Perceived Security and Digital Touchpoint Quality Influence BRImo Customer Experience among UINSU FEBI Students

Rizvy Azyura[1*], Nurbaiti[2], Muhammad Ikhsan Harahap[3]
[1,2,3]Universitas Islam Negeri Sumatera Utara, Indonesia
risviazzura@gmail.com[1*], nurbaiti@uinsu.ac.id[2], m.ikhsan.harahap@uinsu.ac.id[3]

Abstract

This study investigates how perceived security and the caliber of digital touchpoints influence the customer experience of BRImo mobile banking among students enrolled in the FEBI at the UINSU. A quantitative explanatory design was adopted, involving a population of 4,073 students and a sample of 98 respondents selected through simple random probability sampling. The sample size was determined using Slovin's formula with a 10% error tolerance. Data were obtained via an online questionnaire employing a five-level Likert scale. The analytical procedures encompassed descriptive statistics, classical assumption assessments, and multiple linear regression, supported by partial t-tests, a simultaneous F-test, and the coefficient of determination. The results revealed that perceived security exerted a positive and significant influence on customer experience. Digital touchpoint quality likewise demonstrated a positive and statistically meaningful effect. Considered collectively, both variables significantly predicted customer experience. The Adjusted R^2 value of 0.273 indicates that the proposed model accounted for 27.3% of the observed variation, whereas the remaining 72.7% stemmed from influences outside the model. These findings suggest that a favorable BRImo experience is shaped by users' assurance regarding the safeguarding of personal information and transactions, alongside the effectiveness of their interactions with the platform's digital features. This study was limited to 98 FEBI UINSU students, potentially restricting the generalizability of its findings. This study provides empirical insights into how perceived security and digital touchpoint quality influence mobile banking customer experience.

Keywords: *BRImo, Customer Experience, Digital Touchpoint, Mobile Banking, Perceived Security*

1. INTRODUCTION

Advances in financial technology have transformed banking services delivery. Mobile banking enables customers to complete transactions in real time without visiting physical branches. BRImo, an application developed by Bank Rakyat Indonesia (BRI), illustrates this development. Its role extends beyond facilitating transactions because the quality, speed, convenience, and personalization of digital interactions can shape customers experiences with banking services. Prior research has linked mobile banking use with perceived usefulness, security, and digital service quality, which together contribute to customer satisfaction and experience (Wijatmoko et al., 2025).

Two factors that may be especially relevant to the mobile banking experience are perceived security and the quality of digital touchpoints. Perceived security concerns the extent to which users believe that their personal information, privacy, accounts, and transactions are adequately protected. A stronger sense of security can increase users' confidence in digital transactions (Murniati, Nia, Rika, Syata, & Basri, 2026). Research on mobile banking adoption has identified security perceptions and trust in technology as relevant considerations, although their influence may differ according to users' characteristics and experiences (Apaua & Lallie, 2022; Lubis et al., 2023). In contrast, digital touchpoint quality relates to the quality of users' interactions with the application, including interface design, navigation, response time, and accessibility of its features. Technical interruptions and difficult navigation may undermine the experience, even when an application provides many functions (Putri et al., 2025).

Mobile banking has become an increasingly familiar financial tool among university students, including those studying at Faculty of Islamic Economics and Business (*Fakultas Ekonomi dan Bisnis Islam/* FEBI), Universitas Islam Negeri Sumatera Utara, Indonesia. Institutional records show that the faculty had 4,073 active students enrolled in it. Using Slovin formula with a 10% error allowance and simple random sampling, the preliminary survey involved 98 respondents from the selected schools. Information was gathered through Google Forms and initial conversations with active mobile banking

users, focusing on perceived security, operational simplicity, technical interruptions, and the application's interface and features. Interviews with ten BRImo users indicated that the application was generally regarded as practical, although digital vulnerability was a concern. Seven students felt reasonably secure but continued to exercise caution, and three were unsure whether their personal information was adequately protected. Although eight participants viewed the interface favorably, four reported login difficulties and transaction delays. These preliminary findings provide an initial picture of students' perceptions of BRImo security, usability, system reliability, and digital interaction.

These initial observations should not be interpreted as evidence that BRImo technical security systems are inadequate. Perceived security is a user's subjective judgment about whether their data, identity, account balance, and transactions are protected, therefore, it is distinct from a technical audit of a bank's security infrastructure. Users may worry about phishing and social engineering that attempt to obtain One-Time Passwords (OTPs) or Personal Identification Numbers (PINs), unsafe devices, stolen credentials, misuse of personal data, and uncertainty about the handling of unauthorized transactions. Unclear explanations of authentication or account recovery procedures may also affect confidence. Consequently, the present study focuses on users' perceptions of protection, confidentiality, and transaction security rather than making claims about the actual security conditions of BRImo (Apaua & Lallie, 2022; Almaiah et al., 2023).

Earlier investigations have yielded different conclusions regarding the role of security in shaping mobile banking experiences. Astika et al. (2025) found that a stronger sense of protection can foster trust and improve satisfaction, whereas Aningsy et al. (2025) suggested that security may carry less weight among younger users, who often prioritize speed and practicality. Studies involving FEBI UINSU students have also explored security awareness and password-related habits, establishing this population as a relevant setting for examining digital banking perceptions (Fauzi et al., 2024). Such divergent findings warrant further investigation by the academic community.

Digital touchpoint quality has also been linked to customer experience, particularly through ease of navigation, interface clarity, and processing speed. Putri et al. (2025) highlighted how technical faults, sluggish loading, and confusing layouts undermine user satisfaction. Preliminary observations at FEBI UINSU revealed a similar contrast: some students appreciated BRImo interface, while others encountered application glitches or struggled to understand specific features. This mismatch between the anticipated and actual digital service performance reflects a gap in touchpoint quality. A related finding by Siregar et al. (2023) showed that trust in mobile banking does not automatically translate into user satisfaction among FEBI students.

The issue can also be considered through ethical principles in Islamic economics, particularly *amanah* (trustworthiness) and *hifz al-mal* (protection of wealth). These principles emphasize the responsible handling of information and the protection of people's financial interests. In this article, they provide an ethical lens for interpreting the importance of security and user protection; they do not mean that BRImo is an Islamic banking product (Ichsan et al., 2024; Fauzi et al., 2026). Against this background, this study evaluates perceived security and digital touchpoint quality together as predictors of customer experience among BRImo users who are FEBI UINSU students. This study contributes context-specific evidence on how users' security perceptions and their day-to-day interactions with a mobile banking application relate to the overall experience.

2. LITERATURE REVIEW

2.1 Technology Acceptance Model

This study draws on the Technology Acceptance Model (TAM) introduced by Davis (1989) to explain how individuals embrace technological systems. The model rests on two principal elements: perceived usefulness and perceived ease of use, which help clarify users' willingness to engage with a particular technology. In mobile banking, favorable experiences are more likely when an application is considered beneficial for transactions and uncomplicated to operate (Susi & Rayyani, 2026). Digital

touchpoint quality in this study is chiefly associated with perceived ease of use, as it covers navigational flow, interface arrangement, response time, operational stability, and information legibility (Fatiha, Saharuddin, & Makkasau, 2024). These features are not original TAM constructs, rather, they are service attributes that may shape perceptions of a system's usefulness and operational simplicity.

Perceived security likewise falls outside the two foundational constructs of the original TAM. Accordingly, this study adopts the TAM as its theoretical starting point while treating security perception as an additional external influence relevant to digital financial services. Security perceptions may strengthen users' assurance when engaging with an application, whereas touchpoint quality shapes the character of their interactions with its features. Customer experience is therefore treated as the resulting assessment formed through users' encounters with the application, not as one of TAM original core components.

2.2 Customer Experience

Customer experience refers to the totality of personal impressions that arise as individuals engage with a product, service, or organization at various stages of their journey. Arkadan et al. (2024) described it as a multifaceted phenomenon involving mental appraisals, emotional reactions, behavioral tendencies, sensory impressions, and social responses formed through encounters across multiple touchpoints. Thus, the concept extends beyond the outcome of a service, embracing the full sequence of interactions from the initial encounter to the concluding stages.

Furthermore, in more recent conceptualizations, customer experience is understood as a subjective, goal-directed, and multidimensional mental response that arises when customers interact with service providers at every stage of their journey (Gahler et al., 2023). These responses involve several key dimensions, including the affective (emotions and feelings), cognitive (thoughts and evaluations), physical (behaviors), relational (social interactions), and sensory (sensory experiences) dimensions. Together, these dimensions shape customers' overall perceptions of the services they receive from a restaurant.

In addition, recent literature emphasizes that customer experience is a dynamic and evolving concept influenced by various factors such as service characteristics, digital interactions, and increasingly complex omnichannel contexts (Zha et al., 2023). In digital environments, customer experience is no longer linear but is formed through various interconnected interactions across platforms, including mobile applications, social media, and other online services. Therefore, customer experience represents customers' holistic perceptions formed through the accumulation of interactions across all company touchpoints. It involves emotional, cognitive, and behavioral aspects and serves as a key factor in determining customer satisfaction, loyalty, and the sustainability of customer relationships with organizations.

2.3 Perceived Security

Perceived security refers to the extent to which individuals consider a digital platform capable of keeping their personal information, financial dealings, and privacy safe from online threats. Within mobile banking, this perception concerns users' sense of protection against incidents such as information theft, fraud, and unauthorized access to financial records. Almaiah et al. (2023) similarly associate perceived security with users' beliefs about the safeguards surrounding mobile banking data, privacy, and transactions. Such assurance may be reinforced by protective measures, including encryption, multi-factor verification, and systems designed to detect or counter cyberthreats.

A distinction must be made between perceived and actual security. The former concerns users' personal judgments shaped by their understanding, previous encounters, received information, and awareness of potential dangers, while the latter concerns the technical safeguards and protective protocols established by a service provider (Noventa, 2024). Consequently, the presence of security mechanisms does not automatically eliminate users' apprehension, particularly because internal banking protection is not always directly observable. Threats such as phishing and social engineering

further illustrate how online safety depends not only on application safeguards but also on users' vigilance and behavior. Apaua and Lallie (2022) investigated the assessment of perceived security in mobile banking and linked it to application acceptance and use. Almaiah et al. (2023) also considered this perception alongside perceived risk and trust. Accordingly, the concerns expressed by BRImo users in this study are interpreted as subjective assessments rather than direct proof of technical security deficiencies.

Beyond its technical dimension, perceived security reflects users' confidence in a system's capacity to preserve safety. Almaiah et al. (2023) further highlighted its relevance to trust, attitudes, and decisions to adopt mobile banking. Greater perceived protection may therefore encourage users to feel more at ease, have greater confidence in the service, and maintain their use of mobile banking.

2.4 Digital Touchpoint Quality

Digital touchpoint quality refers to the effectiveness and quality of all digitally mediated interaction points between users and service providers during the customer journey. A touchpoint is defined as any moment or point of contact experienced by users in their relationship with a brand or service, whether before, during, or after service use (Weippert, 2024). In digital contexts, touchpoints encompass various technological interfaces, such as mobile applications, websites, and other digital platforms that serve as primary interaction channels between users and systems.

Digital touchpoint quality describes how effectively each online contact point delivers a smooth and favorable interaction through operational simplicity, prompt system responses, reliable information, and an interface that users can navigate without difficulty. Cheng and Lian (2023) indicated that the quality of digital banking encounters is shaped by the availability and consistency of interaction channels, service responsiveness, and effort required to complete processes throughout the user journey. Similarly, Kim and So (2024) position digital touchpoints as integral to a connected customer experience, encompassing interface technologies, automated communication, and direct service interactions that jointly influence how users judge a service. Accordingly, digital touchpoint quality refers to the capacity of digital contact points to offer interactions that are coherent, effortless, responsive, and gratifying (Kasir, Adita, & Randi, 2026). When these encounters function well, users may develop more favorable impressions of the service, strengthening satisfaction, confidence, and the likelihood of continued engagement with digital platforms, such as mobile banking.

3. RESEARCH METHODOLOGY

This research adopts a quantitative framework with an explanatory design to investigate variable relationships and assess the proposed hypotheses. This approach enables the measured attributes to be examined objectively and their associations to be evaluated through inferential statistical procedures (Sekaran & Bougie, 2013). Therefore, it is suited for assessing how perceived security and digital touchpoint quality affect the customer experience of BRImo users. As noted by Hair et al. (2019), quantitative explanatory methods are frequently applied in information systems and digital behavior studies to produce measurable empirical findings that may support broader generalizations.

The research population comprised 4,073 active students enrolled at FEBI UINSU. This group was chosen because students regularly engage with digital technologies, including mobile banking, and are generally familiar with their use. Respondents were selected through probability-based simple random sampling, giving each population member an equal opportunity to participate. The required sample size was established using Slovin formula with a 10% margin of error, as presented below in Formula 1:

$$n = N/(1 + N(e^2)) \quad (1)$$

The calculation yielded a sample requirement of 97.60, which was rounded up to 98 participants. This number was deemed adequate to represent the study population and to

accommodate multivariate statistical procedures (Hair et al., 2019). The investigation relied on firsthand data obtained from respondents through a questionnaire structured around a five-point Likert scale (1–5). Perceived security was assessed through transaction safeguards, personal information confidentiality, and confidence in the system. Digital touchpoint quality was examined through navigational convenience, interface design, processing responsiveness, and feature completeness. Customer experience was evaluated through cognitive and emotional responses, together with perceived ease during application use. Likert scaling is widely regarded as a practical means of quantifying attitudes and perceptions in digital behavior research (Joshi et al., 2015).

Questionnaires were circulated online using platforms such as Google Forms, allowing digitally familiar university students to participate efficiently. This distribution method facilitated access to respondents while helping to limit potential collection-related bias. Instrument quality was examined through validity and reliability testing to determine whether the items captured their intended constructs accurately and consistently. Pearson Product–Moment correlation was used for validity assessment, while internal consistency was evaluated using Cronbach alpha, with 0.70 established as the minimum acceptable coefficient (Hair et al., 2019). Multiple linear regression was applied to determine the relationship between the two independent variables and the dependent variable. The regression model is expressed as follows in Formula 2:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \varepsilon \quad (2)$$

In this regression model, Y represents customer experience, while X_1 and X_2 represent perceived security and digital touchpoint quality, respectively. The symbol β_0 denotes the constant, β_1 and β_2 represent the regression coefficients of the respective independent variables, and ε represents the error term. The proposed regression framework assesses the individual and collective contributions of perceived security and digital touchpoint quality to the customer experience of BRImo users. The analytical process was divided into several phases, beginning with descriptive statistics to portray the respondent profiles and answer patterns, followed by classical assumption examinations and hypothesis testing. The assumption checks comprised the Kolmogorov–Smirnov normality test, multicollinearity assessment using the Variance Inflation Factor (VIF), heteroscedasticity inspection using scatterplots, and linearity testing. Hypotheses were subsequently examined through partial *t*-tests and a joint F-test, while R^2 was used to gauge the variation in customer experience that could be accounted for by the model. Multiple linear regression is frequently employed in digital consumer behavior studies to investigate the relationships among variables using empirical evidence (Ghozali, 2023). Overall, the methodological framework was arranged to generate dependable and valid findings regarding how perceived security and digital touchpoint quality shape the BRImo experience of FEBI UINSU students.

4. RESULTS AND DISCUSSION

4.1 Respondent Characteristics

The respondent profile outlines the backgrounds of the study participants through attributes such as gender, age, and duration of usage. Examining these attributes helps situate the collected data and supports a more discerning interpretation of the results, as variations among participants may shape how they perceive and respond to the research variables. In quantitative studies, the sample composition is commonly illustrated through frequency counts and percentage distributions.

Table 1. Respondent characteristics

Characteristic	Category	Number	Percentage (%)
Gender	Male	38	38.4
	Female	60	61.6
Age	18–20 years	41	42.3
	21–23 years	48	49

Characteristic	Category	Number	Percentage (%)
Age	>23 years	9	8.7
Study Program	Islamic Economics	38	38.8
	Islamic Banking	20	20.4
	Islamic Accounting	16	16.3
	Islamic Insurance	10	10.2
	Management	14	14.3
Length of BRImo Use	3 years	13	13.1

Table 1 shows that women accounted for the largest share of participants (61.6 %). Respondents aged 21–23 formed the largest age bracket, representing a group generally accustomed to digital technology. By academic program, Islamic Economics contributed the highest proportion. Meanwhile, 53.8% of participants had been using BRImo for one to three years, suggesting meaningful familiarity with the application. Taken together, these attributes indicate that the sample possesses relevant characteristics for examining the BRImo customer experience.

4.2 Descriptive Analysis of Variables

Descriptive statistics provide a concise portrayal of the collected data through summary measures, such as the mean, allowing the characteristics of each variable to be understood without testing any hypotheses. In quantitative studies, this procedure acts as an analytical step to recognize data patterns before proceeding to more advanced statistical examinations.

Table 2. Descriptive analysis of variables

Variables	Mean	Category
Perceived Security (X_1)	26.16	Fairly Good
Digital Touchpoint Quality (X_2)	33.05	Good
Customer Experience (Y)	33.02	Good

Table 2 shows descriptive results from 98 participants yielded an average score of 26.16 for perceived security, suggesting that respondents generally viewed the service's protective aspects reasonably positively. Digital touchpoint quality recorded a mean of 33.05, reflecting favorable assessments of the digital interaction process, while customer experience averaged 33.02, indicating an overall positive impression of service use. Among the three measures, digital touchpoint quality ranked highest, narrowly exceeding customer experience, whereas perceived security had the lowest average. This pattern suggests that respondents rated the quality of their digital interactions slightly higher than the other measured aspects.

4.3 Instrument Test Results (Data Quality)

4.3.1 Validity Test

Validity assessment determines whether each instrument item genuinely captures the concept it is intended to measure. This procedure commonly applies Pearson product–moment correlation, with the observed (r)-value evaluated against its critical threshold. An item is deemed valid when the calculated (r)-value exceeds the table value and its significance level falls below 0.05. Such verification helps establish that the collected measurements adequately reflect the variables being investigated (Fitri, Alayyannur, Tualeka, & Zuhri, 2026).

Table 3. Validity test

Item	Calculated *r*-value	Critical *r*-value	Conclusion
X_1.1	0.727	0.1986	Valid
X_1.2	0.801	0.1986	Valid
X_1.3	0.781	0.1986	Valid
X_1.4	0.758	0.1986	Valid

Item	Calculated *r*-value	Critical *r*-value	Conclusion
X_1.5	0.767	0.1986	Valid
X_1.6	0.758	0.1986	Valid
X_1.7	0.838	0.1986	Valid
X_1.8	0.816	0.1986	Valid
X_2.1	0.692	0.1986	Valid
X_2.2	0.671	0.1986	Valid
X_2.3	0.707	0.1986	Valid
X_2.4	0.657	0.1986	Valid
X_2.5	0.733	0.1986	Valid
X_2.6	0.731	0.1986	Valid
X_2.7	0.767	0.1986	Valid
X_2.8	0.693	0.1986	Valid
X_2.9	0.822	0.1986	Valid
X_2.10	0.775	0.1986	Valid
Y.1	0.735	0.1986	Valid
Y.2	0.726	0.1986	Valid
Y.3	0.773	0.1986	Valid
Y.4	0.815	0.1986	Valid
Y.5	0.751	0.1986	Valid
Y.6	0.792	0.1986	Valid
Y.7	0.711	0.1986	Valid
Y.8	0.763	0.1986	Valid
Y.9	0.706	0.1986	Valid
Y.10	0.754	0.1986	Valid

Table 3 shows the validity assessment confirmed that every questionnaire item across perceived security (X_1), digital touchpoint quality (X_2), and customer experience (Y) surpassed the reference (r)-value of 0.1986. The observed correlations ranged from 0.727–0.838 for X_1, 0.657–0.822 for X_2, and 0.706–0.815 for Y. Because each calculated coefficient exceeded the required threshold, all items met the validity criterion and were retained for subsequent analyses without removing any statements.

4.3.2 Reliability Test

Reliability testing examines whether a research tool yields dependable results when used to collect data. An instrument is deemed trustworthy when its outcomes remain consistent rather than fluctuating unpredictably. Cronbach alpha is commonly applied for this assessment, and a coefficient exceeding 0.70 is generally accepted as evidence of adequate reliability (Hair, Black, Babin, & Anderson, 2019).

Table 4. Reliability test

Variables	Cronbach Alpha	Conclusion
Perceived Security	0.908	Reliable
Digital Touchpoint	0.899	Reliable
Customer Experience	0.915	Reliable

Table 4 shows the reliability assessment yielded alpha coefficients of 0.908 for perceived security, 0.899 for digital touchpoint, and 0.915 for customer experience. Since every figure surpassed the 0.70 benchmark, all three constructs fulfilled the reliability requirements. These results reflect strong item-to-item coherence and indicate that the instrument can generate dependable and repeatable measurements. Consequently, all statements were retained for use in the ensuing analytical stages.

4.4 Classical Assumption Test Results

4.4.1 Normality Test

Normality assessment was performed to ascertain whether the observations or model residuals followed a normal distribution, a prerequisite relevant to parametric procedures such as linear regression, because it influences the soundness of hypothesis evaluation. One available approach is the K–S procedure, which gauges the observed distribution against its theoretical normal distribution. An Asymp. Sig. A *p*-value exceeding 0.05 indicates that normality is not rejected, whereas a value below 0.05 suggests that the distribution departs from normality (Sonjaya, Aliyya, Naufal, & Nursalman, 2025).

Table 5. Normality test

Significance	Conclusion
0.200	Normal

Table 5 reports a normality-test significance figure of 0.200, which is above the predetermined cutoff of 0.05. This outcome indicates that the data in this study satisfy the normality criterion and may therefore be regarded as normally distributed. Therefore, the normality assumption is considered satisfied, supporting the application of multiple linear regression analysis.

4.4.2 Multicollinearity Test

Multicollinearity assessment examines whether explanatory variables within a regression equation overlap too heavily in their relationships. Excessive interdependence can make coefficient estimates erratic and weaken the model's precision. This condition is commonly evaluated using the VIF and tolerance statistics. A VIF below 10, alongside a tolerance figure exceeding 0.10, indicates that problematic multicollinearity has not been detected (Amelia & Amadi, 2023).

Table 6. Multicollinearity test

Variables	Tolerance	VIF	Conclusion
X_1	0.972	1.029	No multicollinearity
X_2	0.972	1.029	No multicollinearity

Table 6 shows identical figures for both predictors: perceived security (X_1) and digital touchpoint (X_2), each recorded a tolerance of 0.972 and a VIF of 1.029. Since both tolerance scores exceeded 0.10 and both VIF figures remained under 10, neither variable breached the prescribed limits. Thus, no multicollinearity was identified between the independent variables, supporting their joint use in the regression model.

4.5 Multiple Linear Regression Analysis Results

Multiple regression analysis was employed to examine how two or more predictor variables relate to a single outcome and estimate their respective contributions. The resulting coefficients reveal both the direction and strength of each association, whereby a positive coefficient denotes movement in the same direction. This technique is widely applied in social and commercial investigations because it permits the combined influence of predictors and the individual contribution of each to be assessed (Hair et al., 2019).

Table 7. Multiple linear regression analysis

Variables	B	Calculated *t*-value	Significance
Constant	7.287	–	–
X_1 (Perceived Security)	0.638	5.857	0.000
X_2 (Digital Touchpoint)	0.273	2.976	0.004

Table 7 shows the t-test findings revealed that perceived security (X_1) recorded a coefficient of 0.638 with a significance level of 0.000, demonstrating a positive and statistically meaningful contribution to customer experience. In other words, stronger customer confidence in security

corresponds to better overall experience. Digital touchpoint quality (X_2) also showed a positive coefficient of 0.273 and a significance value of 0.004, confirming a significant association with customer experience. Since both significance figures fall below 0.05, both predictors exhibit positive and statistically significant effects on the outcome.

4.6 Hypothesis Testing Results

4.6.1 t-Test (Partial Test)

The partial t-test was applied in multiple regression to scrutinize the separate contribution of each predictor to the outcome variable. It determines whether an individual regression coefficient provides sufficient statistical evidence to establish a meaningful effect. This decision is made by comparing the observed t-statistic with its critical benchmark or by examining the p-value against the conventional 0.05 cutoff value. A predictor is deemed statistically significant when its calculated *t*-value exceeds the critical value, or its p-value falls below 0.05 (Iba & Wardhana, 2024).

Table 8. t-test (Partial test)

Variables	Calculated *t*-value	Critical *t*-value	Significance	Result
X_1 (Perceived Security)	5.857	1.98552	0.000	Significant
X_2 (Digital Touchpoint)	2.976	1.98552	0.004	Significant

Table 8 showed that perceived security (X_1) yielded a t-statistic of 5.857, exceeding the critical threshold of 1.98552, with a *p*-value of 0.000, below the 0.05 limit. This supports a positive, statistically significant effect on customer experience, therefore, the corresponding hypothesis is supported. Digital touchpoint (X_2) also met the significance criteria, recording a *t*-statistic of 2.976, above 1.98552, and a *p*-value of 0.004. Its effect on customer experience was likewise positive and significant, supporting the second hypothesis. Overall, both predictors demonstrated statistically significant positive effects on customer experience.

4.6.2 F-Test (Simultaneous Test)

The F-test evaluates whether the predictor variables, when considered as a group, exert a statistically meaningful influence on the outcome in a multiple regression model. Its verdict is established by checking the computed F-statistic against the critical benchmark or by reviewing the significance probability. A joint effect is deemed significant when the *p*-value falls below 0.05, or the observed F-statistic surpasses its critical counterpart (Ghozali, 2023).

Table 9. F-test (Simultaneous test)

Calculated F-value	Critical F-value	Significance
19.188	3.09	0.000

Table 9 shows the joint F-test produced a calculated statistic of 19.188, exceeding the critical value of 3.09, while its significance level was 0.000, below the 0.05 threshold. These findings confirm that perceived security and digital touchpoints collectively exert a statistically significant influence on customer experience, thereby supporting the proposed hypothesis. In practical terms, strengthening customers' sense of security and the quality of digital interactions can contribute meaningfully to a better customer experience.

4.6.3 Coefficient of Determination (R^2)

R^2 indicates the extent to which the variation in an outcome variable can be accounted for by the predictors included in a regression model. Its magnitude lies between 0 and 1, with values closer to 1 reflecting a stronger explanatory capacity.

Table 10. Coefficient of determination (R^2)

Adjusted R Square	Interpretation
0.273	27.3%

Table 10 shows an adjusted R^2 of 0.273 signifies that perceived security and digital touchpoint collectively account for 27.3% of the fluctuations in customer experience, whereas the other 72.7% remains attributable to factors not incorporated into the model. Under the study's adopted assessment guidelines, this explanatory contribution was classified as low. An adjusted R^2 of 0.273 signifies that perceived security and digital touchpoint collectively account for 27.3% of the fluctuations in customer experience, whereas the other 72.7% remains attributable to factors not incorporated into the model. Under the study's adopted assessment guidelines, this explanatory contribution was classified as low.

4.7 Discussion

4.7.1 The Effect of Perceived Security on the Customer Experience of BRImo Mobile Banking Users among FEBI UINSU Students

The analysis confirms that perceived security bears a positive and statistically significant relationship with customer experience, supported by a *t*-statistic of 5.857 exceeding 1.98552 and a significance level of 0.000, below 0.05. Its coefficient of 0.638 further suggests that stronger security perceptions accompany a more favorable experience when using BRImo. This underscores the importance of users' sense of protection in digital banking, where monetary dealings and confidential personal information are involved.

In mobile banking, perceived security is not limited to the technical security of the system, it also includes users' confidence that the application can protect their personal data, account information, and transactions. When users feel protected from threats such as data theft, account misuse, and digital fraud, their trust in the service increases. This trust, in turn, creates a sense of comfort and satisfaction when using the application, resulting in a better customer experience. Therefore, security is one of the fundamental pillars of successful modern mobile banking services.

The present results align with those of Rudiansyah, Mustam, and Swastika, who investigated university students using BRImo in Kendari. Their findings revealed that perceived security significantly strengthened user satisfaction positively. In other words, when users feel better protected, they tend to feel more satisfied and have a more favorable experience overall. This suggests that security plays a pivotal role in shaping mobile banking perceptions, particularly through its connection to trust and transaction comfort (Rudiansyah, Mustam, & Swastika, 2025).

4.7.2 The Effect of Digital Touchpoint on the Customer Experience of BRImo Mobile Banking Users among FEBI UINSU Students

The results show that digital touchpoints have a positive and significant effect on customer experience, as indicated by the calculated *t*-value of 2.976 > the critical *t*-value of 1.98552 and a significance value of 0.004 < 0.05. The regression coefficient of 0.273 indicates that improvements in digital touchpoint quality enhance the BRImo user experience. This demonstrates that the quality of digital interactions users experience while using the application plays an important role in shaping their experience with digital banking services.

Digital touchpoints include all points of interaction between users and an application, such as interface design, ease of navigation, system speed, application stability, accessibility of features, and clarity of the information displayed. Users tend to feel satisfied when an application provides a fast, easy-to-understand experience with minimal technical disruptions. Conversely, if an application frequently encounters errors, responds slowly, or has a confusing interface, the user experience may decline even when the available features are fairly comprehensive. Therefore, digital touchpoint quality is an important factor in creating an optimal customer experience.

These findings are supported by the research of Jannah and Siregar, who found that the appearance of a mobile banking application significantly affects customer satisfaction. Their study explained that an attractive, user-friendly, and responsive application design can improve users' comfort when conducting transactions. The better the interface and digital interaction quality provided

by a mobile banking application, the higher the level of customer satisfaction and the more positive the experience (Jannah & Siregar, 2024).

4.8 The Effect of Perceived Security and Digital Touchpoint on the Customer Experience of BRImo Mobile Banking Users among FEBI UINSU Students

The simultaneous test results indicate that perceived security and digital touchpoints jointly have a positive and significant effect on customer experience, as shown by the calculated F-value of 19.188 > the critical F-value of 3.09 and a significance level of 0.000 < 0.05. This finding indicates that the BRImo user experience is shaped by a combination of factors, particularly users' perceived security and the quality of digital interactions provided by the application. These two factors complement each other in creating a comfortable, secure, and satisfying user experience.

Mobile banking users generally evaluate not only service security but also the ease of using the application. An application that is secure but difficult to use may reduce user satisfaction, while an application that is easy to use but has low security may also create doubt and distrust. Therefore, digital banking service providers need to maintain a balance between system security and digital service quality to create an optimal customer experience. This finding is also supported by the Adjusted R-square value of 27.3%, indicating that the two variables make a measurable contribution to explaining the customer experience of BRImo users.

These findings are consistent with research by Hasibuan in the Journal of Islamic Economics. This study found that students using BSI mobile banking considered security, ease of use, service speed, and transaction convenience to be important factors in shaping positive perceptions of mobile banking services. The results indicate that user experience is shaped by a combination of service dimensions that operate together. Therefore, the better the security and digital service quality provided, the more positive the resulting user experience (Hasibuan et al., 2023).

5. CONCLUSIONS

5.1 Conclusion

This study finds that perceived security and digital touchpoint quality are both positively and significantly associated with the customer experience of BRImo users among FEBI UINSU students. Perceived security has a larger reported regression coefficient (B = 0.638, $t = 5.857$, $p < 0.001$), while digital touchpoint quality also contributes significantly (B = 0.273, $t = 2.976$, $p = 0.004$). The simultaneous test confirms that the two predictors jointly relate significantly to customer experience (F = 19.188, $p < 0.001$). The model's Adjusted R^2 is 0.273, indicating that 27.3% of the variation in customer experience is explained by the included predictors, while 72.7% remains outside the model.

The findings highlight the relevance of users' confidence in the protection of data and transactions, as well as the usability and quality of their digital interactions. Concerns expressed by users should not be taken as proof that BRImo is technically insecure because the study measures perceived security rather than system-level security. The results may also be interpreted in light of the Islamic ethical principles of amanah and hifz al-mal, which emphasize trustworthiness and protection of wealth, without implying that BRImo is an Islamic banking product.

5.2 Research Limitations

This study has several limitations. First, the sample consisted of only 98 FEBI UINSU students who used BRImo, meaning that the findings may not be generalizable to all BRImo users in Indonesia. Second, the questionnaire data reflected respondents' subjective perceptions rather than the results of a direct assessment of the application's security. Third, this study only examined perceived security and digital touchpoint quality in explaining customer experience. Therefore, other factors outside the research model may also influence user experience and warrant further investigation.

5.3 Suggestions and Directions for Future Research

The banking sector, particularly Bank BRI, is encouraged to continuously enhance its application security systems to maintain user trust through strengthened data protection and multilayer authentication. In addition, improving Digital Touchpoint quality should be a priority, particularly in

terms of UI/UX design, application speed, and ease of navigation, to optimize the overall user experience. Future researchers are encouraged to incorporate other variables, such as trust, satisfaction, and loyalty, to expand the research model and use more diverse research objects to obtain more comprehensive results.

ACKNOWLEDGEMENT

The authors would like to express their gratitude to the State Islamic University of North Sumatra, particularly the Faculty of Islamic Economics and Business for the support provided in conducting this research. The authors also extend their appreciation to all respondents, namely, students of the Faculty of Islamic Economics and Business at UINSU, who took the time to complete the questionnaire and provide the information required for this study. Sincere thanks are also extended to the academic supervisors and all other parties who provided guidance, support, and assistance, which enabled this research to be completed successfully.

AUTHOR CONTRIBUTIONS

RA contributed to the conceptualization, research design, data collection, statistical analysis, and preparation of the original manuscript. N contributed to research supervision, methodological guidance, validation, and critical review of the manuscript. MIH contributed to the development of the theoretical framework, interpretation of research findings, and manuscript review and editing. All authors reviewed and approved the final version of the manuscript for publication.

REFERENCES

Almaiah, M. A., Al-Otaibi, S., Shishakly, R., Hassan, L., Lutfi, A., Alrawad, M., Qatawneh, M., & Alghanam, O. A. (2023). Investigating the role of perceived risk, perceived security and perceived trust on smart m-banking application using SEM. *Sustainability (Switzerland)*, *15*(13), 1-17. https://doi.org/10.3390/su15139908

Amelia, S., & Amadi Putra, A. (2023). Regresi komponen utama dalam mengatasi multikolinearitas pada faktor yang mempengaruhi pendapatan asli daerah di Sumatera Barat. *Jurnal Pendidikan Tambusai*, *7*(2), 10906-10914. https://doi.org/10.31004/jptam.v7i2.8096

Aningsy, A. F., Astuty, S., Hastuti, D. R. D., Irwandi, & Rajab, A. (2025). Faktor sosial ekonomi yang mempengaruhi minat penggunanna mobile bangking BRIMO. *Jurnal Ekonomi Bisnis Dan Akuntansi*, *5*(1), 148-161. https://doi.org/10.55606/jebaku.v5i1.5025

Apaua, R., & Lallie, H. S. (2022). Measuring user perceived security of mobile banking applications. *1–36*. https://doi.org/10.48550/arXiv.2201.03052

Arkadan, F., Macdonald, E. K., & Wilson, H. N. (2024). Customer experience orientation: Conceptual model, propositions, and research directions. *Journal of the Academy of Marketing Science*, *52*(6), 1560-1584. https://doi.org/10.1007/s11747-024-01031-y

Astika, S., Harun, L. B., Arif, N., Aida, N., Wiyani, L., Herlina, Harianti, Ilham, Supardi, R. P., Anggini, C. P., & Sari, A. P. (2025). Analysis of customer perceptions of security and ease of transactions using the BRImo application at the BRI Nunukan Branch. *International Journal of Economics and Management Research*, *5*(1), 284-288.

Cheng, L.-C., & Lian, J.-W. (2023). Using mixed method to understand customer experience with digital banking services: Comparisons between South Korea and Philippines. *Journal of Global Information Management*, *31*(1), 1357-1376. https://doi.org/10.4018/JGIM.333855

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319-340. https://doi.org/10.2307/249008

Fatiha, R. R., Saharuddin, S., & Makkasau, S. (2024). Influence of service quality and customer satisfaction on use loyalty BRI mobile banking. *Journal of Multidisciplinary Academic and Practice Studies*, *2*(3), 335-347. https://doi.org/10.35912/jomaps.v2i3.2257

Fauzi, I. M., Nurfatwa, F., Sandiana, D. S. S. R., Anjani, R. D., Fawwaz, M. N., Latifa, M., & Wijaya, T. (2026). Tinjauan maqashid syariah terhadap perlindungan data pribadi nasabah pada digital payment. *SIL'AH: Jurnal Ekonomi Syariah*, *3*(1). https://doi.org/10.64994/silah.v3i1.78

Fauzi, M. R., Atika, & Yanti, N. (2024). Analisis tingkat security awareness dalam password behavior mahasiswa (studi kasus mahasiswa FEBI UINSU Medan). *JPEK (Jurnal Pendidikan Ekonomi Dan Kewirausahaan)*, *8*(3), 1483-1498. https://doi.org/10.29408/jpek.v8i3.29304

Fitri, N. A., Alayyannur, P. A., Tualeka, A. R., & Zuhri, M. N. (2026). Uji validitas dan reliabilitas kuesioner The Computer Vision Symptom Scale (CVSS17) translasi Bahasa Indonesia. *Jurnal Ilmu Kesehatan Masyarakat*, *15*(2), 181-188.

Gahler, M., Klein, J. F., & Paul, M. (2023). Customer experience: Conceptualization, measurement, and application in omnichannel environments. *Journal of Service Research*, *26*(2), 191-211. https://doi.org/10.1177/10946705221126590

Ghozali, I. (2023). *Aplikasi analisis multivariate dengan program IBM SPSS 26*. Badan Penerbit Universitas Diponegoro.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis eighth edition*. Cengage Learning EMEA.

Hasibuan, K. A. P., Nst, S. A., Lestari, D., & Harahap, M. I. (2023). Persepsi mahasiswa jurusan perbankan syari'ah UIN Sumatera Utara terhadap layanan aplikasi mobile banking BSI. *Jurnal Program Studi Ekonomi Syariah STAIN Madina*, *4*(1), 205-216. https://doi.org/10.1201/b18114-28

Iba, Z., & Wardhana, A. (2024). *Analisis regresi dan analisis jalur untuk riset bisnis menggunakan SPSS 29 & Smart-PLS 4.0* (M. Pradana (ed.), 1st ed., Vol. 2). CV. Eureka Media Aksara.

Ichsan, M., Fitriyanti, F., Setiorini, K. R., & Al-Qudah, A. M. (2024). Digitalization of Islamic banking in Indonesia: Justification and compliance to Sharia principles. *Jurnal Media Hukum*, *31*(2). https://doi.org/10.18196/jmh.v31i2.22485

Jannah, M. R., & Siregar, S. L. (2024). Pengaruh kemudahan sistem, keamanan sistem dan tampilan aplikasi mobile banking terhadap kepuasan nasabah dengan kualitas layanan sebagai variabel intervening. *Jurnal Ilmiah Mahasiswa Perbankan Syariah*, *4*(1), 241-264. https://doi.org/10.53008/kalbisocio.v11i1.3302

Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert ccale: Explored and explained. *British Journal of Applied Science & Technology*, *7*(4), 396-403. https://doi.org/10.9734/bjast/2015/14975

Kasir, Z., Adita, M. D., & Randi, M. J. (2026). Digital social capital and agripreneurial capability on young shallot farmers' interest amid systemic uncertainty. *Jurnal Relevansi: Ekonomi, Manajemen Dan Bisnis*, *10*(5), 1193-1207. https://doi.org/10.61401/relevansi.v10i5.661

Kim, H., & So, K. K. F. (2024). Customer touchpoints: Conceptualization, index development, and validation. *Tourism Management*, *103*, 104881. https://doi.org/10.1016/j.tourman.2023.104881

Lubis, A. P., Ramadhani, S., & Inayah, N. (2023). Pengaruh kemudahan, keamanan, dan kenyamanan mobile banking syariah terhadap customer intention (minat nasabah) dengan lifestyle sebagai variabel moderating. *Surplus: Jurnal Ekonomi Dan Bisnis*, *2*(1), 14-30. https://doi.org/10.71456/sur.v2i1.637

Murniati, M., Nia, M., Rika, A. R., Syata, W. M., & Basri, A. M. (2026). Strategic fintech disclosure and financial management performance in digital banking. *Studi Akuntansi, Keuangan, Dan Manajemen*, *6*(2), 123-141. https://doi.org/10.35912/sakman.v6.n2.p123-141.2026

Noventa, O. C. (2024). Transformasi digital perbankan: Implikasi kualitas layanan terhadap loyalitas pelanggan. *Reviu Akuntansi, Manajemen, dan Bisnis*, *4*(2), 239-249. https://doi.org/10.35912/rambis.v4i2.4138

Putri, M. H., Sanjaya, M. R., Kurniawan, D., & Indah, D. R. (2025). Penerapan metode usability untuk menentukan tingkat kepuasan pada sistem mobile m-banking BRIMO. *The Indonesian Journal of Computer Science*, *14*(1), 1072-1083.

Rudiansyah, A., Mustam, & Swastika, Y. (2025). Pengaruh kualitas keamanan, fleksibilitas, dan user interface terhadap kepuasan nasabah dalam menggunakan layanan mobile banking: Studi pada mahasiswa pengguna brimo di Kota Kendari. *Journal of Economic, Business and Accounting*, *8*(4), 2612-2621. https://doi.org/10.31539/xb694690

Sekaran, U., & Bougie, R. (2013). Research methods for business: A skill-building approach. *Leadership & Organization Development Journal*, *34*(7), 700-701. https://doi.org/10.1108/lodj-06-2013-0079

Siregar, I. S., Nasution, Y. S. J., & Inayah, N. (2023). Pengaruh e-trust dan e-service quality terhadap e-loyalty menggunakan layanan mobile banking Bank Syariah Indonesia dengan kepuasan nasabah sebagai variabel intervening. *Jurnal Nuansa : Publikasi Ilmu Manajemen Dan Ekonomi Syariah*, *1*(4), 221-233. https://doi.org/10.61132/nuansa.v1i4.399

Sonjaya, R. P., Aliyya, F. R., Naufal, S., & Nursalman, M. (2025). Pengujian prasyarat analisis data nilai kelas: Uji normalitas dan uji homogenitas. *Jurnal Pendidikan Tambusai*, *9*(1), 1627-1639.

Susi, & Rayyani, W. O. (2026). The effect of green finance and green accounting on manufacturing firm profitability in Makassar. *Riset Akuntansi Dan Bisnis Indonesia*, *2*(3), 167-181. https://doi.org/10.61401/rabi.v2i3.557

Weippert, M. (2024). The scope and intensity of personalised omnichannel customer journeys: A conceptualisation integrating experts' and consumers' perspectives. *Journal of Marketing Management*, *40*(11), 877–909. https://doi.org/10.1080/0267257X.2024.2388088

Wijatmoko, N. A. P., Mirati, R. E., & Purwaningrum, E. (2025). Pengaruh persepsi kegunaan, kemudahan, dan kualitas layanan pada mobile banking BRImo terhadap kepuasan nasabah. *Indonesian Journal of Economy, Business, Entrepreneuship and Finance*, *5*(1), 48-60. https://doi.org/10.53067/ijebef.v5i1.222

Zha, D., Marvi, R., & Foroudi, P. (2023). Synthesizing the customer experience concept: A multimodularity approach. *Journal of Business Research*, *167*(14), 1-26. https://doi.org/10.1016/j.jbusres.2023.114185