

Examining the Mediating Effect of Technology Trust on Customer Loyalty in a Regional Banking App

*The Effect of
Technology Perception
on Customer Loyalty*

Ayu Kusumaning Rukmi^{1*}, Raditha Dwi Vata Hapsari², Taufiq Ismail³

^{1,2,3}Master of Management Program Study, Faculty of Economics and Business,
Universitas Brawijaya; Malang, Indonesia

*Corresponding Author E-Mail: ayurukmi@student.ub.c.id

865

Submitted:
October 29, 2025

Revised:
November 6, 2025

Accepted:
January 30, 2026

Published Online:
January 31, 2026

ABSTRACT

The swift expansion of digital banking has amplified rivalry among financial institutions, rendering customer loyalty essential for maintaining long-term success. Grasping the factors that affect users' ongoing utilization of mobile banking apps is crucial, especially in regional banks like Bank Jatim. This research seeks to analyze how perceived ease of use, perceived usefulness, and perceived risk influence customer loyalty to the JConnect Mobile application, incorporating trust in technology as a mediating factor and gender as a control variable. Based on the Technology Acceptance Model (TAM), the study uses a quantitative explanatory method. Data were gathered from 180 active JConnect Mobile users throughout East Java and examined using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0. The findings indicate that perceived ease of use, perceived usefulness, and perceived risk greatly affect customer loyalty both directly and indirectly via trust in technology. Additionally, trust in technology acts as a vital intermediary in enhancing the connection between users' views on technology and their loyalty. On the other hand, gender does not have a notable impact on customer loyalty. To summarize, the results indicate that improving user trust and refining technological features are more critical in promoting loyalty compared to demographic traits, presenting significant managerial insights for digital banking advancement.

Keywords: Customer Loyalty, Perceived Ease of Use, Perceived Risk, Perceived Usefulness, Trust in Technology.

INTRODUCTION

The rapid diffusion of digital banking platforms has transformed how customers interact with financial institutions, making mobile applications a central channel for day-to-day banking. Understanding what drives long-term user commitment to these platforms is critical for banks seeking sustainable competitive advantage, especially in contexts where demographic groups (such as retirees) may still prefer traditional channels (Alonso-Dos-Santos et al., 2020). This study addresses the case of JConnect Mobile, a mobile banking application offered by Bank Jatim, to investigate which technology-related perceptions drive customer loyalty and how trust in the underlying technology mediates those effects.

Studies on technology adoption have traditionally highlighted perceived usefulness and perceived ease of use as key factors influencing behavioral outcomes, as articulated in the technology acceptance model. More recent scholarship extends this framework by integrating risk perceptions and trust, recognizing that users' concerns about security, privacy, and system reliability substantially shape continued use and loyalty in digital services. Empirical studies across financial services, e-commerce, and information systems report that trust frequently acts as a key mechanism translating usability and

JIMKES

Jurnal Ilmiah Manajemen
Kesatuan
Vol. 14 No. 1, 2026
pp. 865-876
IBI Kesatuan
ISSN 2337 – 7860
E-ISSN 2721 – 169X
DOI: 10.37641/jimkes.v14i1.4479

perceived benefits into sustained engagement (Park & Kim, 2020). Nonetheless, empirical findings vary by context, platform maturity, and user segment, which motivates closer inspection within specific institutional and cultural settings.

Several recent high-quality studies reinforce the need to consider both instrumental and affective determinants of loyalty (Barus, 2020). Work in information systems and banking journals highlights that perceived ease of use and usefulness remain important, but their effects on retention and loyalty are often contingent upon users' trust in the platform and their perceived risk of using it (Saputro & Utomo, 2023; Nuryadin et al., 2025). Other scholars have also noted that risk perceptions do not always directly reduce loyalty, when risks are managed and communicated effectively, the relationship can be nuanced (Rahmawati & Ramli, 2024; Tarigan, 2024). Despite this progress, research focusing on regional mobile banking solutions and on customer segments such as retired account holders remains limited, leaving a gap in understanding how these factors operate in practice for locally developed banking applications.

This article addresses that gap by exploring how perceived ease of use, perceived usefulness, and perceived risk affect customer loyalty to JConnect Mobile, while also investigating if trust in technology mediates those relationships. The research uses a quantitative explanatory approach with survey data from current users and examines structural relationships using PLS-SEM to assess direct and indirect influences. By situating the analysis within the TAM tradition while explicitly modeling risk and trust, the research contributes empirical evidence about the mechanisms that sustain loyalty in a regional digital banking context (Alnsour, 2022; Damayanti et al., 2025).

The remainder of the paper outlines the research problem and hypotheses, presents the empirical strategy and data collection approach, and reports the main findings and their implications. The results clarify which perceptions are most influential for loyalty, demonstrate the mediating role of technological trust, and offer actionable insights for practitioners seeking to enhance long-term engagement with mobile banking services. The study thereby advances theoretical understanding of technology acceptance and loyalty formation while offering practical guidance for improving user retention in digital banking.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

The Determinants Trust in Technology and Customer Loyalty

Literature review serves as the theoretical foundation for this study, aiming to synthesize and evaluate existing research related to technology acceptance and customer loyalty in digital banking. The study adopts the Technology Acceptance Model (TAM) developed by Davis (1989), which explains how users' perceptions of ease of use and usefulness influence their behavioral intentions toward technology adoption. Previous studies, such as Venkatesh and Davis (2000) and Amin et al. (2018), confirmed that Perceived Ease of Use (PEOU) positively affects user satisfaction and loyalty, as users tend to remain loyal to digital platforms that are simple, intuitive, and efficient to operate.

Perceived Usefulness (PU) has also been identified as a critical determinant in digital service contexts, indicating that users continue using applications they perceive as beneficial in improving performance and efficiency (Zhou, 2011; Rahi & Ghani, 2019). Meanwhile, Perceived Risk (PR) represents users' assessment of potential loss or uncertainty in digital transactions. Studies such as Featherman and Pavlou (2003) and Hanafizadeh et al. (2014) highlight that minimizing security, privacy, and financial risks strengthens users' confidence in adopting mobile banking technologies.

H1: Perceived ease of use has a positive and significant effect on customer loyalty.

H2: Perceived usefulness has a positive and significant effect on customer loyalty.

H3: Perceived risk has a positive and significant effect on customer loyalty.

H4: Perceived ease of use has a positive and significant effect on trust in technology.

H5: Perceived usefulness has a positive and significant effect on trust in technology.

H6: Perceived risk has a positive and significant effect on trust in technology.

H7: Trust in technology has a positive and significant effect on customer loyalty.

Trust in Technology as a Mediating Effect

Trust in Technology (TIT) has been widely recognized as a crucial mechanism in explaining user behavior toward digital platforms, particularly in technology-based financial services. In environments characterized by uncertainty and perceived risk, such as mobile banking, trust functions as a psychological assurance that reduces users' concerns and increases their willingness to rely on digital systems (Gefen et al., 2003; McKnight et al., 2011). When users trust a technology, they are more likely to accept its functions, rely on its performance, and continue using it over time.

Previous studies suggest that trust in technology often emerges from positive user perceptions, especially perceived ease of use, perceived usefulness, and perceived security. Systems that are easy to operate and provide clear benefits tend to generate higher levels of trust because users feel more confident and in control when interacting with technology (Davis, 1989; Venkatesh & Davis, 2000). In addition, effective risk management and strong security features enhance trust by reducing users' fears related to data privacy and financial loss (Featherman & Pavlou, 2003).

As a mediating variable, trust in technology plays an important role in transforming user perceptions into behavioral outcomes such as continued usage and customer loyalty. Several empirical studies have shown that even when users perceive a system as useful or easy to use, long-term loyalty is more likely to develop when trust is established (Gefen et al., 2003; Zhou, 2011). Therefore, trust serves as a bridge between cognitive evaluations of technology and affective responses, strengthening the relationship between user perceptions and loyalty in digital banking contexts.

H8: Trust in technology mediates the relationship between perceived ease of use and customer loyalty.

H9: Trust in technology mediates the relationship between perceived usefulness and customer loyalty.

H10: Trust in technology mediates the relationship between perceived risk and customer loyalty.

Gender as a Control Variable

Customer Loyalty (CL) reflects the users' intention to continuously use and recommend the banking application. According to Bui et al. (2022), customer loyalty represents a long-term commitment to repeatedly choosing preferred products or services, built when customers perceive consistent value in their purchases and experiences. Prior research, such as Kassim and Abdullah (2010), Amin et al. (2018), and Mulia et al. (2020), shows that loyalty arises when technological benefits align with users' trust and satisfaction. Thus, this study integrates these constructions into a comprehensive model that explores how PEU, PU, and PR influence customer loyalty through trust in technology, with gender as a control variable to assess potential demographic differences in digital banking behavior.

Gender serves as a control variable since technological perceptions often differ between men and women (Venkatesh & Morris, 2000). Gender is considered a cognitive construct rather than a purely biological factor (Kaur & Kaur, 2022). Men tend to emphasize functionality, while women prioritize safety and trust (Zhou et al., 2020). Including gender helps explain behavioral variation in loyalty toward JConnect Mobile. According to Lexman et al. (2024), gender significantly moderated the relationships among PU, PEOU, and behavioral intention. In particular, the interactions between PU and gender, and between PEOU and gender, demonstrated notable effects on behavioral intention, suggesting that gender moderates how these factors influence users' intentions to use technology. Gender also shapes user loyalty among bus passengers in Greater Valparaíso. Women tend to value service quality attributes such as cleanliness, lighting, and

temperature, which influence their loyalty and perception of the company's image (Arancibia et al., 2025).

H11: Gender has a significant effect on customer loyalty.

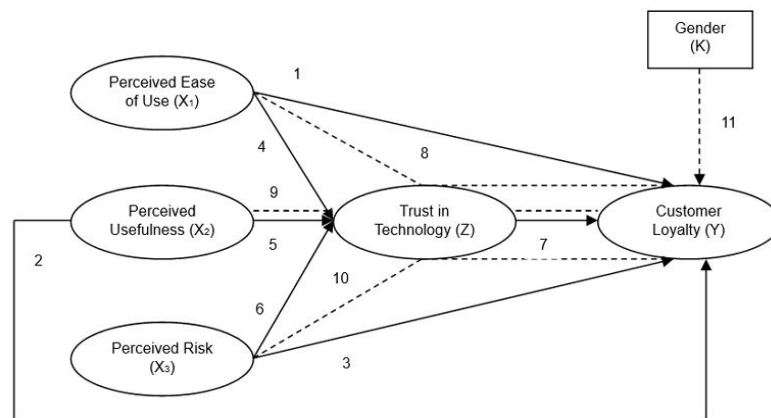


Figure 1. Research Framework

As shown in Figure 1, the framework illustrates the hypothesized pathways linking perceptions, trust, and loyalty, providing insights into how trust mediates user perceptions to strengthen customer loyalty toward JConnect Mobile. This study's conceptual framework integrates PEU, PU, PR, TIT, and CL within the context of JConnect Mobile, a digital banking service by Bank Jatim. The model proposes that PEU, PU, and PR directly influence TIT, which subsequently drives CL. In addition, these three variables are expected to have direct effects on CL, with TIT serving as a mediating variable. Grounded in the TAM by Davis (1989) and supported by trust-based extensions by Gefen et al. (2003), this framework emphasizes how users' perceptions of ease, usefulness, and risk shape trust, which in turn fosters loyalty. Furthermore, Gender is included as a control variable to account for potential behavioral differences in mobile banking adoption. Previous studies suggest that men and women may perceive and trust technology differently, influencing their loyalty patterns (Venkatesh & Morris, 2000; Zhou et al., 2020).

RESEARCH METHODS

This research utilized a quantitative strategy through a survey technique to analyze the impact of Perceived Ease of Use (PEU), Perceived Usefulness (PU), and Perceived Risk (PR) on Customer Loyalty (CL), with Trust in Technology (TIT) serving as a mediator, focusing on JConnect Mobile users from Bank Jatim in East Java, Indonesia. The quantitative approach was selected as it facilitates the objective assessment of relationships between variables via numerical data and statistical evaluation. The population of this study comprised active users of the JConnect Mobile application. A sample of 180 respondents was determined based on the guideline proposed by Hair et al. (2021), which recommends a minimum sample size of ten times the number of indicators of the most complex construct in the model. This approach ensures that the sample size is both adequate and representative for PLS-SEM analysis.

A purposive sampling technique was employed with specific selection criteria: respondents must be customers of Bank Jatim, have used the JConnect Mobile application for at least three months, and possess sufficient understanding of the application's main features. The majority of respondents were aged between 25 and 45 years, reflecting the dominant user group of digital banking services. Gender was included as a control variable to examine potential behavioral differences in customer loyalty among JConnect Mobile users. Primary data in this study were collected through an online questionnaire distributed via Google Forms between June and August 2025. The survey employed a

five-point Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). In addition to primary data, secondary data were obtained from official Bank Jatim reports and relevant academic literature.

Measurement indicators for each construct were adapted from well-established sources. PEU and PU were adopted from Davis (1989), Safari et al. (2022), and Hariyanto and Ellyawati (2023). PR was measured based on Featherman and Pavlou (2003), Yoopetch et al. (2021), and Gupta et al. (2023). Trust in technology was assessed using indicators developed by McKnight et al. (2022), while customer loyalty was adapted from Hariyanto and Anandya (2021). Gender was included as a categorical control variable and coded as 1 for female and 2 for male respondents. Data analysis was performed utilizing SmartPLS version 4.0 through the Partial Least Squares–Structural Equation Modeling (PLS-SEM) method. The findings show that every construct fulfilled the necessary reliability and validity standards, with Cronbach’s Alpha and Composite Reliability scores surpassing 0.7 and Average Variance Extracted (AVE) scores above 0.5. These results verify that the suggested research model is dependable and appropriate for replication in upcoming studies concerning digital banking behavior.

RESULTS

This research offers the results of a quantitative analysis performed on 180 participants, exploring the connections between perceived ease of use, perceived usefulness, perceived risk, trust in technology, and customer loyalty regarding JConnect Mobile, the digital banking platform of Bank Jatim in East Java. Data was gathered through a structured online survey sent to JConnect Mobile users aged 25 years and older who regularly use the application for banking activities. The assessment was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4, evaluating the proposed relationships (H1–H11) as depicted in Figure 1. The model incorporates gender as a control variable to analyze possible variations in customer loyalty behavior. The significance threshold was set at $p < 0.05$, with t -values above 1.96 considered statistically significant, following the standard PLS-SEM criteria (Hair et al., 2021). The findings indicate that perceived ease of use, perceived usefulness, and perceived risk significantly influence trust in technology and customer loyalty, while trust in technology serves as a significant mediating variable. However, gender did not have a significant effect on customer loyalty. These results provide valuable insights for Bank Jatim and other financial institutions regarding how users’ perceptions and technological trust drive loyalty toward digital banking platforms.

Table 1. Demographic Respondents

Characteristic	Category	Frequency	Percentage
Gender	Female	91	51%
	Male	89	49%
	>45 Years	2	1%
Age	18-25 Years	53	29%
	25-35 Years	86	48%
	35-45 Years	39	22%
Education	High School	20	11%
	D1/D2/D3	21	12%
	Bachelor’s Degree	136	75%
	Master’s Degree	3	2%
Occupation	PNS	67	37%
	Private Employee	64	36%
	Entrepreneur	44	24%
	Student	3	2%
Residence	Other	2	1%
	Tulungagung	44	24%
	Kediri	38	21%
	Trenggalek	29	16%
	Malang	25	14%
	Surabaya	19	11%

Characteristic	Category	Frequency	Percentage
Frequency of Use	Probolinggo	15	8%
	Jember	10	6%
	1-3 times	58	32%
	4-6 times	60	33%
	>6 times	62	34%

Table 1 displays the demographic characteristics of participants in this study, revealing a fairly even gender distribution with 51% female and 49% male respondents. Regarding age, the majority of respondents fell within the 25–35 years range (48%), with 35–45 years at 22%, and 18–25 years at 29%, while merely 1% were over 45 years old, suggesting that JConnect Mobile users are mainly within the active working age demographic. In terms of education, a significant portion possess a bachelor's degree (75%), indicating that most users are well-educated and digitally literate. Occupationally, PNS (37%) and private employees (36%) make up the largest groups, followed by entrepreneurs (24%), which aligns with Bank Jatim's customer base that includes many salary recipients and professionals. Most respondents reside in Tulungagung (24%), Kediri (21%), and Trenggalek (16%), reflecting the concentration of Bank Jatim customers in East Java. In terms of usage frequency, JConnect Mobile is used quite actively, with 34% using it more than six times, 33% four to six times, and 32% one to three times, indicating a relatively consistent engagement level among users.

Table 2. Reliability and Validity Result Test

Construct	Cronbach's Alpha	Composite Reliability	AVE
Perceived Ease of Use (PEU)	0.851	0.899	0.691
Perceived Usefulness (PU)	0.868	0.910	0.718
Perceived Risk (PR)	0.781	0.860	0.673
Trust in Technology (TIT)	0.870	0.912	0.721
Customer Loyalty (CL)	0.865	0.907	0.711

Table 2 presents the findings on the reliability and convergent validity for the latent variables incorporated in the research model. The findings indicate that all constructs demonstrate robust internal consistency, evidenced by Cronbach's Alpha values exceeding the suggested minimum of 0.70, with a range from 0.781 to 0.870. Moreover, the Composite Reliability values for every construct surpass the minimum acceptable threshold of 0.70, validating the reliability of the measurement items.

Regarding convergent validity, the AVE values for each construct are greater than 0.50, ranging from 0.673 to 0.721. This suggests that each construct accounts for a substantial proportion of variance in its indicators. Trust in technology and perceived usefulness demonstrate relatively higher AVEs, indicating that their indicators provide particularly strong representations of the underlying constructs. Taken together, these findings indicate that the measurement model satisfies the criteria for reliability and convergent validity. Therefore, all constructions in the study are considered appropriate for subsequent structural model evaluation within the PLS-SEM framework.

Table 3. Direct Effect Test

Hypothesis	Path	β	t-statistics	p-values	Result
H ₁	PEU -> CL	0.302	5.889	0.000	Accepted
H ₂	PU -> CL	0.271	4.415	0.000	Accepted
H ₃	PR -> CL	0.252	5.365	0.000	Accepted
H ₄	PEU -> TIT	0.332	5.271	0.000	Accepted
H ₅	PU -> TIT	0.410	8.262	0.000	Accepted
H ₆	PR -> TIT	0.339	6.241	0.000	Accepted
H ₇	TIT -> CL	0.372	6.289	0.000	Accepted

Note: PEU = Perceived Ease of Use, PU = Perceived Usefulness, PR = Perceived Risk, TIT = Trust in Technology, CL = Customer Loyalty.

Based on Table 3, the results of the direct effect analysis indicate that all proposed hypotheses (H₁–H₇) were supported. Specifically, H₁, H₂, and H₃ revealed that

perceived ease of use ($\beta = 0.302, t = 5.889, p < 0.001$), perceived usefulness ($\beta = 0.271, t = 4.415, p < 0.001$), and perceived risk ($\beta = 0.252, t = 5.365, p < 0.001$) significantly and positively influence customer loyalty. Furthermore, H4, H5, and H6 demonstrated that perceived ease of use ($\beta = 0.332, t = 5.271, p < 0.001$), perceived usefulness ($\beta = 0.410, t = 8.262, p < 0.001$), and perceived risk ($\beta = 0.339, t = 6.241, p < 0.001$) significantly affect trust in technology. In addition, H7 confirmed that trust in technology has a positive and significant impact on customer loyalty ($\beta = 0.372, t = 6.289, p < 0.001$). These findings highlight that users' perceptions of ease of use, usefulness, and risk are essential for developing trust in the JConnect Mobile application, which, in turn, fosters stronger customer loyalty to Bank Jatim's digital banking services.

Table 4. Mediation Effect Test

Hypothesis	Path	β	t-statistics	p-values	Result
H ₈	PEU -> TIT -> CL	0.124	4.672	0.000	Accepted
H ₉	PU -> TIT -> CL	0.152	4.829	0.000	Accepted
H ₁₀	PR -> TIT -> CL	0.126	4.505	0.000	Accepted

Note: PEU = Perceived Ease of Use, PU = Perceived Usefulness, PR = Perceived Risk, TIT = Trust in Technology, CL = Customer Loyalty.

According to Table 4, the mediation analysis findings endorsed the acceptance of H8, H9, and H10. H8 clearly stated that trust in technology serves as an important mediating factor in the relationship between perceived ease of use and customer loyalty ($\beta = 0.124, t = 4.672, p < 0.001$). Similarly, H9 suggested that trust in technology serves as a mediator in the relationship between perceived usefulness and customer loyalty ($\beta = 0.152, t = 4.829, p < 0.001$). Moreover, H10 indicated that trust in technology acts as a mediator in the relationship between perceived risk and customer loyalty ($\beta = 0.126, t = 4.505, p < 0.001$). These findings highlight the critical role of trust in technology as a mediator that amplifies the effects of perceived ease of use, perceived usefulness, and perceived risk on customer loyalty. This suggests that as users develop a strong trust in JConnect Mobile, they are more likely to remain loyal to the service, even when they acknowledge potential risks or drawbacks of the system.

Gender was incorporated as a control variable through a single-item observed variable that utilized dummy coding (male = 2, female = 1). It was directly connected to customer loyalty to explore demographic influences on user loyalty. According to Hair et al. (2022), in PLS-SEM, control variables can be represented as individual indicators without validity assessments, since gender is not a reflective construct. The influence of gender was assessed by examining the path coefficient and the change in R² for the dependent variable.

Table 5. Control Variable Effect

Test	Value
Path	Gender -> Customer Loyalty
β	-0.002
t-statistics	0.041
p-values	0.968
Result	H11 Rejected

Table 5 presents the analysis of control variables, indicating that Hypothesis H11 (gender on customer loyalty) was unsupported, as gender's effect on customer loyalty proved to be statistically insignificant ($\beta = -0.002, t = 0.041, p = 0.968$). Since the p-value is greater than 0.05 and the t-statistic falls short of the critical threshold of 1.96, H11 was dismissed. This result suggests that gender does not significantly affect customer loyalty to the JConnect Mobile application. Male and female users demonstrate comparable loyalty levels, indicating that loyalty here is more significantly shaped by technological perceptions, including ease of use, usefulness, perceived risk, and trust in technology, instead of demographic factors such as gender.

DISCUSSION

The results of this research offer a significant understanding of perceived ease of use, perceived usefulness, perceived risk, trust in technology, and customer loyalty regarding banking technology. The findings indicate that H1 (perceived ease of use on customer loyalty) is validated, demonstrating a positive and significant association ($\beta = 0.302$; $t = 5.889$; $p < 0.001$). This discovery indicates that when users view the JConnect Mobile app as user-friendly, their comfort, efficiency, and confidence in making transactions rise, thereby enhancing their loyalty to Bank Jatim's digital banking offerings. This finding aligns with earlier research by Wilsson et al. (2021), Izzah et al. (2022), and Hafssa et al. (2024), highlighting that users typically show loyalty towards technologies that are uncomplicated and easy to understand.

The results for H2 (perceived usefulness on customer loyalty) also indicate a positive and significant effect ($\beta = 0.271$; $t = 4.415$; $p < 0.001$). This implies that when users perceive JConnect Mobile as useful by offering faster transactions, easy access, and improved efficiency, they are more likely to develop stronger loyalty toward the service. Perceived usefulness encourages continued use because customers recognize the application's value in supporting their daily banking activities. This finding aligns with Park and Kim (2021), Suroso and Wahyudi (2021), and Faizah and Sanaji (2022), who found that perceived usefulness plays a key role in sustaining customer loyalty. H3 (perceived risk on customer loyalty) also shows a positive and significant relationship ($\beta = 0.252$; $t = 5.365$; $p < 0.001$). Although users may perceive certain risks, such as data security issues or system errors, their loyalty remains strong because they trust Bank Jatim's ability to manage these risks effectively. Proper risk management increases user confidence and reinforces loyalty, supporting the findings of Esmaili et al. (2021) and Suroso and Wahyudi (2021).

Furthermore, the results show that perceived ease of use (H4), perceived usefulness (H5), and perceived risk (H6) each have a positive and significant influence on trust in technology. H4 indicates that ease of use enhances trust in technology ($\beta = 0.332$; $t = 5.271$; $p = 0.000$), as users are more confident in systems that are simple and easy to operate. This finding is consistent with Barus (2020), Faizah and Sanaji (2022), and Kurniawan et al. (2023). H5 demonstrates the strongest effect on trust ($\beta = 0.410$; $t = 8.262$; $p = 0.000$), showing that perceived usefulness significantly strengthens trust when users experience real benefits such as efficiency, convenience, and transaction accuracy (Wilson et al., 2021; Hafssa et al., 2024). H6 also reveals a significant effect ($\beta = 0.339$; $t = 6.241$; $p = 0.000$), indicating that users are more likely to trust the technology when potential risks are well managed by the bank (Santos et al., 2020; Choudhury et al., 2022; Faqih, 2022; Kurniawan et al., 2023).

Hypothesis H7 confirms that trust in technology has a positive and significant effect on customer loyalty ($\beta = 0.372$; $t = 6.289$; $p = 0.000$). Customers who trust the JConnect Mobile system as secure and reliable are more likely to continue using the service and recommend it to others. This finding is in line with previous studies by Izzah et al. (2022), Faizah and Sanaji (2022), and Hafssa et al. (2024). The indirect effect analysis shows that trust in technology partially mediates the relationships between perceived ease of use, perceived usefulness, perceived risk, and customer loyalty. Significant mediation effects were found for H8 ($\beta = 0.124$; $t = 4.672$; $p = 0.000$), H9 ($\beta = 0.152$; $t = 4.829$; $p = 0.000$), and H10 ($\beta = 0.126$; $t = 4.505$; $p = 0.000$). These results indicate that ease of use, usefulness, and effective risk management strengthen customer loyalty by building trust, while also maintaining their direct effects on loyalty (Pahlevi & Suhartanto, 2020; Esmaili et al., 2021; Wilson et al., 2021; Suroso & Wahyudi, 2021; Harianto & Ellyawati, 2023). The findings for the gender control variable (H11) indicate no meaningful impact on customer loyalty ($\beta = -0.002$; $t = 0.041$; $p = 0.968$). This shows that male and female users display comparable loyalty to the JConnect Mobile app. This result corroborates earlier research by Zhou (2011), Amin et al. (2018), Liana et al. (2023), and Van Deventer (2024), which conclude that user experience and technological

reliability are more influential in driving loyalty in digital banking than demographic aspects like gender.

CONCLUSION

This study shows that perceived ease of use, perceived usefulness, and perceived risk are important factors influencing customer loyalty toward the JConnect Mobile application, both directly and indirectly through trust in technology. When users perceive the application as easy to use, beneficial, and secure, their trust in the system increases, thereby strengthening their loyalty to Bank Jatim's digital banking services. Among all examined variables, trust in technology plays a central role in linking user perceptions to loyalty, reinforcing the applicability of the TAM in explaining mobile banking behavior. In contrast, the gender control variable does not significantly affect customer loyalty, indicating that male and female users demonstrate similar behavioral patterns in using mobile banking applications.

From a practical perspective, these findings highlight the need for Bank Jatim to focus on improving the ease of use, usefulness, and security of the JConnect Mobile application to strengthen customer trust and loyalty. Maintaining and enhancing user trust should be treated as a strategic priority, as trust significantly contributes to customers' willingness to continue using and remain loyal to the digital banking service. By delivering a reliable, user-friendly, and secure application, Bank Jatim can strengthen long-term customer relationships in an increasingly competitive digital banking environment. From an academic standpoint, this study contributes to the literature on mobile banking adoption and customer loyalty in the Indonesian context by integrating perceived risk and trust into the TAM framework. Future studies may expand the research scope and include additional variables, as well as qualitative approaches, to gain deeper insights into user loyalty in digital banking. Moreover, employing a larger and more diverse sample across different regions and user segments would enhance the generalizability of the findings and provide deeper insights into digital banking usage behavior.

FUNDING STATEMENT: This research did not receive any specific grant from funding agencies in the public, commercial, or not - for - profit sectors.

CONFLICTS OF INTEREST: The author declares no conflict of interest.

DECLARATION OF GENERATIVE AI STATEMENT: During the preparation of this work, the author used Turnitin, Grammarly, and ChatGPT to improve sentence structure and overall clarity. All content was then reviewed, edited, and refined by the author, who takes full responsibility for the accuracy, integrity, and originality of the final publication.

REFERENCES

- [1] Alnsour, I. R. (2022). Impact of fintech over consumer experience and loyalty intentions: an empirical study on Jordanian Islamic Banks. *Cogent Business & Management*, 9(1), 98-112.
- [2] Alonso-Dos-Santos, M., Soto-Fuentes, Y., & Valderrama-Palma, V. A. (2020). Determinants of mobile banking users' loyalty. *Journal of Promotion Management*, 26(5), 615-633.
- [3] Amin, H., Abdul-Rahman, A. R., & Razak, D. A. (2018). Consumer acceptance of Islamic home financing: Empirical evidence from Malaysia. *International Journal of Housing Markets and Analysis*, 11(4), 687-706.
- [4] Arancibia, S., González, F., Busco, C., Vera, T., & Yuretic, M. (2025). Recognizing user satisfaction and loyalty in bus and metro services: A gender-based analysis using PLS-SEM. *Research in Transportation Business & Management*, 59(3), 322-333.
- [5] Barus, I. R. (2020). The effects of perceived ease of use, security, and promotion on trust and its implications on fintech adoption. *Journal of Consumer Sciences*, 2(1), 151-131.

- [6] Bui, N., Moore, Z., Wimmer, H., & Pham, L. (2022). Predicting customer loyalty in the mobile banking setting: An integrated approach. *International Journal of E-Services and Mobile Applications (IJESMA)*, 14(1), 1-22.
- [7] Choudhury, A., Jones, J., & Opare-Addo, M. (2022). Perceived risk and willingness to provide loan to smallholder farmers in Ghana. *Journal of African Business*, 23(1), 23–40.
- [8] Damayanti, N. A., Mutmainah, I., & Fitriyanti, D. (2025). Analysis of factors influencing gen z's interest in using digital financial applications. *Jurnal Ilmiah Manajemen Kesatuan*, 13(1), 17-38.
- [9] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- [10] Esmaili, A., Haghgoo, I., Davidavičienė, V., & Meidutė-Kavaliauskienė, I. (2021). Customer loyalty in mobile banking: Evaluation of perceived risk, relative advantages, and usability factors. *Engineering Economics*, 32(1), 70–81.
- [11] Faizah, N., & Sanaji, S. (2022). Pengaruh perceived ease of use dan perceived usefulness terhadap loyalitas dengan trust sebagai variabel intervening terhadap penggunaan aplikasi Warung Pintar. *Jurnal Ilmu Manajemen* 2(1), 946–959.
- [12] Faqih, K. M. (2022). Internet shopping in the COVID-19 era: Investigating the role of perceived risk, anxiety, gender, culture, and trust in the consumers' purchasing behavior from a developing country context. *Technology in Society*, 70(1), 92-102.
- [13] Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human Computer Studies*, 59(4), 451–474.
- [14] Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(1), 51–90.
- [15] Gupta, S., Pandey, D. K., El Ammari, A., & Sahu, G. P. (2023). Do perceived risks and benefits impact trust and willingness to adopt CBDCs? *Research in International Business and Finance*, 66(1), 93-104.
- [16] Hafssa, Y., Amina, A., & Oumaima, B. (2024). Determinants of customer loyalty in e-banking: Evidence from Morocco. In *2024 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD)* (pp. 1–5). New York: IEEE.
- [17] Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Berlin: Springer Nature.
- [18] Hanafizadeh, P., Koshksaray, A. K., & Khatoun, B. (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*, 31(1), 62–78.
- [19] Harianto, E. F. E., & Ellyawati, J. (2023). The influence of perceived usefulness, trust, and risk on loyalty in the TikTok shop: Test of consumer satisfaction as a mediation variable. *Journal of Entrepreneurship & Business*, 4(1), 13–23.
- [20] Hariyanto, M. A. D., & Anandya, D. (2021). The significance of service quality on customer loyalty with corporate image and customer satisfaction as mediators. *Manajemen dan Bisnis*, 20(2), 111–121.
- [21] Izzah, N. N., Budiarmo, A., & Listyorini, S. (2022). Pengaruh e-service quality, perceived ease of use, dan brand trust terhadap loyalitas konsumen (Studi kasus pada konsumen Pizza Hut Delivery Pekalongan). *Jurnal Ilmu Administrasi Bisnis*, 11(1), 50–58.
- [22] Kassim, N. M., & Abdullah, N. A. (2010). The effect of perceived service quality dimensions on customer satisfaction, trust, and loyalty in e-commerce settings: A cross-cultural analysis. *Asia Pacific Journal of Marketing and Logistics*, 22(3), 351–371.
- [23] Kaur, D., & Kaur, R. (2022). Elucidating the role of gender differences via TAM in e-recruitment adoption in India: a multi-group analysis using MICOM. *The Bottom Line*, 35(3), 115-136.
- [24] Kurniawan, S., & Tankoma, A. (2023). The effect of perceived ease of use and perceived enjoyment on customer trust and loyalty in online food delivery service. *Binus Business Review*, 14(2), 163–170.
- [25] Liana, P., Jaensson, J. E., & Mmari, G. (2023). Service quality dimensions as predictors of customer loyalty in mobile payment services: Moderating effect of gender. *Future Business Journal*, 9(1), 98-105.
- [26] McKnight, D. H., Carter, M., Thatcher, J. B., & Clay, P. F. (2011). Trust in a specific technology: An investigation of its components and measures. *ACM Transactions on Management Information Systems*, 2(2), 12-20.
- [27] Mulia, D., Usman, H., & Parwanto, N. B. (2021). The role of customer intimacy in increasing Islamic bank customer loyalty in using e-banking and m-banking. *Journal of Islamic Marketing*, 12(6), 1097-1123.
- [28] Nuryadin, D., Indupurnahayu, I., Hafidhuddin, D., & Beik, I. S. (2025). Community acceptance of digital zis payment technology: Evidence from BAZNAS Tangerang Selatan City. *Jurnal Ilmiah Manajemen Kesatuan*, 13(4), 3297-3300.
- [29] Pahlevi, M. R., & Suhartanto, D. (2020). The integrated model of green loyalty: Evidence from eco-friendly plastic products. *Journal of Cleaner Production*, 257(1), 44-55.
- [30] Park, J., & Kim, R. B. (2020). The effect of app quality and compatibility on consumers' omnichannel (OC) app adoption and loyalty: Comparison of US and Korean consumers. In *Digital Marketing & eCommerce Conference* (pp. 163–178). New York: Springer International Publishing.
- [31] Rahi, S., & Ghani, M. A. (2019). Integration of unified theory of acceptance and use of technology in internet banking adoption setting: Evidence from Pakistan. *Technology in Society*, 58(1), 20-30.

- [32] Rahmawati, A., & Ramli, A. H. (2024). E-trust, perceived ease of use, e-satisfaction and e-loyalty for users of the TikTok shop application. *Jurnal Ilmiah Manajemen Kesatuan*, 12(1), 279-294.
- [33] Saputro, A. W., & Utomo, H. (2023). Pengaruh e-service quality terhadap e-loyalty dengan brand image dan e-satisfaction sebagai variabel mediasi. *Jurnal Ilmiah Manajemen Kesatuan*. 11(2). 197-212.
- [34] Suroso, J., & Wahjudi, J. (2021). Analysis of factors affecting satisfaction and loyalty of digital loan customers at PT Bank XYZ. *Journal of Theoretical and Applied Information Technology*, 99(11), 2617–2631.
- [35] Tarigan, L. L., Munte, E. D., Siahaan, B. N., Siagian, D. L., & Halawa, V. J. (2024). Factors affecting public interest in applying for loans to bank: case study on furniture entrepreneurs in Medan City. *Jurnal Ilmiah Manajemen Kesatuan*, 12(6), 2771-2782.
- [36] Van Deventer, M. (2024). Differences in Generation Y male and female customers perceived mobile banking trust, information, and system quality. *Banks and Bank Systems*, 19(4), 44–57.
- [37] Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204.
- [38] Venkatesh, V., & Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS Quarterly*, 24(1), 115–139.
- [39] Wilson, N., Keni, K., & Tan, P. H. P. (2021). The role of perceived usefulness and perceived ease of use toward satisfaction and trust which influence computer consumers' loyalty in China. *Gadjah Mada International Journal of Business*, 23(3), 262–294.
- [40] Yoopetch, P., Yoopetch, P., & Yoopetch, C. (2021). The effects of electronic word-of-mouth (eWOM), perceived ease of use, perceived usefulness, and perceived risk on online hotel booking application loyalty. *Content Page* 29(1), 153-163.
- [41] Zhou, J., Zhang, B., Tan, R., Tseng, M.-L., & Zhang, Y. (2020). Exploring the systematic attributes influencing gerontechnology adoption for elderly users using a meta-analysis. *Sustainability*, 12(7), 2864-2874.
- [42] Zhou, T. (2011). An empirical examination of initial trust in mobile banking. *Internet Research*, 21(5), 527–540.

*The Effect of
Technology Perception
on Customer Loyalty*

876
