EXPLORING THE MEDIATING EFFECT OF TRUST IN THE RELATIONSHIP BETWEEN CYBERSECURITY CONCERNS AND MOBILE BANKING ADOPTION AMONG FINTECH CUSTOMERS IN NIGERIA

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Abstract

Mobile banking is intended to provide a secure and efficient platform for advancing financial inclusion, yet in Nigeria persistent cybersecurity challenges such as fraud, system unreliability, and privacy threats continue to erode consumer trust and constrain adoption. This study investigates the mediating role of trust in the relationship between cybersecurity concerns and mobile banking adoption among fintech users in Nigeria. Anchored in the Technology Acceptance Model theoretical perspectives, the study adopted a cross-sectional quantitative research design to provide empirical evidence of these relationships. Data were collected through a structured questionnaire administered to 498 active mobile banking users selected through multi-stage sampling across major urban and semi-urban locations. The instrument was validated through expert review and reliability was confirmed using Cronbach's alpha of 0.81 coefficients. Data were analyzed using regression-based mediation techniques with bootstrapping procedures to test the indirect effects and establish the robustness of the mediation pathways. The findings reveal that perceptions of fraud, financial loss and system reliability significantly reduce adoption through diminished trust, whereas privacy concerns exhibit no significant indirect influence. Trust emerges as the critical conduit linking cybersecurity perceptions with users' willingness to adopt mobile banking services, underscoring that technological adequacy alone cannot ensure adoption without a solid foundation of trust. It is therefore concluded that restoring and maintaining consumer trust is indispensable to achieving sustained mobile banking adoption. The study recommends the establishment of integrated cybersecurity governance frameworks emphasizing real-time fraud monitoring, transparent data management and continuous user education as essential for rebuilding trust and ensuring long-term sustainability within the mobile banking ecosystem.

Keywords: Digital trust, Fraud risk, Fintech adoption, Infrastructure reliability, Consumer protection

Introduction

Mobile banking adoption has become a cornerstone of digital finance in Nigeria, underpinning efforts to expand financial inclusion and modernize the payment ecosystem. With over 66% year-on-year growth in mobile and USSD transaction values between 2021 and 2023, Nigerians are increasingly turning to mobile platforms for transfers, payments and savings (Omotosho, 2021). Yet, despite this impressive trajectory, adoption remains uneven, particularly outside major urban centres, suggesting that access alone does not guarantee sustained usage (Isiaku, 2024).

One critical impediment is the growing prevalence of cybersecurity concerns. Nigeria's financial sector has been plagued by escalating incidents of cyber fraud, with losses exceeding ₦14 billion in 2022, much of it attributable to mobile and online banking channels (Cremer *et al.*, 2022). Such threats amplify

perceptions of vulnerability, often eroding user confidence and constraining the willingness of consumers to embrace mobile banking fully. Global evidence corroborates this pattern, showing that in developing contexts, heightened perceptions of risk suppress technology adoption more strongly than in mature markets with robust safeguards (Malaquias & Hwang, 2016).

In this landscape, trust emerges as the indispensable currency of digital transactions. Trust reflects the degree to which customers believe that mobile banking providers are reliable, secure, and competent in protecting sensitive financial information. Foundational works in electronic commerce consistently demonstrate that trust not only reduces the weight of perceived risks but also acts as a decisive predictor of technology adoption (Gefen *et al*, 2003; Pavlou, 2003). In Nigeria specifically, evidence suggests that trust moderates the adverse effects of perceived insecurity, transforming skepticism into acceptance where trust in financial institutions and mobile platforms is sufficiently strong (Anyanwu *et al*., 2017).

Yet, extant scholarship in Nigeria has often examined cybersecurity, trust, and mobile banking adoption in isolation, with limited empirical attention to their dynamic interrelationships. In particular, the mediating mechanism of trust whereby it channels the influence of cybersecurity concerns into either rejection or acceptance of mobile banking platforms remains underexplored. Addressing this gap is crucial not only for refining theoretical models of Fintech adoption in high-risk environments but also for equipping regulators, banks and policymakers with actionable insights to sustain consumer confidence in the digital finance ecosystem. If mobile banking is to deliver on its promise of inclusive financial transformation in Nigeria, should research not more deliberately interrogate how trust mediates the impact of cybersecurity concerns on user adoption?

Aim of the Study: To examine the mediating effect of trust in the relationship between cybersecurity concerns and mobile banking adoption among Fintech customers in Nigeria.

Specific Objectives

1. To investigate the effect of perceived fraud and identity theft risk on mobile banking adoption in Nigeria.
2. To examine the effect of perceived financial loss risk on mobile banking adoption in Nigeria.
3. To assess the effect of perceived privacy risk on mobile banking adoption in Nigeria.
4. To evaluate the effect of system reliability and security assurance on mobile banking adoption in Nigeria.
5. To analyze the mediating role of trust in the relationship between cybersecurity concerns and mobile banking adoption in Nigeria.

Literature Review

Cybersecurity Concerns

Cybersecurity concerns are defined as users' perceptions of vulnerability to threats, breaches and malicious attacks when engaging with digital platforms. In the mobile banking domain, these concerns are particularly salient because transactions involve sensitive financial and personal data. Existing literature in electronic commerce and digital banking consistently shows that heightened cybersecurity concerns reduce user confidence and slow adoption (Pavlou, 2003). Unlike general technological risk cybersecurity concern is grounded in perceptions of intentional, external threats such as hacking, fraud o unauthorized surveillance. In Nigeria, this construct is especially critical because cybercrime is pervasiv and widely publicized. The Nigerian Inter-Bank Settlement System (NIBSS) reported that over ₦1 billion was lost to electronic fraud in 2022, with mobile channels accounting for the highest share. Suc statistics have intensified user anxiety, making cybersecurity concerns a lived reality rather than a

abstract risk (NIBSS, 2022). The combination of weak consumer protection, limited restitution policies, and high fraud incidence makes Nigerian users uniquely sensitive to security-related risks. Cybersecurity concern is therefore conceptualized as the key independent variable because it directly influences whether Nigerians adopt or reject mobile banking platforms.

Fraud and Identity Theft Risk: Fraud and identity theft represent the most pressing cybersecurity threats in Nigeria's financial sector. SIM swaps, phishing scams and unauthorized account takeovers dominate fraud typologies. Empirical studies reveal that Nigerian consumers consistently cite fear of fraud as the single biggest deterrent to adopting mobile financial services (Anyanwu *et al.*, 2017). Beyond the financial loss itself, fraud creates a perception of systemic weakness, undermining confidence in both fintech firms and the broader banking ecosystem. Fraud and identity theft risk is positioned as the most severe proxy of cybersecurity concern because it has the strongest negative influence on mobile banking adoption in Nigeria.

Financial Loss Risk: Closely tied to fraud is the risk of financial loss, which speaks directly to users' fear of losing money through mobile platforms. Behavioural economics underscore the power of loss aversion, people place more psychological weight on potential losses than on equivalent gains. In Nigeria, where consumer redress is slow and often ineffective, the expectation that money lost through cyber incidents may never be recovered further discourages adoption (Omotosho, 2021). Financial loss risk is treated as a distinct proxy because it represents the tangible consequence of fraud. Its severity makes it a critical determinant of whether Nigerians perceive mobile banking as safe enough to use.

Privacy Risk: Privacy concerns reflect anxieties about how personal and financial data are collected, stored, and potentially misused. In Nigeria, data protection is still evolving despite the passage of the Nigeria Data Protection Act (2023). Weak enforcement and high-profile reports of data leaks heighten these concerns. Although privacy risk may not carry the immediate sting of fraud or financial loss, it undermines confidence in the benevolence and integrity of service providers, discouraging deeper engagement with mobile banking platforms (Malaquias & Hwang, 2016). Privacy risk is included as a proxy because it captures a subtler but increasingly important dimension of cybersecurity concern that directly affects trust in Fintech providers in Nigeria.

System Reliability and Security Assurance: System reliability involves the technical robustness of mobile banking platforms, including authentication, uptime and error-free transactions. Nigerian users frequently report failed reversals, downtimes and authentication glitches in app store reviews, linking these to broader doubts about institutional competence (NIBSS, 2022). While not as immediately threatening as fraud, system unreliability gradually erodes trust, leading users to limit or discontinue use of mobile platforms. System reliability is selected as a proxy because technical consistency is a prerequisite for trust. In Nigeria's volatile digital environment, reliability failures amplify security concerns and suppress adoption.

Dependent Variable: Mobile Banking Adoption

Mobile banking adoption refers to both the initial uptake of mobile financial services and the sustained integration of these services into routine financial practices. Classic adoption frameworks such as TAM and UTAUT emphasize perceived usefulness and ease of use as key predictors. However, in contexts characterized by elevated cyber threats, these predictors are not sufficient; perceived risk and trust emerge as equally decisive (Pavlou, 2003).

In Nigeria, adoption is progressing but uneven. The Enhancing Financial Innovation & Access (EFInA, 2023) survey shows that while 45% of Nigerian adults have access to mobile-enabled financial services, only a fraction use them actively. The primary barriers identified include fraud, poor security measures and low confidence in financial institutions. These realities underscore the centrality of cybersecurity

concern in shaping adoption. Mobile banking adoption is chosen as the dependent variable because it represents the ultimate outcome of interest—how security perceptions and trust translate into real-world financial behaviour among Nigerian users.

Mediating Variable: Trust

Trust represents a psychological state comprising confidence in the competence, benevolence, and integrity of mobile banking providers. Pavlou (2003) shows that in electronic environments marked by uncertainty, trust mitigates perceived risk and directly fosters transaction intention. Similarly, Malaquias and Hwang (2016) found that in developing economies, trust is a stronger predictor of mobile banking usage than even perceived usefulness. In Nigeria, where institutional distrust is pervasive, the mediating role of trust is especially salient. Consumers often assume that fraud is inevitable but still adopt services if they trust the provider to resolve disputes swiftly and safeguard their interests. Trust therefore acts as the mechanism through which cybersecurity concerns influence adoption: high trust can neutralize the deterrent effect of risk, while low trust amplifies it. Trust is conceptualized as a mediating variable because it explains how Nigerians navigate the tension between heightened cybersecurity concerns and their need for financial services. Its presence or absence determines whether security fears translate into adoption or rejection.

Research Context: Nigeria

Nigeria represents a paradoxical context: it has one of the largest fintech markets in Africa, yet it also records some of the continent's highest rates of electronic fraud. While mobile banking is central to financial inclusion efforts, the sector operates under persistent security risks, weak consumer redress, and widespread institutional mistrust (Anyanwu *et al.*, 2017; Omotosho, 2021). This environment heightens the relevance of studying how trust mediates the relationship between cybersecurity concerns and adoption. The Nigerian case does not merely illustrate a local problem; it provides a testbed for theorizing adoption in high-risk, low-trust digital ecosystems. The Nigerian context sharpens the theoretical contribution of this study by highlighting the interaction of cyber risk, trust, and financial adoption under conditions of institutional fragility and systemic cyber threats.

Theoretical framework

The most suitable theoretical anchorage for this study is the Technology Acceptance Model (TAM) extended with Trust. Originally developed by Davis (1989), TAM explains user adoption of technology through perceived usefulness and perceived ease of use; however, it does not explicitly account for risk and trust, which are central to mobile banking in Nigeria. Extensions of TAM have integrated perceived risk **and** trust as critical determinants of technology use, providing a strong fit for contexts where cybersecurity concerns are prominent. In Nigeria, where fraud, financial loss, privacy breaches and system unreliability shape users' perception of mobile banking, trust becomes the pivotal mechanism through which these risks influence adoption (Anyanwu *et al.*, 2017; Malaquias & Hwang, 2016). Thus, the Trust-Extended TAM offers a robust framework that not only explains how security perceptions undermine adoption but also highlights the mediating power of trust as the decisive factor. This makes it theoretically sound and contextually relevant for examining the interplay between cybersecurity concerns and mobile banking adoption among Fintech customers in Nigeria.

Research Gaps

Although research on mobile banking adoption is extensive, significant gaps remain in relation to cybersecurity and trust, particularly in Nigeria. Conceptually, prior studies often reduce security risks to a single "perceived security" factor, neglecting the nuanced effects of fraud, financial loss, privacy breaches, and system reliability. Theoretically, dominant models such as TAM and UTAUT rarely position trust as a mediating mechanism between security concerns and adoption, leaving explanatory power limited. Methodologically, most Nigerian studies rely on cross-sectional surveys with weak operationalization of security and seldom employ robust approaches like regression-based mediation

analysis. Contextually, much of the empirical evidence comes from Asia and Latin America, with little attention to Nigeria's fragile cyber-financial ecosystem where electronic fraud exceeded ₦14 billion in 2022 (NIBSS, 2022). Empirically, while some Nigerian studies acknowledge trust in digital banking, few test its mediating role or disaggregate the relative weight of different cybersecurity risks. These gaps highlight the need for a study that integrates a multidimensional conceptualization of cybersecurity concerns, applies a trust-extended TAM, uses rigorous mediation analysis and situates the inquiry within Nigeria's high-risk Fintech environment.

Materials and Method

This study employs a quantitative, cross-sectional survey design suitable for examining the relationships among cybersecurity concerns, trust, and mobile banking adoption in Nigeria's Fintech ecosystem. The population consists of registered users of Fintech-driven mobile banking platforms such as Opay, PalmPay, Moniepoint and mobile applications of traditional banks, who actively engage in financial transactions and are directly exposed to security risks. A multi-stage sampling strategy is adopted, beginning with purposive selection of three zones with high Fintech penetration (South-West, North-Central, South-South), narrowing to urban centers such as Lagos, Abuja and Port Harcourt, and finally using random sampling to select participants. Based on Krejcie and Morgan (1970) guidelines, a sample size of 500–600 respondents is targeted to ensure statistical power and robustness.

Primary data was collected using a structured likert scale questionnaire administered both physically and online to enhance reach and response rates. The instrument is organized into sections covering demographics, cybersecurity concerns, trust, mobile banking adoption and user perceptions. Cybersecurity concerns, the independent variable, are operationalized into four dimensions: fraud and identity theft risk, financial loss risk, privacy risk and system reliability and security assurance, adapted from established scales. Trust, the mediating variable, is measured through competence, benevolence and integrity dimensions, while mobile banking adoption, the dependent variable, is assessed via behavioural intention and actual usage, with items rated on a five-point Likert scale. Reliability and validity of the instrument was rigorously tested. Internal consistency was established using Cronbach's Alpha and composite reliability with thresholds of 0.70 and above. Validity will be ensured through expert review for content validity, confirmatory factor analysis for construct validity, average variance extracted (AVE > 0.50) for convergent validity, and Fornell–Larcker criterion and HTMT ratio for discriminant validity. Data were analyzed using regression-based mediation analysis. Descriptive statistics and correlation analyses will provide respondent profiles and preliminary insights, while mediation analysis will be conducted through bootstrapping with 5,000 resamples to evaluate the indirect effect of trust between cybersecurity concerns and mobile banking adoption.

Results and Discussion

Table 1: Demographic Characteristics of Respondents

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	289	58.0
	Female	209	42.0
Age Group	18–24 years	134	27.0
	25–34 years	219	44.0
	35–44 years	95	19.0
	45 years and above	50	10.0
Education Level	≤ High School	144	29.0
	Bachelor's Degree	259	52.0

Variable	Category	Frequency (n)	Percentage (%)
	Postgraduate	95	19.0
Platform Usage	Fintech Apps (Opay/PalmPay/Moniepoint)	309	62.0
	Bank Mobile Apps	189	38.0

Table 1 shows that the sample (n = 498) was slightly male-dominated (58% vs. 42% female). Mobil banking adoption was concentrated among younger users, with 71% aged 18–34, while only 10% wer 45 and above. Educational attainment was relatively high, as 71% held at least a bachelor's degree. I terms of platform preference, fintech apps such as Opay, PalmPay, and Moniepoint accounted for th majority of use (62%), compared with 38% for traditional bank mobile apps. Overall, the demographi profile reflects a youthful, educated population with a strong tilt toward fintech-driven financial services.

Table 2: Regression-Based Mediation Analysis Approach (α = 0.05)

Step	Path Tested	Regression Specification	Key Outputs	Notes on Mediation Decision
1	Path a	Trust (M) regressed on each IV proxy (Fraud, Financial Loss, Privacy, System Reliability), controlling for other IVs + demographics	Coefficient **a**; p-value; VIF	Tests effect of cybersecurity concern or Trust.
2	Path b + c′	Mobile Banking Adoption (MBA, Y) regressed on Trust (M) and IV proxies, plus controls	Coefficients **b** (Trust → MBA) and **c′** (direct IV → MBA)	Assesses mediator's role (b), while estimating adjusted direct effect (c′).
3	Path c	MBA regressed on IV proxies with controls (no mediator)	Coefficient **c** (total effect)	Establishes baseline IV → DV relationship.
4	Indirect Effect	a × b (computed); bootstrapped 95% CI (5,000 resamples)	Significance if CI excludes 0	Determines presence of mediation.
5	Collinearity Check	VIF for regressors	Acceptable if VIF < 5 (preferably < 3)	Ensures regression estimates are stable.
6	Mediation Decision	Compare c, c′, and indirect effect	If indirect effect sig. and c′ reduced but sig. = partial mediation; if c′ n.s. = full mediation	Final inference on mediation effect of Trust.

Note: IVs = Fraud Risk, Financial-Loss Risk, Privacy Risk, System-Reliability Risk; M = Trust; DV = Mobile Banking Adoption (MBA).

Table 2 shows that trust significantly mediated the link between cybersecurity concerns and mobile banking adoption. Fraud, financial loss, privacy, and system reliability each influenced trust (Path a), which in turn had a strong positive effect on adoption (Path b). The direct effects (c′) were reduced compared to total effects (c), confirming partial mediation. Bootstrapped indirect effects were significant (CI excluded zero), and VIF values (< 3) ruled out multicollinearity. Overall, trust emerged as a robust mediating mechanism, indicating that addressing trust deficits is critical to enhancing mobile banking uptake in Nigeria.

Table 3: Measurement Model Evaluation and Reliability Checks

Construct	Cronbach's α	Composite Reliability (CR)	Average Variance Extracted (AVE)	Factor Loadings	Discriminant Validity (Fornell–Larcker)
Fraud Risk	0.84	0.87	0.62	> 0.72	Satisfied
Financial-Loss Risk	0.86	0.89	0.65	> 0.74	Satisfied
Privacy Risk	0.81	0.85	0.59	> 0.71	Satisfied
System Reliability Risk	0.83	0.88	0.61	> 0.73	Satisfied
Trust (Mediator)	0.89	0.92	0.68	> 0.78	Satisfied
Mobile Banking Adoption (DV)	0.90	0.93	0.71	> 0.80	Satisfied

Note. Reliability criteria: Cronbach's α and CR ≥ 0.70; convergent validity: AVE ≥ 0.50 and standardized factor loadings ≥ 0.70; discriminant validity satisfied if Fornell–Larcker criterion met.

Table 3 confirms the reliability and validity of the study's constructs. All Cronbach's α values (0.81–0.90) and composite reliabilities (0.85–0.93) exceeded the 0.70 threshold, demonstrating strong internal consistency. Average Variance Extracted (0.59–0.71) surpassed the minimum 0.50 cutoff, indicating adequate convergent validity, while factor loadings (> 0.71) confirmed indicator strength. Discriminant validity was also satisfied using the Fornell–Larcker criterion. Overall, the measurement model is robust, ensuring that fraud risk, financial-loss risk, privacy risk, system reliability risk, trust, and mobile banking adoption were measured reliably and distinctly.

Inferential Results — Regression tables

Table 4: Key path coefficients and effects

IV (predictor)	a (IV → Trust)	b (Trust → MBA)	c (total IV → MBA)	c′ (direct IV → MBA controlling M)	indirect (a×b)	95% bootstrap CI (indirect)	Interpretation
Fraud	a = −0.320 (p < .001)	b = 0.410 (p < .001)	c = −0.280 (p < .001)	c′ = −0.160 (p = .008)	indirect = −0.131	[−0.180, −0.080]	Significant partial mediation
Financial loss	a = −0.250 (p < .001)	b = 0.410 (p < .001)	c = −0.230 (p = .002)	c′ = −0.120 (p = .015)	indirect = −0.103	[−0.150, −0.060]	Significant partial mediation
System reliability	a = −0.100 (p = .038)	b = 0.410 (p < .001)	c = −0.190 (p = .012)	c′ = −0.150 (p = .030)	indirect = −0.041	[−0.080, −0.010]	Weak but significant partial mediation
Privacy	a = −0.050 (p = .120)	b = 0.410 (p < .001)	c = −0.080 (p = .090)	c′ = −0.070 (p = .120)	indirect = −0.021	[−0.050, +0.005]	Indirect CI crosses 0 → not significant

Notes: a). coefficients are standardized (interpretation: a one-SD increase in IV is associated with a-SD change in mediator/outcome). p-values shown for decision making at α = .05.

b). Model fit / explanatory power: Full model (IVs + Trust + demographics) explains $R^2 \approx 0.52$ of variance in mobile banking adoption (MBA), which is substantial in behavioural IS research.

c). Collinearity check: VIFs for predictors ranged **1.10 – 2.30**, indicating no problematic multicollinearity.

Objective 1: *Examine the effect of fraud risk on mobile banking adoption with trust as a mediator*

The regression results show that fraud risk negatively predicted trust ($a = -0.320$, $p < .001$) and trust significantly predicted mobile banking adoption ($b = 0.410$, $p < .001$). The total effect of fraud risk on adoption was negative and significant ($c = -0.280$, $p < .001$), which reduced but remained significant when trust was introduced ($c' = -0.160$, $p = .008$). The indirect effect was significant ($a \times b = -0.131$; 95% CI [–0.180, –0.080]), confirming partial mediation. Fraud concerns undermine user trust, but trust still enables a portion of users to adopt mobile banking despite perceived risks. This aligns with Malaquias and Hwang (2016), who found fraud risk as a major deterrent in Brazil and with Omotosho (2021), who noted similar fraud anxieties among Nigerian users. Strengthening fraud detection systems and providing visible security assurances can bolster trust, which then mitigates the deterrent effect. The result supports the trust-extended TAM, where fraud risk (a barrier) decreases trust, yet trust remains a key pathway influencing adoption. Therefore, fraud risk is the strongest inhibitor, but trust partially buffers its impact, suggesting fraud mitigation is central to expanding mobile banking adoption.

Objective 2: Assess the effect of financial-loss risk on mobile banking adoption with trust as a mediator

Financial-loss risk negatively predicted trust ($a = -0.250$, $p < .001$) and trust predicted adoption ($b = 0.410$, $p < .001$). The total effect of financial-loss risk on adoption was significant ($c = -0.230$, $p = .002$) and reduced with trust ($c' = -0.120$, $p = .015$). The indirect effect was significant (–0.103; 95% CI [–0.150, –0.060]), indicating partial mediation. Concerns over financial loss reduce users' confidence, but when fintech providers foster trust such as through guarantees, compensation mechanisms and transparency adoption increases. Similar results were found in Nigeria by Anyanwu *et al.*, (2017), who highlighted consumer fear of irreversible loss as a barrier to fintech adoption. The findings demonstrated that trust mediates between risk perception and behavior, ant it is consistent with Pavlou's (2003) argument that trust compensates for vulnerabilities in digital environments. Therefore, financial loss concerns significantly discourage adoption, but trust-building measures like refund guarantees can soften the blow, facilitating greater user uptake.

Objective 3: Determine the effect of system-reliability risk on mobile banking adoption with trust as a mediator

System-reliability risk was weakly but significantly linked to lower trust ($a = -0.100$, $p = .038$) and adoption ($c = -0.190$, $p = .012$). When trust was introduced, the direct effect remained significant but weaker ($c' = -0.150$, $p = .030$). The indirect effect was small but significant (–0.041; 95% CI [–0.080, –0.010]), showing weak partial mediation. Frequent downtimes and transaction reversals erode confidence but do not completely deter adoption, especially when users trust providers to eventually resolve issues. NIBSS (2022) similarly reported that system unreliability contributes to customer frustration in Nigeria's digital payment ecosystem. This underscores the TAM's relevance technical quality matters, but its effect is filtered through the lens of trust. Therefore, system reliability is a moderate barrier, yet trust cushions its effect, showing that improving uptime and service consistency is critical for sustained adoption.

Objective 4: Investigate the effect of privacy risk on mobile banking adoption with trust as a mediator

Privacy risk did not significantly affect trust ($a = -0.050$, $p = .120$) or adoption ($c = -0.080$, $p = .090$). The indirect effect was also insignificant (-0.021; 95% CI [-0.050, $+0.005$]), suggesting no mediation. Unlike fraud or financial loss, privacy concerns do not strongly influence Nigerian users' trust or adoption decisions. Users appear more concerned with immediate financial safety than with abstract data privacy issues, echoing Omotosho (2021), who noted that Nigerians often overlook privacy in favor of convenience. While TAM extensions often stress privacy, this study suggests cultural and contextual priorities reshape its relevance in developing economies. Privacy risk is not a critical determinant of mobile banking adoption in Nigeria, indicating that interventions should prioritize fraud and loss risks over privacy concerns.

Objective 5: Evaluate the mediating effect of trust in the relationship between cybersecurity concerns and mobile banking adoption

Across fraud, financial-loss, and system-reliability risks, trust significantly mediated their effects on adoption, though privacy risk showed no mediation. This reinforces trust as a pivotal mechanism linking risk perception to adoption. Users are willing to adopt mobile banking if they trust providers to protect them, even in high-risk contexts. This validates trust as a linchpin variable in fintech ecosystems. The results strongly support the trust-extended TAM, highlighting trust as the psychological bridge that offsets cybersecurity concerns and sustains technology adoption. Therefore, trust is the cornerstone in reconciling cybersecurity concerns with adoption behaviors in Nigeria's mobile banking ecosystem, making it the most critical lever for policymakers and fintech operators.

Conclusion and Recommendations

Conclusion

This study examined the mediating effect of trust in the relationship between cybersecurity concerns and mobile banking adoption in Nigeria. Results demonstrated that fraud risk, financial-loss risk and system-reliability risk significantly discourage mobile banking adoption, but their negative effects are partially mediated by trust. Privacy risk, however, did not exert a significant effect, reflecting Nigerian users' prioritization of financial safety over abstract data concerns. Trust consistently emerged as the pivotal construct, transforming negative perceptions into a willingness to adopt mobile banking. Anchored on the trust-extended Technology Acceptance Model (TAM), the findings underscore that while cybersecurity concerns are barriers, trust is the linchpin that reconciles these risks with continued fintech usage. In a context where electronic fraud exceeded ₦14 billion in 2022 (NIBSS, 2022), this study contributes both theoretically by empirically validating trust as a mediator and practically, by providing insights for industry, regulators, and policymakers.

Recommendations

The following recommendations were made;

The **Central Bank of Nigeria (CBN)** must strengthen regulatory oversight by mandating the deployment of advanced fraud-detection and monitoring systems across all financial institutions. Given that fraud risk significantly erodes trust and suppresses mobile banking adoption, the apex regulator's leadership in ensuring compliance will be pivotal to restoring confidence in the digital financial ecosystem.

The **Deposit Money Banks (DMBs)** need to institutionalize comprehensive compensation and insurance frameworks that guarantee customers reimbursement in cases of unauthorized transactions or financial losses. Because concerns about financial loss were found to diminish adoption indirectly through reduced trust, banks that proactively protect their customers' financial safety can rebuild confidence and secure long-term engagement with mobile banking platforms.

The **Telecommunications Operators** are required to enhance digital infrastructure and prioritize uninterrupted service delivery. The weak but significant mediation effect of system reliability on adoption underscores the necessity of stable network connectivity as a foundation for consumer trust in mobile transactions. Investments in resilient infrastructure and adherence to stringent service continuity standards will therefore reduce system-related disruptions and reinforce adoption.

The **Mobile Banking Customers** themselves must embrace proactive data protection measures such as adopting robust passwords, enabling multi-factor authentication, and exercising discretion in data sharing. Since privacy concerns did not significantly shape adoption through trust in this study, customer-side responsibility becomes an indispensable complement to institutional safeguards, closing potential gaps that could otherwise threaten platform security.

Finally, the **Fintech Companies** must institutionalize transparent communication, ethical data practices, and rapid dispute-resolution mechanisms to sustain trust as the central mediator of cybersecurity concerns. Because trust remains the pivotal construct that mitigates the negative impact of fraud, financial loss, and reliability concerns on adoption, fintech's that place trust-building at the core of their strategies will secure competitive advantage and broaden financial inclusion in Nigeria.

References

Anyanwu, F. A., Ubi, H., & Ananwude, A. C. (2017). Trust and distrust determinants of mobile banking adoption in the Nigerian banking industry: A study of First Bank Nigeria Limited. *Asian Research Journal of Arts & Social Sciences, 3*(4), 1–25. https://doi.org/10.9734/ARJASS/2017/30589. (Nigeria-focused). ResearchGate+1

Cremer, F., & colleagues. (2022). Cyber risk and cybersecurity: A systematic review of data, methods and future directions. *Journal of Cybersecurity Research / PMC.* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8853293/. PMC

Davis, F.D (1989). A Technology Acceptance Model (TAM) for empirically testing new end-user information system. Theory and results. (doctoral dissertation, Massachusetts Institute of Technology). MIT Sloan School of Management

EFInA, (2023). The Enhancing Financial Innovation & Access report

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly, 27*(1), 51–90. https://doi.org/10.2307/30036519. Research Discovery

Isiaku, L. (2024). An empirical investigation into user attitudes and intentions for sustainable adoption of mobile financial services in Nigeria. *Journal of Information Technology & Digital Transformation (Emerald / JIDT).* https://doi.org/10.1108/JIDT-01-2024-0001. Emerald+1

Krejcie, R.V & Morgan D.W. (1970). Determining sample size for research activities. Educational and psychological measurement 30(3), 607-610

Malaquias, R. F., & Hwang, Y. (2016). An empirical study on trust in mobile banking: A developing country perspective. *Computers in Human Behavior, 54*, 453–461. https://doi.org/10.1016/j.chb.2015.08.039. DePaul University Research Portal

Nigeria Data protection act (2023). Nigeria Data protection commission report

Nigeria interbank settlement system (NIBSS, 2022). Cashless transactions rise to #395tn in 2022. NIBSS Report

Omotosho, B. S. (2021). Analysing user experience of mobile banking applications in Nigeria: A text-mining approach. *CBN Journal of Applied Statistics, 12*(1), 77–108. https://www.cbn.gov.ng/Out/2021/STD/77-108.pdf. (Nigeria-based). Central Bank of Nigeria

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the Technology Acceptance Model. *International Journal of Electronic Commerce, 7*(3), 101–134. https://doi.org/10.1080/10864415.2003.11044275. Taylor & Francis Online