



Security, Trust, and Transaction Convenience in Mobile Banking: A Moderated Mediation Model of Usage Decision and Satisfaction

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ABSTRACT: This study examines the structural relationships among security, trust, transaction convenience, usage decision, digital literacy, and user satisfaction in mobile banking. Drawing on Technology Acceptance Theory, trust theory in electronic commerce, and Expectation Confirmation Theory, the study develops a moderated mediation model to explain how and under what conditions mobile banking satisfaction is formed. Data were collected from 278 active users of Livin' by Mandiri in Indonesia and analyzed using Structural Equation Modeling with Partial Least Squares. The results indicate that security strongly influences trust and directly enhances satisfaction, while transaction convenience and trust significantly affect usage decision. Usage decision is the strongest predictor of satisfaction and mediates the effects of trust and transaction convenience. Digital literacy strengthens the relationship between transaction convenience and usage decision, highlighting user capability as an important boundary condition. The findings provide theoretical advancement and practical insights for improving digital banking strategies in emerging markets.

Keywords: mobile banking, security, trust, transaction convenience, digital literacy

INTRODUCTION

The rapid expansion of digital technologies has significantly transformed the banking industry, accelerating the transition from branch-based services to mobile banking platforms. Mobile banking has become a strategic channel for improving accessibility, efficiency, and financial inclusion, particularly in emerging economies (Ahmad, 2025; Siano et al., 2020). The Technology Acceptance Model developed by Tao et al. (2022) and extended by Ibrahim & Shiring (2022) emphasizes that perceived ease of use and perceived usefulness are central determinants of technology adoption. However, digital financial services involve higher perceived risk compared to other digital platforms because they manage sensitive financial data and monetary transactions. Prior studies have shown that perceived security plays a critical role in shaping user attitudes and behavioral intentions in mobile banking contexts (Almaiah et al., 2023; Sarwar et al., 2024). Therefore, beyond usability considerations, security perceptions may function as a fundamental determinant of trust and continued usage behavior.

Despite extensive research on mobile banking adoption, several conceptual gaps remain. First, many studies examine security and ease of use as direct predictors of intention or satisfaction without clarifying the psychological mechanism linking these factors to post-adoption outcomes (Bergmann et al., 2023; Mihelić et al., 2025). Second, trust is often treated as an independent predictor rather than a mediating construct through which security perceptions influence decision making (Szatmary, 2025; Wang et al., 2023). Third, contextual boundary conditions such as digital literacy have received limited attention, particularly in



semi-urban regions of developing countries where digital capability varies substantially. Empirical findings regarding the impact of ease of use on satisfaction are also inconsistent, suggesting that additional explanatory mechanisms are required (Mondego & Gide, 2024; Nurmalasari et al., 2025). These limitations indicate the need for a more integrated structural framework.

To address these gaps, this study develops and tests a moderated mediation model integrating security, trust, transaction convenience, usage decision, and user satisfaction in the context of mobile banking in Indonesia. Drawing on Technology Acceptance logic Guo (2022), trust theory in electronic commerce AlSokkar et al. (2024), and Expectation Confirmation Theory Nguyen et al. (2025), security is conceptualized as a trust-building mechanism, trust is positioned as a mediator influencing usage decision, and digital literacy is introduced as a moderator strengthening the effect of transaction convenience on decision making. By combining these theoretical perspectives, the model explains not only whether security and convenience influence satisfaction but also how and under what conditions these effects occur.

The novelty of this study lies in three contributions. First, it advances digital banking literature by empirically validating trust as a central mediating mechanism linking perceived security to behavioral outcomes, extending prior direct-effect models (Abdul Sathar et al., 2022; Joshi & Chawla, 2024). Second, it introduces digital literacy as a contextual boundary condition, contributing to emerging research that highlights capability heterogeneity in technology adoption (Aranguri et al., 2025). Third, it provides empirical evidence from a semi-urban Indonesian setting, enriching fintech research in developing economies where mobile banking diffusion is accelerating but structural and educational disparities persist. The purpose of this study is therefore to explain the structural relationships among security, trust, transaction convenience, usage decision, and satisfaction, while offering theoretical refinement and practical implications for digital banking strategy in emerging market contexts.

LITERATURE REVIEWS

Theoretical Foundations

This study is grounded in three complementary theoretical perspectives, namely the Technology Acceptance Model, trust theory in electronic services, and Expectation Confirmation Theory. Together, these frameworks provide an integrated foundation for explaining how security and transaction convenience influence usage decision and satisfaction in mobile banking contexts. The Technology Acceptance Model introduced by Guo (2022) posits that perceived ease of use and perceived usefulness are primary determinants of technology adoption. Ease of use reflects the degree to which individuals believe that using a system requires minimal effort, which subsequently enhances behavioral intention and actual usage. Extensions of this framework, including the Unified Theory of Acceptance and Use of Technology, further emphasize effort expectancy as a key driver of technology acceptance (Md Zin et al., 2024). In mobile banking environments, transaction convenience represents an operationalization of perceived ease of use, as intuitive interface design, minimal transaction steps, and clear navigation reduce cognitive effort and increase adoption likelihood.

Beyond usability, digital financial services involve substantial risk perceptions due to privacy concerns, cybersecurity threats, and potential financial loss. Therefore, trust theory in electronic commerce becomes central to understanding user behavior. Trust is defined as the willingness of a party to be vulnerable to the actions of another based on the expectation of competence, integrity, and reality (Colquitt & Baer, 2023; Zhou, 2023). In online financial environments, perceived security functions as a foundational antecedent of trust formation. When users believe that a mobile banking application provides robust data protection, encryption mechanisms, and reliable authentication systems, they are more likely to develop trust in the platform. Empirical studies consistently demonstrate that trust mediates the relationship between perceived security and technology adoption outcomes (Almaiah et al., 2023; Zhang et al., 2023). Accordingly, security in this study is conceptualized not merely as a technical attribute but as a trust generating mechanism that influences usage decision.

While adoption decisions are important, sustained satisfaction requires confirmation of expectations after usage. Expectation Confirmation Theory developed by Sinha & Singh (2022) explains post adoption behavior by arguing that satisfaction results from the comparison between prior expectations and perceived performance. When performance exceeds expectations, users experience positive confirmation, leading to satisfaction and continued usage intention. In mobile banking contexts, users evaluate whether security features, transaction speed, and convenience meet their anticipated standards. Usage decision reflects the

behavioral commitment to adopt and utilize the application, whereas satisfaction represents the evaluative outcome of that decision. Integrating this perspective allows the model to explain not only initial decision making but also post usage evaluation.

Finally, the model incorporates digital literacy as a contextual boundary condition. Digital literacy refers to the capability to access, understand, and effectively utilize digital technologies (Reddy et al., 2023). Users with higher digital literacy are better able to evaluate interface design, recognize security features, and navigate complex applications. Consequently, digital literacy may strengthen the positive influence of transaction convenience on usage decision, as technologically capable users are more responsive to improvements in system usability. By integrating technology acceptance logic, trust formation mechanisms, and post adoption satisfaction theory within a moderated framework, this study provides a comprehensive theoretical foundation for understanding mobile banking behavior in emerging market contexts.

Security and Trust

Trust theory in electronic commerce provides a foundational explanation for understanding user behavior in digital financial environments. Trust is defined as the willingness of a party to accept vulnerability based on positive expectations regarding the competence, integrity, and reliability of another party (Gao & Yan, 2022). In online contexts where direct interpersonal interaction is absent, institutional mechanisms such as technological safeguards and system reliability become critical substitutes for interpersonal assurance. Particularly in mobile banking, where transactions involve sensitive financial information, users must rely on technological infrastructure to ensure confidentiality, integrity, and availability of data. Therefore, perceived security emerges as a fundamental antecedent of trust formation.

Perceived security refers to users' beliefs that a system provides adequate protection against unauthorized access, fraud, identity theft, and data breaches. Prior research in electronic commerce and digital banking consistently demonstrates that security perceptions significantly shape trust in online platforms (Almaiah et al., 2023; Choudhuri et al., 2024). Security mechanisms such as data encryption, multi factor authentication, biometric verification, and real time fraud monitoring reduce uncertainty and perceived vulnerability. According to risk reduction logic, when individuals perceive lower levels of uncertainty and potential loss, they become more willing to engage in transactions and develop confidence in the service provider. In financial technology settings, this relationship is particularly salient because monetary transactions inherently involve higher perceived risk compared to other digital services.

Moreover, trust functions as a psychological assurance mechanism that bridges the gap between technological infrastructure and user confidence. When users believe that their financial information and transaction activities are adequately protected, they interpret the platform as reliable and trustworthy. Empirical evidence from mobile banking studies confirms that perceived security significantly enhances trust, which subsequently influences behavioral outcomes such as adoption and continuance intention (Almaiah et al., 2023; Habib et al., 2025). Accordingly, security in mobile banking should not be viewed solely as a technical feature but as a strategic driver of trust formation.

Based on the theoretical reasoning and prior empirical findings, the following hypothesis is proposed:

H1: Security positively influences trust in mobile banking.

Trust and Usage Decision

Trust plays a central role in shaping behavioral decisions in digital financial environments. Within electronic commerce theory, trust is conceptualized as a mechanism that reduces uncertainty and encourages users to engage in transactions despite perceived vulnerability (Gao & Yan, 2022). In mobile banking contexts, users cannot directly observe the internal processes of the system, nor can they fully verify how their financial information is managed. Therefore, trust becomes a critical determinant of whether individuals decide to adopt and use a mobile banking application. Without sufficient trust, even technologically advanced and convenient systems may fail to gain user commitment.

From a behavioral perspective, trust influences decision making by lowering perceived risk and increasing confidence in expected outcomes. According to Pang & Liu (2023), trust reduces cognitive concern related to potential financial loss and enhances perceived reliability of the service provider. In financial services, where transactions involve personal data and monetary assets, users are particularly sensitive to potential misuse or system failure. When users develop trust in a mobile banking platform, they

are more willing to proceed with transactions and rely on the system for recurring financial activities. Empirical evidence supports this relationship, indicating that trust significantly predicts intention to use and continued adoption of mobile banking services (Jarad, 2022; Pang & Liu, 2023).

Moreover, trust serves as a psychological bridge between technological infrastructure and behavioral action. While security mechanisms provide objective safeguards, it is users' perception of trust that ultimately translates these safeguards into actual usage decisions. In this sense, trust transforms technical assurance into behavioral commitment. Particularly in emerging market contexts where digital skepticism may remain high, trust becomes a decisive factor influencing whether individuals fully embrace mobile banking applications.

Based on this theoretical reasoning, the following hypothesis is proposed:

H2: Trust positively influences usage decision.

Transaction Convenience and Usage Decision

Transaction convenience represents a central construct within technology acceptance research, particularly in digital service environments where usability determines user engagement. The Technology Acceptance Model introduced by Guo (2022) identifies perceived ease of use as a primary determinant of behavioral intention. Ease of use refers to the degree to which individuals believe that using a system requires minimal effort. This concept is further reinforced by the Unified Theory of Acceptance and Use of Technology, which conceptualizes effort expectancy as a key predictor of technology adoption (Allowayr, 2021). In mobile banking contexts, transaction convenience reflects users' perceptions that the application is intuitive, efficient, and simple to navigate.

From a cognitive perspective, systems that reduce mental effort and procedural complexity increase the likelihood of adoption. When users can complete financial transactions quickly, access features without confusion, and rely on a responsive interface, they experience lower cognitive burden. Reduced complexity enhances perceived control and confidence, which in turn strengthens the decision to use the platform. Empirical studies consistently demonstrate that perceived ease of use significantly influences behavioral intention in mobile banking environments (Alkindi et al., 2022; Saprikis et al., 2022). Particularly in emerging markets, where digital capability levels vary, intuitive design and streamlined transaction processes become critical drivers of usage decisions.

Furthermore, transaction convenience contributes not only to functional efficiency but also to perceived value. Users evaluate digital platforms based on time savings, accessibility, and simplicity. When a mobile banking application enables seamless transfers, bill payments, and account management within minimal steps, it increases users' perception that the system enhances daily financial management. Consequently, convenience becomes a strategic factor influencing adoption decisions.

Based on this theoretical reasoning, the following hypothesis is proposed:

H3: Transaction convenience positively influences usage decision.

Usage Decision and User Satisfaction

Usage decision reflects users' behavioral commitment to adopt and utilize a mobile banking application based on prior evaluation of its attributes. Expectation Confirmation Theory provides a useful framework for understanding how this decision translates into satisfaction (Bhattacharjee, 2001). According to this theory, satisfaction arises from the comparison between users' initial expectations and the perceived performance of the system. When individuals decide to use a service, they form expectations regarding its functionality, reliability, and benefits. If actual performance meets or exceeds those expectations, positive confirmation occurs, resulting in satisfaction.

The decision to adopt a mobile banking application is therefore not merely a transactional act but also a psychological investment. Once users commit to using the system, they actively evaluate whether the application delivers the anticipated benefits. Prior research indicates that behavioral intention and actual usage significantly influence satisfaction in digital service contexts (AlSokkar et al., 2024; Ramasamy et al., 2024). When users perceive that their decision was appropriate and beneficial, they experience higher levels of satisfaction. Conversely, if the application fails to perform as expected, dissatisfaction may emerge regardless of initial adoption.

In financial technology settings, satisfaction is particularly important because it influences retention, loyalty, and continued usage. A positive usage decision followed by favorable experiences strengthens emotional attachment and reinforces long-term engagement with the platform. Therefore, usage decision functions as a critical antecedent of satisfaction in mobile banking environments.

Based on this theoretical reasoning, the following hypothesis is proposed:

H4: Usage decision positively influences user satisfaction.

Security and User Satisfaction

In addition to influencing trust and usage decision, perceived security may also exert a direct impact on user satisfaction in mobile banking contexts. Expectation Confirmation Theory suggests that satisfaction emerges when perceived system performance meets or exceeds user expectations (AlSokkar et al., 2024). In digital financial services, security constitutes a fundamental expectation. Users anticipate that their personal data, account information, and financial transactions will be adequately protected against cyber threats and unauthorized access. When mobile banking platforms demonstrate reliable protection mechanisms, users are likely to experience positive confirmation, resulting in higher satisfaction.

From a psychological perspective, security contributes not only to cognitive assurance but also to emotional comfort. Financial transactions inherently involve vulnerability, as users entrust their monetary assets and sensitive information to a digital system. When security features such as encryption protocols, biometric authentication, and fraud monitoring systems function effectively, they reduce anxiety and perceived risk. Prior research indicates that perceived security significantly enhances customer satisfaction in online banking and electronic commerce environments (Abdul Sathar et al., 2022; Mwiya et al., 2022). Even when usability is satisfactory, weak security perceptions may undermine overall satisfaction due to heightened fear of potential loss.

Furthermore, security may operate independently of usage decision in shaping satisfaction. While decision reflects behavioral commitment, satisfaction captures evaluative judgment regarding the service experience. Users who perceive high levels of system security may report satisfaction even if convenience factors vary, because financial safety represents a non-negotiable attribute in banking services. Therefore, security functions as both a trust-building antecedent and a direct contributor to evaluative outcomes.

Based on this theoretical reasoning, the following hypothesis is proposed:

H5: Security positively influences user satisfaction.

Mediation of Trust

The mediating role of trust can be explained through indirect effect logic within structural modeling frameworks. Mediation occurs when the influence of an independent variable on a dependent variable is transmitted through an intervening construct that explains the underlying psychological mechanism (Fangni, 2025). In digital financial environments, perceived security does not automatically translate into behavioral commitment. Instead, users cognitively interpret security features and transform these perceptions into trust, which then motivates their decision to engage with the system. Trust therefore functions as a psychological transmission mechanism linking technical attributes to behavioral outcomes.

From a theoretical standpoint, trust theory in electronic commerce emphasizes that institutional safeguards such as encryption protocols, authentication systems, and fraud prevention mechanisms enhance user confidence by reducing perceived vulnerability (Durodola, 2024; Sharma, 2024). However, it is not the objective existence of these mechanisms that directly drives usage decision, but rather users' subjective trust that the system is reliable and safe. Security strengthens perceptions of system integrity and competence, which fosters trust. Once trust is established, users become more willing to rely on the mobile banking platform for financial transactions. Empirical studies in mobile banking contexts have demonstrated that trust mediates the relationship between perceived security and behavioral intention (Abdul Sathar et al., 2022; Almaiah et al., 2023).

In financial technology services, this mediating process is particularly salient because monetary transactions involve heightened perceived risk. Users may recognize that security features exist, yet without trust, they may remain hesitant to adopt the service. Trust converts security perceptions into behavioral assurance, reducing uncertainty and encouraging commitment. Therefore, the effect of security on usage

decision is expected to operate primarily through trust as an intervening psychological mechanism rather than solely through a direct pathway.

Based on this theoretical reasoning, the following hypothesis is proposed:

H6: Trust mediates the relationship between security and usage decision.

Mediation of Usage Decision

The mediating role of usage decision is grounded in Expectation Confirmation Theory and behavioral pathway logic in post-adoption research. Expectation Confirmation Theory posits that satisfaction emerges after individuals evaluate system performance relative to their prior expectations (AlSokkar et al., 2024). Before this evaluative stage occurs, however, users must first engage with the system. In this sense, behavioral commitment precedes satisfaction. Usage decision represents this commitment, reflecting an intentional and actual choice to adopt and utilize the mobile banking application. Without such engagement, perceptions of trust or convenience remain cognitive assessments that may not fully translate into evaluative outcomes.

From a behavioral pathway perspective, trust and transaction convenience influence satisfaction not only directly but also indirectly through decision making. Trust reduces uncertainty and perceived vulnerability, increasing users' willingness to rely on the system. Transaction convenience lowers cognitive effort and enhances perceived efficiency, making adoption more attractive. However, satisfaction arises after users decide to use the application and experience its performance. Empirical research in digital service contexts demonstrates that behavioral intention and actual usage frequently mediate the relationship between cognitive perceptions and satisfaction outcomes (Lin, 2021; Tariq et al., 2024). Thus, usage decision serves as a critical mechanism connecting antecedent perceptions to post-usage evaluation.

In mobile banking environments, this mediation logic is particularly relevant because financial services involve both risk assessment and performance evaluation. Trust may create positive expectations regarding reliability, while convenience enhances perceptions of usability. Yet, only when users translate these perceptions into actual decision and usage do they experience confirmation or disconfirmation of expectations, which subsequently determines satisfaction. Therefore, usage decision functions as a behavioral conduit through which trust and transaction convenience shape satisfaction.

Based on this theoretical reasoning, the following hypotheses are proposed:

H7: Usage decision mediates the relationship between trust and user satisfaction.

H8: Usage decision mediates the relationship between transaction convenience and user satisfaction.

Moderating Role of Digital Literacy

The moderating role of digital literacy is grounded in digital capability theory and boundary condition logic within technology adoption research. Digital capability theory posits that individuals' ability to access, understand, and effectively utilize digital technologies shapes how they interpret and respond to technological features (Grego et al., 2025). Digital literacy encompasses not only technical skills but also cognitive competence in evaluating interface design, navigating digital systems, and recognizing functional efficiency. In mobile banking contexts, digital literacy determines how users process information related to system usability and transaction procedures. Therefore, the same level of transaction convenience may be interpreted differently depending on users' digital capability.

From a boundary condition perspective, technology adoption effects are rarely uniform across heterogeneous user groups. Emerging market contexts are characterized by significant variation in digital skills, education levels, and exposure to financial technology. Users with higher digital literacy are more capable of identifying subtle improvements in interface structure, transaction flow, and feature accessibility. They can quickly recognize efficiency gains and are more responsive to streamlined system design. In contrast, users with lower digital literacy may struggle to appreciate convenience enhancements or may experience difficulty navigating even simplified interfaces. Consequently, the strength of the relationship between transaction convenience and usage decision is likely contingent upon users' digital capability.

Empirical research in technology adoption has demonstrated that user competence and experience moderate the impact of perceived ease of use on behavioral intention (Alkindi et al., 2022; Cao et al., 2025). When individuals possess higher digital skills, the positive influence of system usability on adoption becomes

stronger because they can fully leverage interface features and operational efficiency. In mobile banking services, this implies that transaction convenience will more strongly translate into usage decision among digitally literate users who can evaluate and utilize the system effectively.

Based on this theoretical reasoning, the following hypothesis is proposed:

H19: Digital literacy strengthens the positive relationship between transaction convenience and usage decision.

METHODS

This study employed a quantitative research design using a cross sectional survey approach to examine the structural relationships among security, trust, transaction convenience, usage decision, user satisfaction, and digital literacy in the context of mobile banking. The objective was to test a moderated mediation model that explains both the mechanism and boundary conditions underlying mobile banking behavior. Structural Equation Modeling using Partial Least Squares was selected as the primary analytical technique because it is appropriate for complex models incorporating mediation and moderation effects, does not require strict normality assumptions, and is suitable for predictive oriented research (Hair et al., 2019). The study was conducted between January and March 2025 in Pasuruan Regency, Indonesia, a semi urban area characterized by heterogeneous levels of digital capability and financial technology adoption.

The population consisted of active users of Livin' by Mandiri mobile banking residing in Pasuruan Regency. A purposive sampling technique was applied to ensure that respondents possessed sufficient experience with the application to provide informed evaluations. To qualify for participation, respondents were required to be at least eighteen years old, have used the Livin' application for a minimum of six months, and have conducted at least two financial transactions within the previous month. These criteria were implemented to ensure that participants had meaningful interaction with the system and could assess its security, convenience, and overall performance. Based on the ten times rule for PLS modeling and considering the maximum number of structural paths directed at a latent construct, a minimum sample size of 150 respondents was required. To enhance statistical robustness and reduce sampling error, 312 questionnaires were distributed. After eliminating incomplete responses and cases with excessive missing data or straight lining patterns, 278 valid responses were retained for final analysis.

Data were collected using a structured questionnaire measured on a five point Likert scale ranging from strongly disagree to strongly agree. All measurement items were adapted from established and validated scales in prior research and adjusted to fit the mobile banking context. Security was measured using four items capturing perceptions of transaction protection, data confidentiality, authentication reliability, and fraud prevention mechanisms, adapted from Abdul Sathar et al. (2022); Almaiah et al. (2023). Trust was assessed using four items reflecting confidence in system integrity, reliability, and competence, adapted from Gefen et al. (2003). Transaction convenience was measured using four items adapted from Belanche et al., (2022); Türker et al. (2022), capturing interface simplicity, clarity of features, efficiency, and minimal effort in transaction processes. Usage decision was operationalized using three items reflecting behavioral commitment and continued usage intention, adapted from (Ramasamy et al., 2024). User satisfaction was measured using four items assessing expectation confirmation and overall evaluative judgment, adapted from AlSokkar et al. (2024). Digital literacy was measured using five items reflecting self-assessed digital competence, familiarity with financial technology, and ability to navigate digital platforms, adapted from Reddy et al. (2023). The questionnaire was translated into Bahasa Indonesia using a back translation procedure to ensure semantic equivalence between the original and translated versions.

Data collection was conducted through both online and offline channels to capture a diverse respondent base. The online survey was distributed through social media platforms, community forums, and local digital groups, while offline questionnaires were administered in public service areas, business districts, and educational institutions within Pasuruan. Participation was voluntary, and respondents were informed that the study was conducted for academic purposes only. Anonymity and confidentiality were assured, and no personally identifiable information was collected. Prior to full distribution, a pilot test was conducted with thirty mobile banking users to evaluate clarity of wording, item relevance, and estimated completion time. Minor revisions were made to improve readability and ensure contextual appropriateness.

The measurement model was evaluated to assess convergent validity, discriminant validity, and internal consistency reliability. Convergent validity was examined using standardized factor loadings and Average Variance Extracted values, with acceptable thresholds set at loadings above 0.70 and AVE above 0.50 (Hair

et al., 2019). Internal consistency reliability was assessed using Cronbach's Alpha and Composite Reliability coefficients, with values above 0.70 considered satisfactory. Discriminant validity was evaluated using the Fornell Larcker criterion and the Heterotrait Monotrait ratio, ensuring that the square root of AVE for each construct exceeded inter construct correlations and that HTMT values remained below recommended thresholds.

The structural model was assessed using a bootstrapping procedure with 5,000 resamples to determine the significance of path coefficients. Hypotheses were supported when t statistics exceeded 1.96 at the five percent significance level. The coefficient of determination was examined to evaluate explanatory power, and effect size values were calculated to assess the relative contribution of each predictor variable. Predictive relevance was evaluated using blindfolding procedures to generate Q square statistics. Mediation effects were tested using bias corrected bootstrapping to examine indirect effects, while moderation effects were assessed by constructing an interaction term between transaction convenience and digital literacy using the product indicator approach within SmartPLS. To address potential common method bias, procedural remedies were implemented through anonymity assurance and careful item design, and statistical assessment was conducted using full collinearity variance inflation factors. All variance inflation factor values were below recommended thresholds, indicating that common method bias was not a serious concern in the study.

The research adhered to ethical standards for studies involving human participants. Respondents were informed about the purpose of the study, assured of confidentiality, and given the right to withdraw at any time without consequence. The collected data were used exclusively for academic analysis and were stored securely to protect participant privacy.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 shows that mobile banking users in this study are relatively balanced in gender distribution, with male respondents slightly dominating at 53.6 percent. The age composition indicates that the majority of users fall within the productive age range of 18 to 35 years, representing over two thirds of the sample. This distribution suggests that younger and economically active individuals are more engaged in digital financial services. In terms of education, most respondents hold a bachelor degree, followed by senior high school graduates, indicating moderate to high educational attainment among users. The occupational profile demonstrates that private sector employees and entrepreneurs constitute the largest segments, reflecting frequent transactional needs. Income distribution shows that most respondents earn between IDR 2,000,000 and IDR 6,000,000 per month, suggesting middle income dominance. Overall, the demographic structure in Table 1 reflects a digitally active, economically productive population suitable for analyzing mobile banking behavior.

Table 1. Respondent Demographic Profile (N = 278)

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	149	53.6
	Female	129	46.4
Age	18–25 years	102	36.7
	26–35 years	88	31.7
	36–45 years	56	20.1
	>45 years	32	11.5
Education	Senior High School	94	33.8
	Diploma	41	14.7
	Bachelor Degree	112	40.3
	Master Degree or above	31	11.2
Occupation	Private Employee	134	48.2
	Entrepreneur	61	21.9
	Civil Servant	22	7.9
	Student	45	16.2
	Others	16	5.8

Monthly Income	< IDR 2,000,000	48	17.3
	IDR 2,000,000–4,000,000	97	34.9
	IDR 4,000,000–6,000,000	81	29.1
	> IDR 6,000,000	52	18.7

Table 2 indicates that all constructs exhibit high mean values above 4.30 on a five point scale, suggesting strong positive perceptions among respondents. Transaction convenience shows the highest mean value at 4.48, indicating that users perceive the mobile banking application as highly efficient and easy to navigate. Security and user satisfaction also demonstrate strong average scores, reflecting confidence in system protection and favorable evaluative outcomes. Trust and usage decision maintain similarly high levels, suggesting that perceived security and convenience translate into behavioral commitment and positive attitudes. Digital literacy records a slightly lower yet still strong mean of 4.31, indicating that respondents generally possess adequate digital competence. The relatively low standard deviation values across constructs suggest moderate response dispersion and consistent perceptions among users. Overall, Table 2 demonstrates that respondents hold favorable evaluations of the application across cognitive, behavioral, and evaluative dimensions, supporting further structural analysis.

Table 2. Descriptive Statistics of Main Constructs (N = 278)

Variable	Items	Mean	Standard Deviation	Minimum	Maximum
Security	4	4.42	0.58	2.75	5.00
Trust	4	4.36	0.61	2.50	5.00
Transaction Convenience	4	4.48	0.55	3.00	5.00
Usage Decision	3	4.40	0.59	2.67	5.00
User Satisfaction	4	4.44	0.57	2.75	5.00
Digital Literacy	5	4.31	0.63	2.40	5.00

Measurement Model

Table 3 demonstrates strong convergent validity and reliability across all constructs. All standardized loadings exceed the recommended threshold of 0.70, indicating that each indicator adequately represents its latent construct. Cronbach's Alpha values range from 0.882 to 0.918, exceeding the minimum requirement of 0.70 and confirming internal consistency reliability. Composite Reliability values range from 0.927 to 0.942, further supporting construct reliability. The Average Variance Extracted values range from 0.720 to 0.809, all above the 0.50 threshold, indicating satisfactory convergent validity. Overall, the results in Table 3 confirm that the measurement model is statistically sound and suitable for structural model analysis.

Table 3. Measurement Model Assessment

Construct	Item	Loading	Cronbach's Alpha	Composite Reliability	AVE
Security	SEC1	0.879	0.904	0.929	0.766
	SEC2	0.891			
	SEC3	0.872			
	SEC4	0.861			
Trust	TRU1	0.884	0.912	0.938	0.791
	TRU2	0.902			
	TRU3	0.887			
	TRU4	0.889			
Transaction Convenience	CON1	0.893	0.918	0.942	0.803
	CON2	0.905			
	CON3	0.891			
	CON4	0.887			
Usage Decision	DEC1	0.901	0.882	0.927	0.809
	DEC2	0.897			
	DEC3	0.895			
User Satisfaction	SAT1	0.892	0.910	0.937	0.788

	SAT2	0.901			
	SAT3	0.887			
	SAT4	0.879			
	DIG1	0.842			
	DIG2	0.861			
Digital Literacy	DIG3	0.848	0.903		0.928
	DIG4	0.855			0.720
	DIG5	0.843			

Table 4 presents the Fornell–Larcker criterion for assessing discriminant validity. The diagonal elements, representing the square root of AVE for each construct, are higher than the corresponding inter construct correlations. For example, the square root of AVE for Security is 0.875, which exceeds its correlations with Trust, Convenience, Decision, Satisfaction, and Digital Literacy. Similar patterns are observed for all constructs. These results confirm that each construct shares more variance with its own indicators than with other constructs, thereby supporting discriminant validity.

Table 4. Discriminant Validity Using Fornell–Larcker Criterion

Construct	SEC	TRU	CON	DEC	SAT	DIG
Security	0.875					
Trust	0.742	0.889				
Transaction Convenience	0.698	0.735	0.896			
Usage Decision	0.721	0.783	0.801	0.899		
User Satisfaction	0.764	0.812	0.774	0.842	0.888	
Digital Literacy	0.593	0.617	0.641	0.662	0.654	0.849

Note: Diagonal values represent the square root of AVE.

Table 5 presents the Heterotrait–Monotrait ratio results. All HTMT values are below the conservative threshold of 0.90, indicating satisfactory discriminant validity. The highest HTMT value is observed between Usage Decision and User Satisfaction at 0.891, which remains below the acceptable cutoff. These findings confirm that the constructs are empirically distinct and do not exhibit problematic multicollinearity.

Table 5. Discriminant Validity Using HTMT Ratio

Construct	SEC	TRU	CON	DEC	SAT	DIG
Security	–					
Trust	0.812	–				
Transaction Convenience	0.756	0.801	–			
Usage Decision	0.789	0.842	0.861	–		
User Satisfaction	0.834	0.873	0.846	0.891	–	
Digital Literacy	0.642	0.671	0.703	0.728	0.711	–

Collectively, the results in Table 3, Table 4, and Table 5 demonstrate that the measurement model satisfies reliability, convergent validity, and discriminant validity requirements, allowing progression to structural model evaluation.

Structural Measurement

Table 6 indicates that the model explains substantial variance in the endogenous constructs. Security accounts for 55.1 percent of the variance in trust, indicating strong explanatory capacity for trust formation. Security, trust, transaction convenience, and the interaction between transaction convenience and digital literacy jointly explain 69.4 percent of the variance in usage decision, suggesting that both cognitive evaluations and user capability meaningfully shape behavioral commitment. Security, trust, transaction convenience, and usage decision explain 78.2 percent of the variance in user satisfaction, which is consistent with a post adoption framework where satisfaction is largely determined by prior perceptions and usage

commitment. The Q² values are all well above zero, indicating that the model has strong out of sample predictive relevance for trust, usage decision, and satisfaction.

Table 6. Structural Model Explanatory Power and Predictive Relevance

Endogenous Construct	R ²	R ² Adjusted	Q ² Predictive Relevance
Trust	0.551	0.549	0.418
Usage Decision	0.694	0.690	0.507
User Satisfaction	0.782	0.779	0.601

Table 7 shows that security has a very large effect on trust, reinforcing the theoretical view that perceived security is a primary trust building mechanism in mobile banking. For usage decision, transaction convenience and trust exhibit medium effects, implying that usability and confidence in the platform jointly drive behavioral commitment. The moderation effect of digital literacy is statistically meaningful but small in magnitude, which is common for interaction effects in field survey data. For user satisfaction, usage decision has the strongest effect, indicating that satisfaction is strongly shaped by the extent of behavioral commitment and realized experience, consistent with expectation confirmation logic. Security also demonstrates a medium effect on satisfaction, suggesting that perceived safety contributes directly to evaluative judgments beyond its indirect pathway through trust.

Table 7. Effect Size (f²) of Predictors on Endogenous Constructs

Relationship	f ²	Effect Magnitude
Security → Trust	1.228	Large
Security → Usage Decision	0.036	Small
Trust → Usage Decision	0.154	Medium
Transaction Convenience → Usage Decision	0.214	Medium
Digital Literacy × Transaction Convenience → Usage Decision	0.028	Small
Security → User Satisfaction	0.112	Medium
Trust → User Satisfaction	0.021	Small
Usage Decision → User Satisfaction	0.291	Medium to large
Transaction Convenience → User Satisfaction	0.033	Small

Table 8 provides the direct effect estimates and their inferential statistics. H1 is strongly supported because security has a large positive coefficient on trust (beta 0.743) with a very high t value, indicating that users who perceive robust protection of data and transactions develop markedly higher trust. H2 is supported because trust positively predicts usage decision (beta 0.356), implying that confidence in platform integrity and reliability converts into behavioral commitment. H3 is supported with a slightly larger coefficient than trust on usage decision (beta 0.411), showing that frictionless navigation and efficient transaction flow are central determinants of the decision to use mobile banking. H4 is strongly supported because usage decision has the largest direct coefficient on satisfaction (beta 0.529), suggesting that satisfaction is primarily shaped by committed use that precedes evaluation and confirmation of expectations. H5 is supported because security has a significant direct effect on satisfaction (beta 0.218), indicating that perceived safety contributes directly to positive evaluation even after accounting for trust, convenience, and usage decision. Two additional paths are statistically significant, with smaller coefficients, showing that trust and convenience can also influence satisfaction directly, although their effects are weaker than the effect of usage decision, which aligns with a post adoption evaluation process.

Table 8. Direct Hypothesis Testing Results (Bootstrapping 5,000; Two Tailed)

Hypothesis	Path	Beta	Std. Error	t-v	p-v	Decision
H1	Security → Trust	0.743	0.032	23.219	< 0.001	Supported
H2	Trust → Usage Decision	0.356	0.062	5.742	< 0.001	Supported

H3	Transaction Convenience → Usage Decision	0.411	0.058	7.086	< 0.001	Supported
H4	Usage Decision → User Satisfaction	0.529	0.050	10.580	< 0.001	Supported
H5	Security → User Satisfaction	0.218	0.061	3.574	< 0.001	Supported
Additional	Trust → User Satisfaction	0.098	0.048	2.042	0.042	Significant
Additional	Transaction Convenience → User Satisfaction	0.121	0.056	2.161	0.031	Significant

Table 9 confirms that usage decision and trust operate as key transmission mechanisms in the model. H6 is supported because security increases trust, which then increases usage decision, producing a significant indirect effect. This result clarifies the mechanism by showing that security does not only influence behavior through a direct motivational route but also through confidence building. H7 is supported because trust increases usage decision, which subsequently increases satisfaction, indicating that satisfaction is not merely an attitudinal outcome of trust but is largely realized after users commit to using the service and evaluate its performance. H8 is supported because transaction convenience increases usage decision, which then improves satisfaction, implying that usability features shape satisfaction primarily by enabling continued or committed use rather than solely by directly pleasing users. The mediation is complementary because the direct effects remain significant while the indirect effects are also significant, suggesting that both immediate and process based pathways coexist in explaining satisfaction and usage behavior.

Table 9. Mediation Testing Results (Indirect Effects; Bootstrapping 5,000)

Hypothesis	Indirect Path	Beta	Std. Error	t Value	P Value	Type
H6	Security → Trust → Usage Decision	0.264	0.047	5.617	< 0.001	Complementary
H7	Trust → Usage Decision → User Satisfaction	0.188	0.037	5.081	< 0.001	Complementary
H8	Transaction Convenience → Usage Decision → User Satisfaction	0.217	0.041	5.293	< 0.001	Complementary

Table 10 shows that digital literacy significantly strengthens the relationship between transaction convenience and usage decision. The positive interaction coefficient indicates that as digital literacy increases, the positive effect of transaction convenience on usage decision becomes stronger. Substantively, this implies that users with higher digital capability are better able to recognize and exploit interface efficiency and streamlined transaction processes, translating convenience perceptions into stronger behavioral commitment. Although the interaction magnitude is modest, the effect is theoretically meaningful because interaction effects in technology adoption studies are typically smaller than main effects yet still important for identifying boundary conditions and user heterogeneity.

Table 10. Moderation Analysis Results

Hypothesis	Interaction Path	Beta	Standard Error	t Value	p Value	Decision
H9	Transaction Convenience × Digital Literacy → Usage Decision	0.107	0.045	2.378	0.018	Supported

Across Tables 6 through 10, the model demonstrates strong explanatory power and predictive relevance, with robust support for the primary direct hypotheses and the proposed mediated pathways. Security primarily operates by building trust and also contributes directly to satisfaction, transaction convenience and trust are key drivers of usage decision, and usage decision is the dominant determinant of satisfaction. Digital literacy acts as a boundary condition that amplifies the role of transaction convenience in shaping usage

decisions, supporting the argument that capability differences matter in emerging market mobile banking adoption.

Discussion

The findings demonstrate that perceived security is a primary determinant of trust in mobile banking. The strong relationship between security and trust reinforces prior empirical evidence showing that users' confidence in encryption systems, authentication mechanisms, and fraud protection significantly enhances trust in digital financial platforms (Choudhuri et al., 2024). In mobile banking environments, security operates not merely as a technical attribute but as a psychological assurance mechanism that reduces perceived vulnerability. This finding is particularly relevant in emerging market contexts where digital fraud awareness is increasing and risk sensitivity remains high. For Livin' by Mandiri, this implies that strengthening visible and understandable security cues is essential. Practical initiatives may include clearer explanations of authentication processes, real time transaction alerts, simplified security dashboards, and proactive fraud awareness notifications. These measures can transform backend protection systems into user perceived safeguards, thereby reinforcing trust formation.

The results further reveal that transaction convenience and trust significantly influence usage decision, with transaction convenience demonstrating a comparatively stronger effect. This finding aligns with Technology Acceptance and Unified Theory frameworks, which emphasize effort expectancy as a central determinant of behavioral intention (Guo, 2022; Thantrige et al., 2025; VanDeWiele et al., 2025). In mobile banking, interface clarity, minimal transaction steps, and fast system response are crucial in converting positive perceptions into behavioral commitment. The implication for practitioners is that usability enhancements should be treated as strategic adoption drivers. For example, Livin' by Mandiri could redesign high frequency transaction flows to reduce click depth, optimize menu categorization for intuitive navigation, and integrate predictive shortcuts based on transaction history. Such improvements may not only increase adoption decisions but also reinforce habitual use, which is critical in digital banking retention strategies.

A major theoretical contribution of the model lies in clarifying the behavioral pathway through which trust and convenience influence satisfaction. The mediation results support Expectation Confirmation Theory, which posits that satisfaction emerges after usage experience confirms prior expectations (AlSokkar et al., 2024). Trust and convenience influence satisfaction indirectly through usage decision because behavioral commitment precedes evaluative judgment. This means that satisfaction is not merely a function of perceived attributes but is strongly shaped by the extent to which users translate perceptions into actual engagement. For Livin' by Mandiri, this suggests that onboarding experiences should be designed to deliver immediate confirmation of expectations. Structured first transaction guidance, contextual assistance, and seamless error recovery mechanisms may help ensure that early usage experiences validate users' trust and convenience perceptions, thereby strengthening satisfaction and long term loyalty.

The direct effect of security on satisfaction indicates that safety perceptions also influence evaluative outcomes beyond behavioral commitment. This is consistent with prior findings showing that perceived security and privacy protection enhance satisfaction in digital financial services (Pea-Assounga et al., 2024; Zaredoost & Bahramzadeh, 2025). Users derive emotional comfort from knowing that their financial assets are safeguarded, which contributes to positive evaluations of the service. Therefore, security should be communicated as part of the service value proposition rather than remaining invisible to users. Periodic security summaries, educational notifications about phishing prevention, and transparent communication regarding data protection standards can enhance perceived control and reduce anxiety. Such initiatives not only reinforce trust but also directly contribute to satisfaction by strengthening users' sense of financial safety.

The moderating role of digital literacy highlights the importance of user heterogeneity in emerging markets. The finding that digital literacy strengthens the relationship between transaction convenience and usage decision supports digital capability theory, which argues that technology benefits are contingent upon users' competence (Reddy et al., 2023). Users with higher digital literacy are better able to interpret interface efficiency and leverage system features, making them more responsive to usability improvements. This suggests that digital banking strategies should adopt a segmented approach. For digitally advanced users, feature innovation and advanced customization may enhance engagement. For users with lower digital literacy, simplified interface modes, embedded micro tutorials, and community based digital education

programs may reduce barriers to adoption. By integrating capability development with usability enhancement, banks can amplify the positive effect of transaction convenience on usage decisions and ultimately improve overall satisfaction outcomes.

Overall, the study advances mobile banking research by integrating security, trust, transaction convenience, and digital literacy within a coherent moderated mediation framework. The findings emphasize that digital banking success depends not only on technical infrastructure but also on psychological assurance, usability optimization, and user capability development.

CONCLUSION

This study develops and tests a moderated mediation model to explain how security, trust, transaction convenience, usage decision, and digital literacy jointly shape user satisfaction in mobile banking. The findings confirm that security is a foundational driver of trust and directly enhances satisfaction, while transaction convenience and trust significantly influence usage decision. Usage decision emerges as the strongest predictor of satisfaction, supporting expectation confirmation logic that satisfaction is largely formed after behavioral commitment and experiential evaluation. The mediation results clarify that trust and transaction convenience influence satisfaction primarily through usage decision, while digital literacy strengthens the effect of convenience on behavioral commitment. These results extend technology acceptance and trust theories by integrating psychological mechanisms and user capability as boundary conditions in an emerging market context.

Despite its contributions, this study has several limitations. The cross sectional design restricts causal inference and does not capture dynamic changes in trust and satisfaction over time. The use of self-reported data may introduce perceptual bias, although statistical remedies were applied. The research context is limited to a single semi urban region in Indonesia, which may affect generalizability to other geographic or institutional environments. Future research should consider longitudinal designs to examine continuance behavior, incorporate objective usage data, and conduct comparative studies across different banks or regions. Further studies may also explore additional moderators such as financial literacy, risk tolerance, or generational differences to deepen understanding of user heterogeneity in digital banking adoption.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest associated with the conduct of this research, the analysis of the data or the preparation of this manuscript.

DATA AVAILABILITY

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

REFERENCES

- Abdul Sathar, M. B., Rajagopalan, M., Naina, S. M., & Parayitam, S. (2022). A moderated mediation model of perceived enjoyment, security and trust on customer satisfaction: Evidence from the banking industry in India. *Journal of Asia Business Studies*, 17(3), 656–679. <https://doi.org/10.1108/JABS-03-2022-0089>
- Ahmad, N. R. (2025). Financial inclusion: How digital banking is bridging the gap for emerging markets. *Journal of Applied Linguistics and TESOL (JALT)*, 8(1), 894–902. <https://jalt.com.pk/index.php/jalt/article/view/400>
- Alkindi, M., Hafiz, A., Abulibdeh, E., Al Murshidi, G., & Abulibdeh, A. (2022). Moderating effect of faculty status in the relationship between attitude, perceived usefulness, perceived ease of use, behavioral intention, and subjective norms on mobile learning applications.
- Almaiah, M. A., Al Otaibi, S., Shishakly, R., Hassan, L., Lutfi, A., Alrawad, M., Qataweh, M., & Alghanam, O. A. (2023). Investigating the role of perceived risk, perceived security and perceived trust on smart m banking application using SEM. *Sustainability*, 15(13), 9908. <https://doi.org/10.3390/su15139908>

- Alowayr, A. (2021). Determinants of mobile learning adoption: Extending the unified theory of acceptance and use of technology. *International Journal of Information and Learning Technology*, 39(1), 1–12. <https://doi.org/10.1108/IJILT-05-2021-0070>
- AlSokkar, A. A. M., Law, E. L. C., AlMajali, D. A., Al Gasawneh, J. A., & Alshinwan, M. (2024). An indexed approach for expectation confirmation theory: A trust based model. *Electronic Markets*, 34(1), 12. <https://doi.org/10.1007/s12525-024-00694-3>
- Arangurí, M., Mera, H., Noblecilla, W., & Lucini, C. (2025). Digital literacy and technology adoption in agriculture: A systematic review of factors and strategies. *AgriEngineering*, 7(9), 296. <https://doi.org/10.3390/agriengineering7090296>
- Belanche, D., Guinalú, M., & Albás, P. (2022). Customer adoption of P2P mobile payment systems: The role of perceived risk. *Telematics and Informatics*, 72, 101851. <https://doi.org/10.1016/j.tele.2022.101851>
- Bergmann, M., Maçada, A. C. G., de Oliveira Santini, F., & Rasul, T. (2023). Continuance intention in financial technology: A framework and meta analysis. *International Journal of Bank Marketing*, 41(4), 749–786. <https://doi.org/10.1108/IJBM-04-2022-0168>
- Cao, A., Guo, L., & Li, H. (2025). Understanding farmer cooperatives' intention to adopt digital technology: Mediating effect of perceived ease of use and moderating effects of internet usage and training. *International Journal of Agricultural Sustainability*, 23(1), Article 2464523. <https://doi.org/10.1080/14735903.2025.2464523>
- Colquitt, J. A., & Baer, M. D. (2023). Foster trust through ability, benevolence, and integrity. In *Principles of organizational behavior* (pp. 345–363). John Wiley & Sons. <https://doi.org/10.1002/9781394320769.ch17>
- Durodola, O. (2024). *Electronic commerce trust model for securing electronic commerce transactions* (SSRN Scholarly Paper No. 5105928). Social Science Research Network. <https://doi.org/10.2139/ssrn.5105928>
- Fangni, L. (2025). The psychology of sports fandom in China: Emotional dynamics, execution intention, and the mediating role of self efficacy. *Journal of Criminal Investigation and Criminology*, 76(2). <https://doi.org/10.63386/621201>
- Gao, S., & Yan, J. (2022). Verbal or written? The impact of apology on the repair of trust: Based on competence versus integrity based trust violation. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.884867>
- Grego, M., Bartosiak, M., Palese, B., Piccoli, G., & Denicolai, S. (2025). Disentangling the digital: A critical review of information technology capabilities, information technology enabled capabilities and digital capabilities in business research. *International Journal of Management Reviews*, 27(2), 238–260. <https://doi.org/10.1111/ijmr.12389>
- Guo, Y. Y. (2022). Digital trust and the reconstruction of trust in the digital society: An integrated model based on trust theory and expectation confirmation theory. *Digital Government: Research and Practice*. <https://doi.org/10.1145/3543860>
- Habib, A., Pramana, E., Junaedi, H., & Ronando, E. (2025). Extending the expectation confirmation model to examine continuous use of mobile banking: Security, trust, and convenience. *INTENSIF: Jurnal Ilmiah Penelitian dan Penerapan Teknologi Sistem Informasi*, 9(1), 76–96. <https://doi.org/10.29407/intensif.v9i1.23751>
- Ibrahim, A., & Shiring, E. (2022). The relationship between educators' attitudes, perceived usefulness, and perceived ease of use of instructional and web based technologies: Implications from the technology acceptance model. *International Journal of Technology in Education*, 5(4), 535–551.
- Jarad, A. L. G. A. (2022). Continuous intention to use mobile banking apps: Empirical study in Iraq. *Theory, Methodology, Practice*, 18(1), 61–74. <https://doi.org/10.18096/TMP.2022.01.05>
- Joshi, H., & Chawla, D. (2024). Impact of security on wallet adoption: Multiple and serial mediating roles of trust and attitude and gender as a moderator. *International Journal of Bank Marketing*, 42(5), 870–896. <https://doi.org/10.1108/IJBM-02-2023-0118>
- Lin, H. F. (2021). The mediating role of passenger satisfaction on the relationship between service quality and behavioral intentions of low cost carriers. *The TQM Journal*, 34(6), 1691–1712. <https://doi.org/10.1108/TQM-06-2021-0187>
- Siano, A., Raimi, L., Palazzo, M., & Panait, M. C. (2020). Mobile banking: An innovative solution for increasing financial inclusion in Sub Saharan African countries: Evidence from Nigeria. *Sustainability*, 12(23), 10130. <https://doi.org/10.3390/su122310130>

- Zhang, W., Siyal, S., Riaz, S., Ahmad, R., Hilmi, M. F., & Li, Z. (2023). Data security, customer trust and intention for adoption of fintech services: An empirical analysis from commercial bank users in Pakistan. *Sage Open*, 13(3), 21582440231181388. <https://doi.org/10.1177/21582440231181388>
- Zhou, Z. (2023). Towards a new definition of trust for teaching in higher education. *International Journal for the Scholarship of Teaching and Learning*, 17(2). <https://doi.org/10.20429/ijsofl.2023.17202>