users expect mobile banking to offer sincere services when they face transaction risks, which will always exist due to the nature of online transactions (Islam & Himel, 2015). Users of mobile banking products will expect empathy from banking services when they experience failed transactions (Rahman et al., 2017).

In addition, encountering technical problems or difficulties is unavoidable when using electronic services (Hidayah & Utami, 2017), regardless of the efforts made by mobile banking to provide impeccable service. Therefore, one way to address this issue is for banks to offer customer care/support services that include prompt email responses, live chat, and direct phone communication (Das et al., 2019). Another important attribute that banking companies need to consider is providing contact information that is easily accessible as a representation of the company if problems occur at unexpected times (Yunita et al., 2021).

Ayinaddis et al. (2023) have emphasized the importance of responsiveness in building customer satisfaction and loyalty in the context of electronic banking. This responsiveness refers to how companies guarantee service by promptly addressing emerging problems.

The explanation above has clarified the possible factors influencing e-satisfaction in mobile banking. It highlights that the core services of the application and the recovery services for transaction issues are likely to be crucial factors impacting user satisfaction in mobile banking. The core services of the application, which are further discussed in this study, are encompassed within the concept of e-service quality, while the recovery services are referred to as e-recovery service quality. This distinction allows for a comprehensive analysis of the factors contributing to user satisfaction in the mobile banking context.

This study is supported by previous research findings. For instance, the study by Sasono et al. (2021) found that e-satisfaction played a mediation role in the relationship between e-service quality and e-loyalty, although their study

focused on internet banking, while our study is centered on mobile banking. Other studies, such as Marliyah et al. (2021), Hayani & Sukri et al. (2021), Asfour & Hadad (2014), and Fianto et al. (2021), also focused on mobile banking and have highlighted that both the core service and extended service provided by mobile banking significantly influence users' satisfaction.

The distinctiveness of this study lies in how it identifies e-satisfaction from both cognitive and affective perspectives. Unlike earlier studies that mainly focused on the functionalities of services, this study places emphasis on factors based on personal feelings.

By conducting a more in-depth study of e-satisfaction on mobile banking, this research aims to explore how it is influenced by e-service quality and e-recovery service quality, taking into account the cognitive and affective aspects of users' experiences. This approach provides a comprehensive understanding of customer satisfaction in the context of mobile banking and contributes valuable insights to the existing body of knowledge in this field.

METHOD

The research method used in this study is a quantitative approach. Quantitative study is a method used to examine a specific population or sample, where sampling techniques are generally carried out randomly, and data will be collected using research instruments. The analysis of this data will be conducted through statistical testing to assess the constructed hypotheses (Sugiyono, 2019).

Data were collected from active users of mobile banking in Indonesia. The sample in this study was measured with homogenous sampling using the Slovin formula, and a total of 400 users were selected incidentally. The research instrument used was a questionnaire in an online form, designed to analyze the users' experiences regarding mobile banking e-service quality, e-recovery service quality, and e-satisfaction. Hypotheses were tested using multiple linear regression technique.

Hypothesis development

E-service quality on e-satisfaction

Zeithaml et al. (2018) conceptualized e-service quality as a term used to assess a company's ability to provide services to customers effectively and efficiently through the company's platform or website when customers shop online, make

online purchases, or seek to acquire goods or services from the company. Tjiptono & Gregorius (2017) emphasize that e-service quality is a concept that deserves attention from companies because through e-service quality, they can comprehensively evaluate the quality of their services, and high-quality service can represent a comprehensive and integrated service product.

According to Ahmed et al. (2020), the e-service quality model can measure the significant influence of electronic services provided by online banking on customer satisfaction when using their services through online channels, such as mobile banking applications. In this research, the e-service quality competencies will be based on the theory of Zeithaml et al. (2018), and the context will be tailored to the focuses of this study.

The four competencies identified for e-service quality in mobile banking are as follows: Efficiency, which relates to the ease and speed of accessing services; Fulfillment, which assesses how well mobile banking meets customers' needs and demands; System Availability, which examines the technological functionality and smooth operation of the mobile banking platform; and Privacy, which concerns the level of assurance and security in protecting consumers' personal information.

Based on this explanation, the hypothesis in this study is as follows:

H1: E-service quality affects e-satisfaction

E-recovery service quality on e-satisfaction

E-recovery service quality, according to Zeithaml et al. (2018), is the extended service provided by the company after the e-core service, which focuses on handling issues or providing additional services to customers after they have received the core services. Gronroos, as cited in Pradana et al. (2022), defines e-recovery service as a form of extended service that demonstrates how online sellers provide information to their customers when there are errors in service delivery, such as failed transactions, and how the seller is capable of compensating for any of those errors.

Sathiyavany & Shivany (2018) and Hidayah & Utami (2017) have found that e-recovery service quality plays a role in making customers satisfied. Sathiyavany & Shivany (2018) mention recovery services, such as customer representation services offered to meet ongoing needs, address doubts, and resolve customer complaints, and emphasize that the representation and responsiveness in handling these issues are crucial for resolving customer problems.

Moreover, Hidayah & Utami (2017) stated that, in practice, even though companies try their best to create a perfect situation and anticipate potential unsatisfactory services, customer perception of failure still exists, especially for businesses that primarily provide services as their main product. Thus, e-recovery service quality is defined by the activities or efforts prepared when there are customer complaints during the service process. As Mashaqi et al. (2020) also stated, "*businesses need to find ways to make disaffected customers happy.*"

Shafiee & Bazargan (2018) indicate that there are three things customers expect companies to provide when there is a service failure: company responsiveness, compensation offered due to mistakes, and contact to communicate. These three elements are also aligned with the e-recovery service quality according to Zeithaml et al. (2018), which will serve as the basis of this study, and the context will be tailored to the focuses of this research.

The three competencies identified for e-recovery service quality in mobile banking are as follows: Responsiveness, which measures the extent to which mobile banking can provide quick responses to customer complaints; Compensation, which evaluates the level of compensation received by customers as the responsibility of mobile banking for its service failures; and Contact, which examines the presence of company representatives online to provide assistance when customers wish to communicate, which can be through telephone, online chat, or representatives known as customer service (CS).

Based on this explanation, the hypothesis in this study is as follows:

H2: E-recovery service quality affects e-satisfaction

Research framework

E-satisfaction, or electronic satisfaction, is a term that describes consumer satisfaction with products or services used online. E-satisfaction can be referred to as the users' attitude in evaluating an online site based on their purchasing experience, which creates the perception of electronic customer satisfaction for the company (Juwaini et al., 2021).

E-satisfaction is also defined as the level of customer satisfaction derived from the experience of making a purchase, compared with previous consumer purchases or the consumer's initial knowledge of the purchase (Santika & Pramudana, 2018). However, Al-dweeri et al. (2017) remarked that the concept of e-satisfaction is indeed quite challenging to define due to the numerous interacting variables that take part in the role. Al-Dweeri stated that customer

attitude, referred to as affective attitude, where attitudes are based on emotions, can influence user behavior and evaluations of products or services (Al-dweeri et al., 2017).

Therefore, Palací et al. (2019) stated that e-satisfaction in purchasing services is naturally influenced by both cognitive and affective approaches. The cognitive approach is associated with rationality, as it is based on the processing of product-related information, while the affective approach is linked to emotions, derived from the purchasing experience and/or processing of products. This study will be based on the e-customer satisfaction theory constructed by Palací et al. (2019), which involves these two approaches as follows:

1. Cognitive Tradition: This tradition is defined as a rational approach, where evaluations are based on the attributes of the service. The approach consists of three forms: initial consumer expectations, performance recognition of mobile banking, and disconfirmation of service inconvenience.

2. Affective Tradition: This tradition is defined as the emotional approach of consumers during the purchase. The approach comprises two forms: positive emotions and negative emotions.

This study assumes that the cognitive perspective of e-satisfaction is based on the application system provided by mobile banking. Therefore, it is presumed that users are satisfied with the core service through their cognitive tradition, which involves utilizing their own knowledge based on prior information to evaluate the mobile banking app. On the other hand, users will employ their affective tradition to evaluate the extended service, which usually comes after and is intended to rectify any failures made by the companies. Hence, the presumption is that users' emotions will take precedence before their rational reflection in judging the extended service.

Nevertheless, we believe that e-service quality and e-recovery service quality actually play a role together in determining e-satisfaction (Mashaqi et al., 2020; Ting et al., 2016). When both e-service quality and e-recovery service quality are prominent, it can increase users' trust in the company and subsequently lead to satisfaction with the mobile banking service (Mashaqi et al., 2020). Users assess the quality of the service provided by the company by evaluating the benefits they gain from using mobile banking, including access to e-service quality, and this is supported by e-recovery service quality (Ting et al., 2016). Based on these findings, we construct the conceptual framework of this study as follows:

Figure 2. Research framework
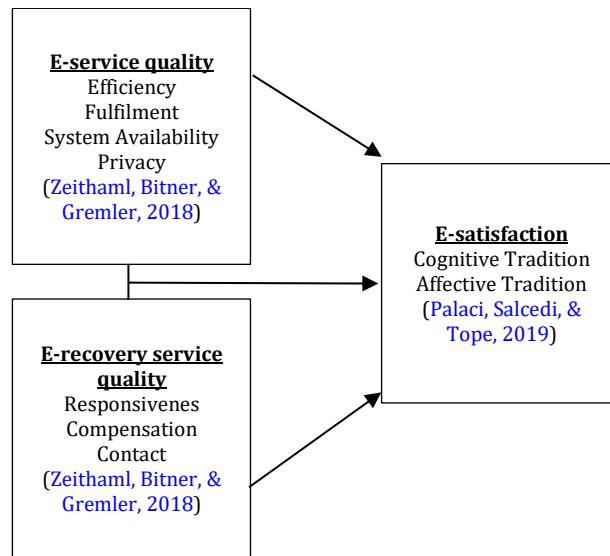
Source: authors' compilation (2023)

RESULT AND DISCUSSION

Convergent validity test

To test for convergent validity, the loading factor or correlation between the item score/component score and the latent variable score is analyzed. Convergent validity is assessed using the Rank Spearman method, with a threshold of the critical value > 0.3.

Table 1. Convergent validity

Variable	Indicator	r-value	Critical value	Information
E-service quality	X1.1	0,408	0,3	Valid
	X1.2	0,627	0,3	Valid
	X1.3	0,594	0,3	Valid
	X1.4	0,73	0,3	Valid
	X1.5	0,728	0,3	Valid
	X1.6	0,595	0,3	Valid
	X1.7	0,64	0,3	Valid
	X1.8	0,623	0,3	Valid
	X1.9	0,656	0,3	Valid
	X1.10	0,599	0,3	Valid
E-recovery Service quality	X2.1	0,724	0,3	Valid
	X2.2	0,766	0,3	Valid
	X2.3	0,722	0,3	Valid

	X2.4	0,856	0,3	Valid
E-satisfaction	Y.1	0,706	0,3	Valid
	Y.2	0,451	0,3	Valid
	Y.3	0,591	0,3	Valid
	Y.4.	0,463	0,3	Valid
	Y.5	0,679	0,3	Valid
	Y.6	0,667	0,3	Valid
	Y.7	0,432	0,3	Valid
	Y.8	0,642	0,3	Valid
	Y.9	0,678	0,3	Valid
	Y.10	0,419	0,3	Valid
	Y.11	0,658	0,3	Valid
	Y.12	0,545	0,3	Valid
	Y.13	0,745	0,3	Valid

Source: Data processed (2023)

Normality test

A normality test was conducted to investigate if the data residual values have a normal distribution to meet the requirement of multiple regression analysis. The Kolmogorov-Smirnov Test was used for this purpose. Figure 3 shows that the dots are spread out along the diagonal line, indicating that the data has a normal distribution. This suggests that the assumption of normality is met for the multiple regression analysis.

Figure 3. Kolmogorov-Smirnov Test
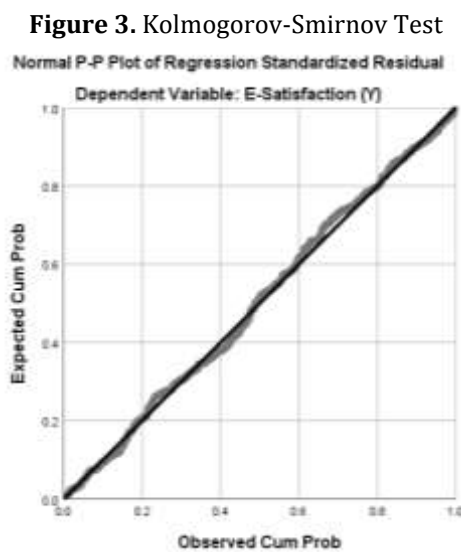
Source: Processed data (2023)

Multicollinearity test

A multicollinearity test was conducted by calculating the Variance Inflation Factor (VIF) with the criteria of a tolerance value < 0.10 and VIF > 10. The results showed that each variable has a tolerance value of 0.525 (< 0.10) and a VIF value of 1.960 (> 10), which indicates that the data does not exhibit any multicollinearity.

Table 2. Multicollinearity test

Coefficients[a]

| Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	15.635	1.399		11.174	.000		
	E-Service Quality (X1)	.410	.053	.391	7.735	.000	.525	1.906
	E-Recovery Service Quality (X2)	.805	.115	.354	7.011	.000	.525	1.906

a. Dependent Variable: E-Satisfaction (Y)

Source: Processed data (2023)

Heteroscedasticity test

A scatterplot diagram was drawn to investigate whether the data exhibit heteroscedasticity. From Figure 5, it can be observed that the dots are spread out randomly, and there is no apparent pattern constructed. Thus, it is safe to conclude that this research data is free from heteroscedasticity concerns

Figure 4. Scatterplot diagram
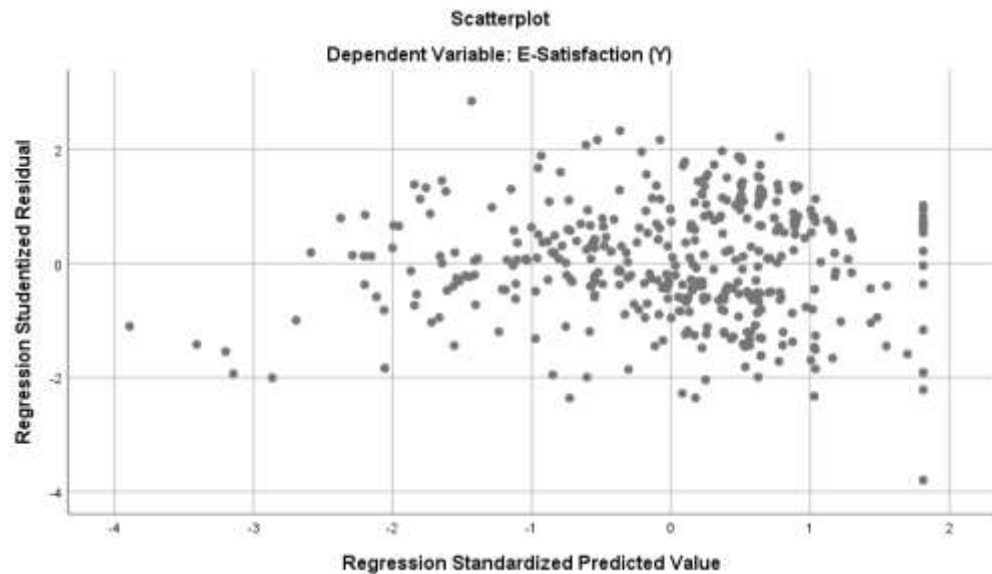
Hypothesis testing

The hypothesis will be verified by testing with a statistical test, specifically the F-Test (Simultaneous test), to examine whether the two factors play a significant role in impacting e-satisfaction on users.

Table 3. F-test results

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6574.838	2	3287.419	175.184	.000[b]
	Residual	7449.921	397	18.766		
	Total	14024.759	399			

From Table 3, the F-tests with a confidence level of 95% ($\alpha = 0.05$) resulted in an F-value of 175.184, which is greater than the critical F-table value of 3.018. Therefore, we can conclude that there is a simultaneous influence from both e-service quality and e-recovery service quality on e-satisfaction. This implies that the core services of the application and the recovery services offered will together affect e-customer satisfaction.

After learning that the influence of both factors is evident, we conducted further examinations to study the role of each competency independently. We aimed to determine whether e-service quality or e-recovery service quality alone can

affect e-satisfaction of users. This analysis allowed us to understand the individual contributions of each factor in influencing customer satisfaction with the mobile banking app.

Table 4. t-test results

Model		t	Sig.
1	(Constant)	11.174	.000
	E-Service Quality (X1)	7.735	.000
	E-Recovery Service Quality (X2)	7.011	.000

Source: Processed data (2023)

The t-tests conducted in this study were calculated with a confidence level of 95%, and Table 4 revealed that both independent variables have significance values of 0.000, which are obviously less than 0.05 (α). This indicates that there is a direct influence of e-service quality on e-satisfaction, and e-recovery service quality alone also has an impact on users' e-satisfaction. We also constructed a Multiple Linear Regression Model for the study, and the form of the regression model is as follows:

$$Y = a + \beta_1 X_1 + \beta_2 X_2$$

$$Y = 15{,}635 + 0{,}410\ X_1 + 0{,}805\ X_2$$

The regression model above shows that the coefficient regression has positive values, indicating that the relationships between variables are positive. Therefore, we can conclude that the better the e-service quality and e-recovery service quality, the higher the predicted increase in the e-satisfaction of users. In other words, improving both e-service quality and e-recovery service quality is expected to lead to higher levels of customer satisfaction with the mobile banking app.

Coefficient of determination

Furthermore, we also assessed the coefficient of determination of the study. This statistical test presents the amount of contribution of e-service quality and e-recovery service quality in impacting e-satisfaction.

Table 5. Coefficient of determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685[a]	.469	.466	4.33192

Source: Processed data (2023)

From Table 5, we can observe that the R-squared value is 0.469. This number indicates that the contribution of e-service quality and e-recovery service quality is 46.9% in explaining users' satisfaction. The remaining 53.1% is attributed to other variables that were not studied in this research.

Discussion

E-service quality on e-satisfaction

The findings indicate that the highly perceived e-service quality of mobile banking by users positively contributes to e-satisfaction. This finding is consistent with the research of Magdalena & Jaolis (2018), Ayo et al. (2016), Ramadania (2021), and Tobagus (2018). Ayo et al. (2016) emphasized that user satisfaction with electronic services is closely linked to the e-service quality provided by those services.

Among the assessed competencies, fulfilment has a more significant impact, while privacy has less influence. Fulfilment encompasses three aspects: transaction services, information services, and administrative services. This finding aligns with Mwiya et al. (2022), stating that services perceived by users as well-targeted and effectively meeting their needs will fulfill their expectations and directly relate to customer satisfaction.

However, it is noteworthy that privacy, as assessed by respondents, is also rated as very important. Haralayya et al. (2022) mentioned that users expect e-banking services to provide privacy protection for customer data with proven security measures. Hasnah & Suyanto (2020) also confirmed that privacy protection includes adhering to regulations that uphold customer security in using mobile banking services.

Other components of e-service quality, such as efficiency and system availability, were also considered highly important by users in determining e-satisfaction. Efficiency is assessed through ease of use and application loading time. This is consistent with Poon & Lee (2012), who found that users perceive the efficiency of electronic services through comprehensive and easy-to-understand application instructions. Pradnyadewi & Giantari (2022) also mentioned that efficiency could be achieved by providing transactions without delay.

Additionally, the assessment of system availability involves the application's technical functionalities, which can be marked through a powerful system, an attractive interface, and an uninterrupted experience for users even in the event of system dysfunctions. Singh (2019) confirmed that users of electronic banking hope for a powerful mobile banking system accessible 24/7, with an attractive interface as they may need to use the app at unexpected times.

In conjunction with the uniqueness of our study, we found that e-service quality affects e-satisfaction as judged by users through both their cognitive and affective abilities. In the cognitive case, users evaluate the application based on their knowledge and information about how mobile banking is supposed to provide services. This knowledge helps them build expectations that are later confirmed through their adoption experience. Their rational judgment also assesses the function performances, confirming or disconfirming the mobile banking claims regarding its provided service products. All these processes then lead to users having a comfortable and safe feeling towards mobile banking, which plays a role in inducing affective responses.

E-recovery service quality on e-satisfaction

Our study findings indicate that e-recovery service quality is also considered highly important in generating users' e-satisfaction. This finding is consistent with previous studies by Ramadania (2021), Tambusai et al. (2019), and Tobagus (2018). Tambusai et al. (2019) stated that users might be understanding of service errors if the company also takes responsibility by providing recovery services, such as giving clear steps to address issues and offering compensation for any losses. In our study, we evaluated mobile banking recovery services through their facilities for offering responsiveness, compensation, and contacting representatives.

Responsiveness can be observed through how mobile banking provides confirmation of transactions and the time it takes to respond to complaints. As this was the highest competency valued by users in our findings, Hammoud et al. (2018) confirmed that responsiveness is practically important for customer satisfaction, as it indicates how quickly the company responds to addressing customer issues. Marliyah et al. (2021) added that the confirmation given by mobile banking in processing transactions is also an indication of responsiveness, and users needed it.

Compensations are crystal clear. Customers will definitely ask the company for accountability if their service experiences a failure. From this study, we found that users will be satisfied if the company takes full responsibility and

compensates them for system nonperformance. This is consistent with Mathew et al. (2020) because mobile banking operates in a fully digital environment, and when customers experience any unfair treatment, they will immediately seek clarification. A simple apology for transaction failure may not suffice, and direct financial compensation may be required to address the customer's loss.

The contact representative of mobile banking is also highly perceived as important in affecting e-satisfaction. We found that although the company may provide representatives, users expect these representatives to be easily reachable and responsive at all times. Haralayya et al. (2022) state that customers access electronic banking services continuously, with various transaction needs occurring throughout the 24-hour day. As a result, if any issues arise, customers expect assistance services to be accessible immediately when facing problems. It is crucial for companies providing electronic services to have representatives who can provide accurate responses and assist customers when transactional issues occur (Singh, 2019).

The impact of e-recovery service quality on e-satisfaction is heavily affected by affective influences, as we have assumed. To be satisfied with mobile banking, users should have more positive feelings towards mobile banking rather than negative ones. These positive feelings include feeling content with customer service's response to their complaints or questions, which can further lead to loyalty and an intention to continue using mobile banking. However, negative emotions might never be completely absent from users, as they may have doubts and worries, such as doubts about using mobile banking due to potential transaction failures or worries about data breach issues. Nevertheless, these negative emotions can impact how users judge their satisfaction, so it is best for companies to handle these feelings appropriately to control any negativity and ensure a more positive user experience.

CONCLUSION

The study about e-service quality and e-recovery service quality of mobile banking on Indonesian users has significantly provided closure to the question of their role in impacting e-satisfaction. Firstly, e-service quality, as measured by the components of mobile banking such as efficiency, fulfillment, system availability, and privacy, was found to have a positive impact on e-satisfaction of users. The extended service, referred to as e-recovery service quality, with its components of services providing responsiveness, compensations, and contact, also highly contributes to e-satisfaction.

The implication for managers is to utilize the findings of this research as a reference to make improvements in their services, particularly in cases where certain solutions have not yet been provided by the company. Moreover, it is suggested that researchers conduct further examinations of the facility components present in mobile banking using a similar theoretical framework as this research. Our study focused on the general features of mobile banking, and we believe that mobile banking will continue to evolve and provide more service solutions. Additionally, further research could explore variables apart from service quality, as the findings indicate that there may be other factors influencing e-satisfaction.

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