

Determinants of Mobile Banking Usage Decisions: The Moderating Role of Gender and Their Effects on Customer Satisfaction among HIMBARA Bank Customers in East Java

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Abstract: The rapid expansion of digital banking services has heightened the importance of understanding factors that influence mobile banking adoption and customer satisfaction. This study examines the effects of technology, knowledge, trust, security, ease of use, fast service, and perceived risk on mobile banking usage decisions and customer satisfaction among HIMBARA bank customers in East Java. The study also investigates the mediating role of usage decisions and the moderating role of gender. A quantitative survey approach was employed with 370 mobile banking users from Bank Mandiri, BRI, BNI, and BTN. Data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results indicate that technology, trust, security, ease of use, and fast service positively and significantly affect mobile banking usage decisions, while perceived risk has a significant negative effect. Knowledge does not significantly influence usage decisions. Customer satisfaction is significantly influenced by technology, knowledge, ease of use, and usage decisions. Furthermore, usage decisions mediate the relationships between technology, trust, security, ease of use, fast service, perceived risk, and customer satisfaction. No mediation effect is found between knowledge and customer satisfaction. The findings also reveal that gender does not moderate the relationship between usage decisions and customer satisfaction. This study contributes to the mobile banking literature by integrating the Theory of Buyer Behavior, Technology Acceptance Model, and Theory of Planned Behavior into a comprehensive framework. The findings offer actionable insights for banks in developing customer-oriented mobile banking strategies.

Keywords: *Mobile Banking, Usage Decision, Customer Satisfaction, Gender, HIMBARA Banks*

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INTRODUCTION

The rapid advancement of information and communication technology has revolutionized numerous sectors, including the financial industry. Digital transformation has become a crucial strategy for financial institutions to improve operational efficiency, expand service accessibility, and enhance customer experience. In the era of digitalization, banking services are no longer confined to conventional transactions at branch offices. Customers increasingly use digital platforms to conduct financial transactions at any time and from any location. One of the most significant innovations in digital banking services is mobile banking, which provides customers

with convenient access to financial services through smartphone applications (Alfiansyah et al., 2024; Wulandari et al., 2023; Palumian et al., 2024).

The advancement of mobile banking has notably transformed how customers interact with financial institutions. Mobile banking enables customers to conduct numerous financial activities, including fund transfers, bill payments, account monitoring, and other financial operations, without visiting a physical branch. This innovation not only improves transaction efficiency but also reduces banks' operating costs while increasing customer convenience. Consequently, mobile banking has become a crucial component in the digital transformation strategies adopted by banking institutions worldwide (Mukarromah & Setyono, 2024; Yudistira & Abidin, 2024).

Indonesia has experienced remarkable growth in digital banking adoption over the past decade. The increasing penetration of internet services, smartphone ownership, and digital literacy has accelerated the utilization of mobile banking services, and according to Bank Indonesia, digital banking transaction values reached more than IDR 13,328 trillion in 2023, representing a substantial increase compared to previous years. Similarly, the Financial Services Authority (OJK) reported that mobile banking transaction values increased from IDR 1,159 trillion in 2016 to IDR 4,684 trillion in 2021 (Rohim & Wuryaningsih, 2024). The number of mobile banking users also grew significantly, reflecting the increasing acceptance of digital financial services among Indonesian consumers.

Despite this rapid growth, several challenges remain. Security concerns remain among the most critical factors affecting customer acceptance of digital banking services. The growing number of cybercrime incidents, including phishing, malware, identity theft, and unauthorized account access, has raised customer concerns about the safety of online transactions. These security threats may negatively influence customer trust and reduce their willingness to adopt mobile banking services (Abdennebi, 2023; Siti Jamilah et al., 2024). Therefore, ensuring a secure digital banking environment has become a strategic priority for banking institutions.

Beyond technical security, the user-friendliness and functionality of mobile banking applications significantly influence user adoption rates. When customers perceive an application as intuitive and capable of simplifying their financial tasks, they are more inclined to integrate these services into their daily routines. Research indicates that perceived ease of use is a critical predictor of users' intentions to consistently use mobile banking platforms (Matar & Aloqaily, 2025). Furthermore, overall design quality that minimizes technical friction plays a crucial role in sustaining customer satisfaction over time. Research has demonstrated that when individuals encounter seamless navigation and reliable performance, their overall attitude toward mobile banking services improves, effectively bridging the gap between initial interest and sustained usage (Addula, 2025). Consequently, banks must prioritize intuitive interface design alongside security to foster a positive user experience.

Customer trust is also crucial in influencing mobile banking adoption. Trust refers to customers' confidence that banking institutions can protect personal information, maintain transaction confidentiality, and deliver reliable services. Customers who perceive mobile banking services as trustworthy are more likely to adopt and continue using them. Conversely, a lack of trust could deter customers from engaging with digital banking platforms (Londa et al., 2022). Trust is therefore widely recognized as one of the key factors affecting customer behavior in digital banking environments.

Another crucial factor influencing mobile banking adoption is ease of use. Based on the Technology Acceptance Model (TAM) proposed by Davis (1989), individuals are more likely to accept and use technology when they perceive it as easy to use and useful. In mobile banking, ease of use is reflected in simple application interfaces, clear transaction procedures, and user-friendly features. Customers who view mobile banking applications as easy to understand and operate tend to exhibit higher intentions to use these services. Consequently, banks continuously improve their application designs to enhance customer experience and encourage greater adoption (Mukarromah & Setyono, 2024).

Customer knowledge regarding digital financial services is also considered a significant determinant of mobile banking adoption. Individuals with higher levels of knowledge and digital literacy generally possess a better understanding of mobile banking features, security mechanisms, and transaction procedures (Chhillar et al., 2025). Such knowledge enables customers to maximize the benefits of mobile banking while minimizing potential risks associated with digital transactions. Therefore, improving customer knowledge through educational programs and financial literacy initiatives is essential for increasing digital banking adoption (Abdennebi, 2023; Zaman et al., 2022).

Furthermore, service quality remains a key factor affecting customer perceptions of banking services. Fast service delivery, system responsiveness, and effective customer support contribute to positive customer experiences. Customers increasingly expect mobile banking applications to provide instant transaction processing and immediate access to information. Failure to meet these expectations may lead to dissatisfaction and reduced customer loyalty. Consequently, banks must continuously improve service quality to maintain customer satisfaction in highly competitive digital banking markets (Kim et al., 2026).

Perceived risk is another factor that may influence customers' decisions about mobile banking use. Perceived risk is customers' expectations of potential losses or negative outcomes arising from the use of a particular technology. In the mobile banking context, perceived risks may include financial losses, privacy concerns, data breaches, and system failures. Customers who perceive high risk are less inclined to use mobile banking services. Therefore, banks must implement effective risk management strategies and clearly communicate security measures to customers (Kornitasari et al., 2024; Yusron & Retno Tanding Suryandari S.E., 2022).

Among Indonesian banking institutions, the State-Owned Banks Association (HIMBARA), consisting of Bank Mandiri, Bank Rakyat Indonesia (BRI), Bank Negara Indonesia (BNI), and Bank Tabungan Negara (BTN), plays a strategic role in promoting digital banking adoption. These banks serve millions of customers across diverse demographic segments and continuously invest in technological innovations to improve digital service quality. East Java is one of Indonesia's largest economic regions, characterized by substantial banking activity, diverse customer demographics, and significant digital banking adoption. Examining customer behavior regarding mobile banking use within HIMBARA banks in East Java, therefore, provides valuable insights into digital banking adoption patterns.

Gender differences have also attracted considerable attention in studies related to technology adoption. Previous studies suggest that males and females may differ in their perceptions of technology's usefulness, ease of use, security, and risk. Male customers are often associated with greater emphasis on performance and efficiency, whereas

female customers tend to prioritize security, convenience, and reliability. However, increasing digital literacy and growing technological familiarity may have reduced these differences over time. Consequently, further investigation is needed to determine whether gender continues to moderate the relationship between mobile banking usage decisions and customer satisfaction.

Previous studies examining mobile banking adoption have primarily focused on individual factors such as trust, security, perceived usefulness, or ease of use. However, empirical findings remain inconsistent regarding the factors influencing mobile banking adoption decisions and customer satisfaction. Some studies report significant effects of trust and security on customer satisfaction, while others find insignificant relationships. These inconsistencies point to a research gap that requires further investigation (Sidra & Wagan, 2025). Moreover, limited studies have simultaneously examined technology, knowledge, trust, security, ease of use, fast service, and perceived risk within a single integrated research model.

This study draws on three complementary theoretical frameworks. The Technology Acceptance Model (TAM), proposed by Davis (1989), explains how perceived usefulness and perceived ease of use determine individuals' behavioral intentions to use technology. TAM forms the primary theoretical lens for understanding how technological attributes, ease of use, and usefulness translate into mobile banking adoption decisions.

The Theory of Planned Behavior (TPB) (Ajzen, 1991) extends TAM by incorporating subjective norms and perceived behavioral control, which together explain the role of social influence and self-efficacy in shaping usage intentions. In the mobile banking context, TPB helps explain how customers' beliefs about risk, trust, and knowledge influence their willingness to adopt digital banking services.

The Theory of Buyer Behavior (Howard & Sheth, 1969) provides a framework for understanding post-adoption evaluations. It emphasizes that satisfaction results from the alignment between customer expectations and actual service performance. This theory is particularly relevant for explaining why certain antecedents, such as knowledge and ease of use, more strongly predict customer satisfaction than adoption decisions. Together, these three theories create a multi-stage framework in which TAM and TPB explain the adoption stage, while the Theory of Buyer Behavior explains the post-adoption satisfaction stage.

This study offers several contributions to the existing literature. First, it integrates seven independent variables, namely technology, knowledge, trust, security, ease of use, fast service, and perceived risk, into a comprehensive framework for explaining mobile banking usage decisions and customer satisfaction. Second, mobile banking usage decisions are positioned as a mediating variable linking these determinants to customer satisfaction. Third, gender is incorporated as a moderating variable to examine potential differences in customer behavior. Finally, this study integrates the Theory of Buyer Behavior, Technology Acceptance Model (TAM), and Theory of Planned Behavior (TPB) to provide a more comprehensive understanding of customer behavior in digital banking contexts.

Based on these considerations, this study aims to analyze the effects of technology, knowledge, trust, security, ease of use, fast service, and perceived risk on mobile banking usage decisions and customer satisfaction among HIMBARA bank customers in East Java. The study also investigates the mediating role of usage decisions and the moderating role of gender in the relationship between mobile banking usage decisions

and customer satisfaction. The findings are expected to contribute to the development of the digital banking literature and to provide practical recommendations for banking institutions on designing more effective, customer-oriented, and inclusive mobile banking services.

Based on the theoretical foundations and prior empirical evidence, the following hypotheses are proposed:

H1: Technology has a positive and significant effect on mobile banking usage decisions.

H2: Knowledge has a positive and significant effect on mobile banking usage decisions.

H3: Trust has a positive and significant effect on mobile banking usage decisions.

H4: Security has a positive and significant effect on mobile banking usage decisions.

H5: Ease of use has a positive and significant effect on mobile banking usage decisions.

H6: Fast service has a positive and significant effect on mobile banking usage decisions.

H7: Perceived risk has a negative and significant effect on mobile banking usage decisions.

H8: Technology has a positive and significant effect on customer satisfaction.

H9: Knowledge has a positive and significant effect on customer satisfaction.

H10: Trust has a positive and significant effect on customer satisfaction.

H11: Security has a positive and significant effect on customer satisfaction.

H12: Ease of use has a positive and significant effect on customer satisfaction.

H13: Fast service has a positive and significant effect on customer satisfaction.

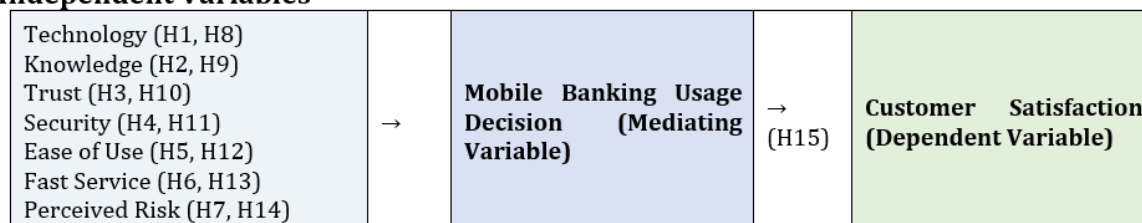
H14: Perceived risk has a negative and significant effect on customer satisfaction.

H15: Mobile banking usage decisions have a positive and significant effect on customer satisfaction.

H16: Gender moderates the relationship between mobile banking usage decisions and customer satisfaction.

H17–H23: Mobile banking usage decisions mediate the relationships between each determinant (technology, knowledge, trust, security, ease of use, fast service, perceived risk) and customer satisfaction.

Independent Variables



↑ *Moderating Variable: Gender (H16)*

Figure 1. Conceptual Research Framework

RESEARCH METHODS

This study employed a quantitative approach through a survey to examine the determinants of mobile banking usage decisions and their effects on customer satisfaction among HIMBARA bank customers in East Java (Creswell & Creswell, 2023;

Sekaran & Bougie, 2020). A quantitative method was selected because it permits researchers to objectively assess relationships among variables and test the proposed hypotheses using statistical analysis. The research aimed to investigate both direct and indirect relationships among variables, incorporating the moderating role of gender and the mediating role of mobile banking usage decisions.

The study population consisted of customers of the HIMBARA banks Bank Mandiri, Bank Rakyat Indonesia (BRI), Bank Negara Indonesia (BNI), and Bank Tabungan Negara (BTN) who regularly use mobile banking services in East Java. HIMBARA banks were selected based on their strategic role as state-owned commercial banks with extensive customer bases and widespread digital banking adoption. East Java was selected as the study area because it represents one of Indonesia's largest economic regions with high levels of banking activity and digital technology utilization.

Following the guidelines established by Hair et al. (2022), which recommend a minimum sample size of five to ten times the number of indicators for Structural Equation Modeling (SEM), this study required a minimum of 370 respondents based on its 37 measurement indicators (37×10). A total of 370 valid responses were collected, representing a proportional distribution of customers from Bank Mandiri, BRI, BNI, and BTN across major cities in East Java, including Surabaya, Malang, Kediri, Madiun, and Jember.

To ensure data quality, a non-probability purposive sampling technique was applied (Etikan & Bala, 2017). Participants were selected based on the following criteria: (1) active HIMBARA bank account holders; (2) a minimum of six months of mobile banking usage; (3) at least 17 years of age; and (4) proven experience with mobile banking financial transactions. These criteria ensured that respondents possessed sufficient familiarity with mobile banking services to evaluate them effectively.

Primary data were collected through a structured questionnaire distributed both in person and electronically. The questionnaire contained statements designed to measure all research variables. Secondary data were gathered from scholarly articles, official publications by Bank Indonesia and the Financial Services Authority (OJK), and additional relevant literature on digital banking, customer behavior, and technology adoption.

The research model comprised 10 variables. Seven variables were treated as independent variables: technology, knowledge, trust, security, ease of use, fast service, and perceived risk. The decision to use mobile banking was positioned as a mediating (intervening) variable. Customer satisfaction was treated as the dependent variable, and gender was included as a moderating variable. The operational definitions and measurement indicators were adapted from previous studies and modified to suit the Indonesian mobile banking context.

All variables were measured using a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree) (Joshi et al., 2015). The four-point scale was selected to eliminate neutral responses and encourage respondents to provide more definitive assessments. The questionnaire contained 37 indicators, representing all research constructs.

Data analysis was conducted using Structural Equation Modeling–Partial Least Squares (SEM-PLS) through SmartPLS software (Hair et al., 2025). SEM-PLS was chosen for its suitability for complex models with multiple latent variables, mediation, and moderation effects, while requiring fewer assumptions about data distribution. SEM-PLS

is also considered appropriate for both predictive and exploratory research in the social sciences and management.

The analysis process comprised two primary stages: outer model assessment and inner model assessment. The outer model evaluation assessed convergent validity (factor loadings and Average Variance Extracted; loading values > 0.70, AVE > 0.50), discriminant validity (Fornell-Larcker Criterion and Heterotrait-Monotrait Ratio; HTMT < 0.90; Henseler et al., 2016), and reliability (Cronbach's Alpha and Composite Reliability; values > 0.70).

The inner model assessment evaluated the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and hypothesis testing. Hypothesis testing was performed using the bootstrapping procedure with 5,000 subsamples. A hypothesis was considered supported when the t-statistic exceeded 1.96, and the p-value was less than 0.05.

Mediation effects were analyzed through bootstrapping procedures following Nitzi et al. (2016). Gender moderation was analyzed using Moderated Regression Analysis (MRA) within the SEM-PLS framework, applying the two-stage approach as recommended by Hair et al. (2022) for categorical moderating variables. Interaction effects between gender and mobile banking usage decisions were created to determine whether gender strengthened or weakened the relationship between usage decisions and customer satisfaction.

RESULTS AND DISCUSSION

Respondent Characteristics

A total of 370 respondents participated in this study. Table 1 presents the demographic distribution of the sample.

Table 1. Respondent Characteristics

Characteristic	Frequency	Percentage (%)
Gender		
Male	185	50.0%
Female	185	50.0%
Age Group		
17–25 years	74	20.0%
26–35 years	129	34.9%
36–45 years	111	30.0%
> 45 years	56	15.1%
Education Level		
Senior High School	63	17.0%
Diploma (D3)	52	14.1%
Bachelor's Degree (S1)	185	50.0%
Master's/Doctoral Degree	70	18.9%
HIMBARA Bank Used		
Bank Mandiri	96	25.9%
Bank BRI	102	27.6%

Bank BNI	89	24.1%
Bank BTN	83	22.4%
Mobile Banking Usage Duration		
6–12 months	55	14.9%
1–3 years	178	48.1%
> 3 years	137	37.0%
Total	370	100.0%

As shown in Table 1, the sample was evenly distributed by gender (50.0% male; 50.0% female), allowing for a robust examination of the moderating role of gender. The majority of respondents were in the 26–35 age group (34.9%), held a bachelor's degree (50.0%), and used mobile banking for one to three years (48.1%). This demographic profile suggests that the sample adequately represents active digital banking users in East Java who are familiar with mobile banking features and services.

Measurement Model Evaluation

The measurement model was assessed through validity and reliability testing. Table 2 presents the outer loadings and AVE for all constructs.

Table 2. Outer Loadings and Average Variance Extracted (AVE)

Construct	Indicators	Loading Range	AVE
Technology (TECH)	TECH1–TECH4	0.731–0.912	0.672
Knowledge (KNOW)	KNOW1–KNOW4	0.737–0.898	0.658
Trust (TRUST)	TRUST1–TRUST4	0.743–0.921	0.673
Security (SEC)	SEC1–SEC4	0.751–0.938	0.679
Ease of Use (EOU)	EOU1–EOU4	0.707–0.948	0.661
Fast Service (FS)	FS1–FS4	0.724–0.932	0.667
Perceived Risk (PR)	PR1–PR4	0.719–0.927	0.655
Usage Decision (UD)	UD1–UD5	0.712–0.919	0.660
Customer Satisfaction (CS)	CS1–CS5	0.723–0.941	0.669
Gender (GEN)	GEN1–GEN3	0.714–0.908	0.641

As shown in Table 2, all indicators met the convergent validity requirements, with factor loadings exceeding 0.70 and AVEs exceeding 0.50. Discriminant validity was confirmed using the Fornell-Larcker Criterion and Heterotrait-Monotrait Ratio (HTMT), with HTMT values remaining below the 0.90 threshold, indicating that all constructs were empirically distinct. Table 3 presents the reliability results.

Table 3. Reliability Analysis

Construct	Cronbach's Alpha	Composite Reliability	Status
Technology (TECH)	0.892	0.919	Reliable
Knowledge (KNOW)	0.884	0.914	Reliable
Trust (TRUST)	0.895	0.921	Reliable
Security (SEC)	0.891	0.918	Reliable

Ease of Use (EOU)	0.888	0.916	Reliable
Fast Service (FS)	0.890	0.917	Reliable
Perceived Risk (PR)	0.882	0.912	Reliable
Usage Decision (UD)	0.903	0.927	Reliable
Customer Satisfaction (CS)	0.906	0.929	Reliable

All variables achieved Cronbach's Alpha and Composite Reliability values above 0.70, confirming satisfactory internal consistency and measurement reliability.

Structural Model Evaluation

The structural model assessment revealed that the coefficient of determination (R^2) for mobile banking usage decisions was 0.532, indicating that the seven independent variables explained 53.2% of the variance in usage decisions. The R^2 for customer satisfaction was 0.513, indicating that the research model accounted for 51.3% of the variance in customer satisfaction. These values indicate moderate explanatory power. Table 4 presents the results of hypothesis testing.

Table 4. Hypothesis Testing Results

H	Path	β	t-stat	p-value	Decision
H1	Technology → Usage Decision	0.174	3.454	0.001	Supported
H2	Knowledge → Usage Decision	-0.009	0.168	0.867	Not Supported
H3	Trust → Usage Decision	0.160	2.829	0.005	Supported
H4	Security → Usage Decision	0.205	3.765	0.000	Supported
H5	Ease of Use → Usage Decision	0.222	3.157	0.002	Supported
H6	Fast Service → Usage Decision	0.328	4.765	0.000	Supported
H7	Perceived Risk → Usage Decision	-0.169	2.882	0.004	Supported
H8	Technology → Customer Satisfaction	0.175	3.361	0.001	Supported
H9	Knowledge → Customer Satisfaction	0.231	3.661	0.000	Supported
H10	Trust → Customer Satisfaction	0.048	0.833	0.405	Not Supported
H11	Security → Customer Satisfaction	0.114	1.833	0.067	Not Supported
H12	Ease of Use → Customer Satisfaction	0.180	2.864	0.004	Supported
H13	Fast Service → Customer Satisfaction	0.029	0.485	0.628	Not Supported
H14	Perceived Risk → Customer Satisfaction	-0.031	0.526	0.599	Not Supported
H15	Usage Decision → Customer Satisfaction	0.182	3.195	0.001	Supported

Discussion of Hypotheses

Effect of Technology on Mobile Banking Usage Decisions and Customer Satisfaction

Technology had a positive and significant effect on both mobile banking usage decisions ($\beta = 0.174$; $t = 3.454$; $p = 0.001$) and customer satisfaction ($\beta = 0.175$; $t = 3.361$; $p = 0.001$), supporting H1 and H8. These findings are consistent with TAM (Davis, 1989), which emphasizes that perceived technological usefulness drives both adoption

and post-adoption evaluations. Customers are more likely to adopt mobile banking when the technology reliably improves transaction efficiency, and their continued satisfaction is reinforced when it consistently delivers on these expectations. These findings align with prior research demonstrating that technological innovation enhances both adoption and perceptions of service quality in digital banking (Mukarromah & Setyono, 2024; Palumian et al., 2024).

Effect of Knowledge on Mobile Banking Usage Decisions and Customer Satisfaction

Knowledge did not significantly influence mobile banking usage decisions ($\beta = -0.009$; $t = 0.168$; $p = 0.867$), failing to support H2. However, knowledge emerged as the strongest positive predictor of customer satisfaction ($\beta = 0.231$; $t = 3.661$; $p = 0.000$), supporting H9. This divergent pattern offers a theoretically important insight: knowledge does not gate adoption, but it substantially determines post-adoption satisfaction.

The lack of significance of knowledge in usage decisions is consistent with the widespread, simplified nature of contemporary mobile banking applications. In an environment where major HIMBARA banks have invested heavily in user-friendly interfaces, customers no longer require extensive prior knowledge to begin using mobile banking; they can learn through interaction. However, once customers are active users, those with greater knowledge of features, security protocols, and transaction capabilities are better positioned to extract maximum value from the application, thereby experiencing higher satisfaction. This finding aligns with Consumer Knowledge Theory (Alba & Hutchinson, 1987), which argues that knowledgeable consumers are more effective at evaluating and utilizing products. The direct path from knowledge to satisfaction without passing through usage decisions suggests that banks should invest in post-adoption customer education rather than focusing solely on pre-adoption awareness campaigns.

Effect of Trust on Mobile Banking Usage Decisions and Customer Satisfaction

Trust significantly influenced mobile banking usage decisions ($\beta = 0.160$; $t = 2.829$; $p = 0.005$), supporting H3. However, trust did not significantly affect customer satisfaction ($\beta = 0.048$; $t = 0.833$; $p = 0.405$), failing to support H10. These results indicate that trust functions primarily as an adoption-stage antecedent rather than a satisfaction driver. In line with Trust-Based Acceptance Theory, customers must first trust banking institutions before engaging with digital platforms. Once adopted, however, satisfaction becomes more dependent on actual service performance than on initial trust perceptions. This pattern is consistent with Expectation Confirmation Theory, in which trust is a baseline expectation; its presence does not generate additional satisfaction, but its absence would likely lead to dissatisfaction. This finding aligns with prior studies that distinguish between trust as an adoption enabler and service quality as a driver of satisfaction (Londa et al., 2022).

Effect of Security on Mobile Banking Usage Decisions and Customer Satisfaction

Security significantly influenced mobile banking usage decisions ($\beta = 0.205$; $t = 3.765$; $p = 0.000$), supporting H4. Its effect on customer satisfaction was positive but not statistically significant at the 0.05 level ($\beta = 0.114$; $t = 1.833$; $p = 0.067$), failing to support H11. The non-significant direct effect on satisfaction can be explained through Herzberg's Two-Factor Theory: security operates as a hygiene factor that customers expect as a baseline. When security standards are adequately met, customers do not necessarily experience heightened satisfaction; however, any failure in security rapidly

generates dissatisfaction. Banks operating in HIMBARA's regulatory environment may have established security as a minimum threshold expectation, meaning that customers assume adequate protection and evaluate satisfaction on dimensions beyond security alone.

Effect of Ease of Use on Mobile Banking Usage Decisions and Customer Satisfaction

Ease of use demonstrated a positive and significant effect on both mobile banking usage decisions ($\beta = 0.222$; $t = 3.157$; $p = 0.002$) and customer satisfaction ($\beta = 0.180$; $t = 2.864$; $p = 0.004$), supporting H5 and H12. These findings strongly confirm TAM's central proposition that perceived ease of use is fundamental to technology acceptance. Unlike security, ease of use generates satisfaction beyond adoption because it reduces the ongoing cognitive effort required during daily banking interactions. User-friendly interfaces, simplified navigation, and intuitive transaction flows contribute cumulatively to a positive user experience that reinforces satisfaction over repeated use episodes.

Effect of Fast Service on Mobile Banking Usage Decisions and Customer Satisfaction

Fast service emerged as the strongest determinant of mobile banking usage decisions ($\beta = 0.328$; $t = 4.765$; $p = 0.000$), supporting H6. However, it did not significantly affect customer satisfaction ($\beta = 0.029$; $t = 0.485$; $p = 0.628$), failing to support H13. This divergent result reflects the hygiene-factor nature of service speed in mature digital banking markets. Speed is the single most important factor in drawing customers to adopt mobile banking; they select it primarily because it is faster than branch banking. Once adopted, however, speed becomes a baseline expectation. Transactions must be fast, but speed alone no longer differentiates satisfaction; customers take it for granted. This parallels Herzberg's classification of hygiene factors, which prevent dissatisfaction when present but do not actively create satisfaction. For HIMBARA banks, this implies that competing on speed is necessary for acquisition but insufficient for retention; banks must emphasize other dimensions, such as knowledge support, ease of use, and reliability, to sustain post-adoption satisfaction.

Effect of Perceived Risk on Mobile Banking Usage Decisions and Customer Satisfaction

Perceived risk negatively and significantly affected mobile banking usage decisions ($\beta = -0.169$; $t = 2.882$; $p = 0.004$), supporting H7. However, perceived risk did not significantly affect customer satisfaction ($\beta = -0.031$; $t = 0.526$; $p = 0.599$), failing to support H14. This pattern mirrors that of trust and security: risk perceptions act as barriers at the adoption stage but lose their salience after customers have accumulated usage experience. As customers repeatedly engage with mobile banking without negative incidents, their risk concerns diminish, and satisfaction becomes anchored to actual service quality. This is consistent with Risk Reduction Theory, which holds that familiarity and positive experiences reduce perceived risk over time (Kornitasari et al., 2024).

Effect of Mobile Banking Usage Decisions on Customer Satisfaction

Mobile banking usage decisions had a positive and significant effect on customer satisfaction ($\beta = 0.182$; $t = 3.195$; $p = 0.001$), supporting H15. This result is consistent with the Theory of Buyer Behavior, which holds that positive usage decisions generate favorable post-consumption evaluations. Customers who consciously chose to adopt mobile banking because they perceive it as technologically capable, secure, and fast

enter the usage experience with positive predispositions, which reinforces subsequent satisfaction.

Mediation Analysis

Table 5 presents the results of the mediation analysis.

Table 5. Indirect Effects (Mediation Analysis)

Indirect Path	β	t-stat	p-value	Mediation Type
Fast Service → UD → Customer Satisfaction	0.060	2.522	0.012	Full Mediation
Ease of Use → UD → Customer Satisfaction	0.040	2.139	0.032	Partial Mediation
Security → UD → Customer Satisfaction	0.037	2.418	0.016	Partial Mediation
Technology → UD → Customer Satisfaction	0.032	2.243	0.025	Partial Mediation
Trust → UD → Customer Satisfaction	0.029	2.114	0.035	Partial Mediation
Perceived Risk → UD → Customer Satisfaction	-0.031	1.967	0.049	Partial Mediation
Knowledge → UD → Customer Satisfaction	-0.002	0.159	0.873	No Mediation

Mobile banking usage decisions significantly mediated six of the seven hypothesized indirect paths. The strongest mediation effect was observed for fast service → usage decision → customer satisfaction ($\beta = 0.060$; $t = 2.522$; $p = 0.012$), which also exhibited a non-significant direct effect. This pattern indicates full mediation: fast service influences customer satisfaction exclusively through its effect on usage decisions. Customers attracted to mobile banking by its speed subsequently experience satisfaction because their decision to use the platform was validated by the service performance they encountered. This finding highlights the importance of usage decisions as a transmission mechanism, particularly for attributes that function as hygiene factors at the adoption stage.

Partial mediation was confirmed for ease of use, security, technology, trust, and perceived risk, where both direct and indirect paths were statistically significant. The mediation effect of knowledge was not significant ($\beta = -0.002$; $t = 0.159$; $p = 0.873$), indicating that knowledge directly affects satisfaction through a pathway that does not require the intermediary of usage decisions. This is consistent with the interpretation that knowledge is an intrinsic capability variable; customers who understand mobile banking features derive satisfaction directly from their ability to use the system effectively, independently of whether their initial usage decision was particularly deliberate.

Gender Moderation Analysis

The Moderated Regression Analysis demonstrated that gender does not significantly moderate the relationship between mobile banking usage decisions and customer satisfaction ($\beta = 0.020$; $t = 0.529$; $p = 0.597$; $f^2 = 0.001$), failing to support H16. This finding supports the concept of digital gender convergence: male and female HIMBARA customers exhibit substantially similar satisfaction patterns after adopting mobile banking. Several factors may explain this convergence in the East Java context. First, increasing digital literacy across demographic groups has reduced traditional gender-based disparities in attitudes toward technology. Second, HIMBARA banks have

invested in universal design principles that make their applications equally accessible and satisfying for diverse users. Third, the East Java sample represents a predominantly working-age, educated population with sustained mobile banking experience, a segment in which gender differences in technology behavior are minimized by habitual use.

This finding differs from some earlier technology adoption studies that identified gender as a significant moderator. However, it is consistent with more recent evidence from developing countries, including Southeast Asia, suggesting that the digital transformation wave has narrowed gender gaps in mobile banking adoption and satisfaction (Addula, 2025; Sidra & Wagan, 2025). For HIMBARA banks, this result implies that universal service design strategies, rather than gender-differentiated approaches, are likely to produce more effective outcomes in enhancing customer satisfaction.

Theoretical Implications

This study contributes to mobile banking literature by demonstrating that the three integrated theories, TAM, TPB, and the Theory of Buyer Behavior, operate across distinct stages of the customer journey. TAM explains how technology, ease of use, and usefulness drive adoption decisions. TPB captures how trust, perceived risk, and social context shape behavioral intentions. The Theory of Buyer Behavior illuminates why post-adoption satisfaction is driven by a different set of variables, particularly knowledge and ease of use, rather than the same factors that drove initial adoption.

A key theoretical contribution of this study is the conceptual separation between adoption-stage and satisfaction-stage drivers. Fast service and perceived risk primarily influence the adoption decision, while knowledge directly shapes post-adoption satisfaction. This suggests that researchers should exercise caution in assuming that adoption determinants automatically translate into satisfaction drivers. Understanding the stage-specificity of these relationships is essential for constructing theoretically coherent models of digital banking behavior.

The emergence of gender convergence as a finding also invites scholars to reconsider the moderating role of demographic variables in digital banking contexts. Rather than gender, future studies should investigate alternative moderators such as digital literacy level, age cohort, income segment, or frequency of mobile banking usage to better account for heterogeneity in customer behavior.

CONCLUSION AND RECOMMENDATIONS

This study examined the determinants of mobile banking usage decisions and their impact on customer satisfaction among HIMBARA bank customers in East Java, integrating technology, knowledge, trust, security, ease of use, fast service, and perceived risk within a comprehensive research framework. The findings reveal that technology, trust, security, ease of use, and fast service positively and significantly influence mobile banking usage decisions, while perceived risk has a significant negative effect. Fast service emerged as the most influential adoption-stage determinant, whereas knowledge did not significantly affect usage decisions, indicating that widespread familiarity has reduced the knowledge prerequisite for initial adoption.

Regarding customer satisfaction, knowledge, technology, ease of use, and mobile banking usage decisions were identified as significant positive predictors. Knowledge emerged as the strongest driver of satisfaction, confirming that the ability to utilize mobile banking features fully is central to post-adoption evaluations. Conversely, trust, security, fast service, and perceived risk did not directly affect customer satisfaction,

indicating that these factors primarily operate at the adoption stage rather than the post-adoption evaluation stage. Mediation analysis further confirmed that mobile banking usage decisions serve as a significant mechanism linking technology, trust, security, ease of use, fast service, and perceived risk to customer satisfaction. However, the relationship between knowledge and satisfaction is not mediated by usage decisions, indicating that knowledge is a direct driver of satisfaction. Additionally, the lack of significant gender moderation supports the hypothesis of digital gender convergence among HIMBARA users in East Java.

To address these findings, HIMBARA banks should adopt a customer journey perspective. During the pre-adoption stage, banks should focus on strengthening trust and reducing perceived risk through transparent security communications, two-factor authentication, and fraud-prevention education, while positioning service speed as a minimum standard to drive adoption. During the post-adoption stage, efforts should prioritize improving application usability, introducing innovative features, and expanding digital literacy programs. Given that knowledge is the strongest predictor of satisfaction, continuous development of in-app tutorials, financial literacy content, and feature guides is essential. Furthermore, because gender differences were not significant, banks should invest in universal service design rather than differentiated marketing strategies, focusing instead on reliability, ease of use, and knowledge empowerment to enhance satisfaction across the entire customer base.

Finally, while this study provides valuable insights, it is subject to certain limitations, including a cross-sectional design that cannot account for behavioral changes over time, a geographical focus limited to East Java, and potential selection bias from purposive sampling. Consequently, future research should expand the geographical scope to other Indonesian provinces and compare state-owned banks with private institutions. Longitudinal designs are recommended to track behavioral changes, and qualitative or mixed-method approaches would offer deeper insights into the underlying motivational dynamics. Future studies should also examine alternative moderating variables, such as age, digital literacy levels, income, and frequency of use, to better account for heterogeneity in customer behavior.

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