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THE IMPACT OF MOBILE BANKING ADOPTION ON FINANCIAL INCLUSION

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Abstract

FinTech, especially mobile banking has become a key tool in expanding financial access, particularly in regions underserved by traditional banking. While developed countries focus on improving service use, mobile banking has driven major inclusion gains in emerging and frontier markets by overcoming cost and distance barriers. Despite high banking access in Sri Lanka, usage of digital financial tools remains low, partly due to limited IT literacy which is around 35% and trust concerns. This study examines whether mobile banking awareness, accessibility, digital skills and trust influence financial inclusion using survey data from 220 bank customers in Puttalam district. Statistical analysis is carried out using SPSS 25.0 version and the results show all four factors significantly support inclusion with trust and digital literacy having the strongest effects. The findings suggest mobile banking can effectively promote financial inclusion, but success relies on improving user knowledge, digital skills and confidence in digital systems. The research fills a gap in the frontier market and offers clear direction for policies and FinTech strategies aimed at inclusive financial growth.

Keywords: *Financial Inclusion, FinTech, Mobile Banking, Frontier Markets, Digital Literacy, Trust*

Introduction

Access to affordable and reliable financial services is regarded as a foundation of inclusive economic development, enabling individuals and businesses to save,

make payments, access credit and manage risk (Al-Smadi, 2025; Sethi et al., 2025). Financial inclusion is the availability and usage of useful and affordable financial products, has gained renewed global attention with the rapid rise of financial technology (Fintech) (Ha et al., 2025). Over the last decade, FinTech innovations such as mobile banking, mobile money, digital payments and algorithmic lending have lowered barriers to financial access by leveraging digital infrastructure (World Bank, 2022). These services have facilitated account ownership for millions of unbanked individuals, expanding the reach of the formal financial system throughout developing and frontier markets (Mashoene et al., 2025).

FinTech related research evidence that digital financial services can reduce income inequality by enhancing economic participation among low income groups (Ozili, 2024). International bodies including G20 and United Nations emphasize digital finance within policy frameworks aimed at achieving inclusive growth and meeting the Sustainable Development (United Nations, 2019). Even in advanced economies, where account ownership exceeds 90%, persistent demographic gaps in digital literacy and trust demonstrate that the digital financial inclusion remains a challenge, particularly among older adults and technologically vulnerable populations (Anupama & Sengupta, 2025).

In contrast, emerging and frontier economies illustrate the transformative potential of mobile based financial services. Kenya's M-Pesa remains a seminal platform. According to Suri and Jack (2016) reveals that expanded access, mobile money lifted approximately 194,000 Kenyan households which is around 2% of the population, out of extreme poverty by improving income stability and enabling transactions into small scale entrepreneurship. Similar gains have been observed in India and China, where rapid growth in mobile payments and digital banking ecosystems has supported large scale improvements in transactional efficiency and account usage (World Bank, 2022; Ouyang et al., 2023; He et al., 2025).

Despite these advances, FinTech driven inclusion remains uneven. Many developing countries continue to face structural constraints, including weak digital infrastructure, affordability issues, low digital skills and concerns about fraud which limit uptake of mobile financial services (Ozili, 2025; Mishra et al., 2024), These patterns indicate that technology alone does not guarantee inclusion, rather the enabling environment, comprising digital literacy, service accessibility, consumer trust and regulatory protection, plays a central role in determining actual usage (Ozili, 2025).

Sri Lanka presents an instructive case. The country has high literacy rates and strong mobile penetration and formal account ownership reached 89% by 2021, up from 68% in 2017 (World Bank, 2022). However, mobile usage remains extremely low around 3% of adults, revealing a gap between access to accounts and active, meaningful financial inclusion. Prior studies highlight several adoption barriers such as limited digital literacy, security and trust concerns related to fraud and data misuse, low awareness of mobile banking features and benefits and infrastructural constraints such as unreliable network coverage in rural areas (Jayakody et al., 2023; Dewasiri et al., 2025; Silva & Rasanjalee, 2025). These

findings suggest that Sri Lanka's progress in expanding formal financial access has not automatically translated into widespread usage of mobile financial services.

Existing empirical work on Sri Lanka analysed specific determinants of mobile banking adoption such as perceived use and service (Jayakody et al., 2023; Kumari & Tharanga, 2021; Ruwini & Pushpika, 2024; Rajaratnam, 2020). While valuable, these studies investigate individual factors in isolation or focus on national level patterns. As a result, there is limited understanding of how multiple drivers simultaneously influence financial inclusion in specific subnational area, specially rural or semi urban districts that differ significantly from urban centers.

The study addresses that gap by examining the Puttalam District, an area with a substantial underbanked population and a mix of rural and semi urban communities. The research question is " Does mobile banking adoption impact financial inclusion in Puttalam district?". Hence, the objective of the study is to investigate whether mobile banking usage influences financial inclusion in Puttalam and to determine the roles of four key variables which are user awareness, service accessibility, digital literacy and trust/ security perspectives. This is supported by literature where mobile banking can enhance inclusion when the technological environment is supported by adequate user capabilities and institutional safeguards.

The study contributes by extending FinTech inclusion into a frontier market setting and can inform policymakers, financial institutions and development partners seeking to improve digital finance adoption in Sri Lanka. Understanding which factors matter for converting high mobile phone penetration into meaningful and sustained financial inclusion is critical as the country navigates its digital transformation and broader economic recovery.

Literature Review

Diffusion of Innovation Theory

This explains how mobile banking adoption spreads across different user groups over time, emphasizing that perceived benefits, ease of use and social influence determine the speed and extent of adoption (Rogers, 2003). This perspective is relevant in developing and rural areas, where socioeconomic status, education and technological familiarity influence adoption patterns.

Financial Intermediation Theory

This highlights the role of financial institutions in reducing transaction costs and improving access to financial services. Mobile banking extends this role by offering cost effective digital financial services without reliance on physical banking infrastructure and expanding access to savings, payments and credit in underserved regions (Scholtens & van Wensveen, 2000; World Bank, 2022).

Technology Acceptance Model

This explains mobile banking adoption through perceived usefulness and perceived ease of use. Users are more likely to adopt when applications are simple, secure and improve the efficiency of financial activities (S. Sharma & Khurana,

2023). Further, inclusive design features, trust and customer support further increase the usage (GSMA, 2023).

Unified Theory of Acceptance and Use of Technology

This integrates technological, social and institutional factors, emphasizing performance expectancy, social influence and facilitating conditions as key determinants of adoption. This helps to understand how social norms, infrastructure quality and institutional support shape mobile banking usage across different demographic groups (Williams et al., 2015; Sharma & Sharma, 2019).

FinTech and Financial Inclusion

Financial inclusion aims to ensure individuals and businesses can assess and use formal financial services such as payments, savings, credit and insurance. The rise of digital finance has changed how this goal is pursued. The rise of digital finance has changed how this goal is pursued. Global Findex 2021 shows that account ownership increased from 51% of adults in 2011 to 76% in 2021, with much of this growth driven by mobile and other digital channels in developing economies (World Bank, 2022; Yang & Zhang, 2020).

FinTech services, including mobile banking, mobile wallets, agent banking and digital lending, lower transaction costs and reduce dependence on physical branches. Evidence shows that digital financial inclusion can expand access and improve usage among low income and previously excluded groups (World Bank, 2022; Liu et al., 2023).

At macro level, several studies link digital financial inclusion to lower income inequality and poverty risk. Analyses of cross country and household level data find that digital financial inclusion can reduce vulnerability to relative poverty by easing credit constraints, smoothing consumption and supporting income generating activities (Liu & Guo, 2023; Tomczyk et al., 2023). However, these gains are not automatic. The strength of the link between FinTech and inclusion depends on digital infrastructure, affordability, financial literacy and regulation. Where networks are weak or digital divide is wide, FinTech can deepen gaps as urban and educated users benefit first

Developed Market

In most high income economies, basic financial access is already near universal, over 95% of adults hold an account (World Bank, 2022). Fin Tech mainly improves convenience, speed and cost rather than basic access. Digital and mobile banking have become standard, and banks use these channels to cut branch costs and offer real time services.

However, research shows that some groups in rich countries remain digitally vulnerable. Older adults in particular adopt FinTech more slowly and face barriers such as low digital literacy, security concerns, design issues and technology anxiety. A study synthesizing more than two hundred research work on older adults and FinTech highlights persistent usability and trust problems and calls for age

sensitive design and targeted training (Anupama & Sengupta, 2025). Studies on mobile banking among elderly users find that technology anxiety depresses continued use, while familiarity and social support from family, peers and community training improve digital engagement (Han & Ko, 2025). Rural communities in advanced economies can also be affected by unreliable broadband, showing that infrastructure and skills remain important even where basis banking access is high. Hence, in developed economies Fintech literature moves beyond access to focus on digital inclusion, making sure that all segments, especially seniors, low income households and rural residents can use digital services safely and confidently.

Emerging and Frontier Markets

In many emerging markets, mobile phones enabled a surge in financial access. Evidence from Kenya's M-Pesa illustrates how mobile money can improve welfare and economic opportunities in emerging markets (Suri & Jack, 2016). Mobile money improved risk sharing and occupational choice, helping women move from subsistence farming into business. GSMA (2024) reports rapid growth of mobile money across Sub Saharan Africa and parts of Asia. Large emerging economies have combined policy and Fin Tech to scale inclusion. In India, the Jan Dhan Aadhaar mobile (JAM) stack and Unified Payments Interface (UPI) helped raise account ownership, with digital payments widely used by new account holders (World Bank, 2022). In China, Alipay and Wechat Pay integrate payments, credit, insurance and investment in a single app ecosystem, extending financial services to small merchants and individuals with limited prior access to bank credit (Liu et al., 2023). Studies on emerging markets also stress risks. When regulation is weak, digital credit can trigger over indebtedness, and when literacy is low, users may not understand fees, terms or privacy risks (Ahmed et al., 2024; Ozili, 2024; Kodongo, 2024; Osabutey & Jackson, 2024).

Frontier markets combine weak banking infrastructure with growing mobile phone penetration, making mobile finance a tool for expanding formal financial access. The study shows how simple USSD interfaces and extensive agent networks can increase mobile money uptake in rural and low income communities and show that awareness building and locally embedded agents improve trust and enable users to translate access into higher savings and better shock coping capacity (Lee et al., 2022). However, weak telecom infrastructure, intermittent electricity and high data costs limit regular use while low financial and digital literacy restrict the understanding of fees, terms and security practices. Regulatory barriers such as strict KYC requirements and slow fintech policy reforms can delay onboarding. Long stanging socia cultural preferences for cash and informal saving methods reduce adoption among older and rural communities (Albuainain & Ashby, 2025).

Sri Lanka differs from many frontier markets in having a relatively developed banking sector and high formal account ownership (World Bank, 2022) . Although smart phone penetration is high, mobile banking adoption remains modest and

many account holders continue to withdraw income in cash and few use their accounts for digital payments or savings.

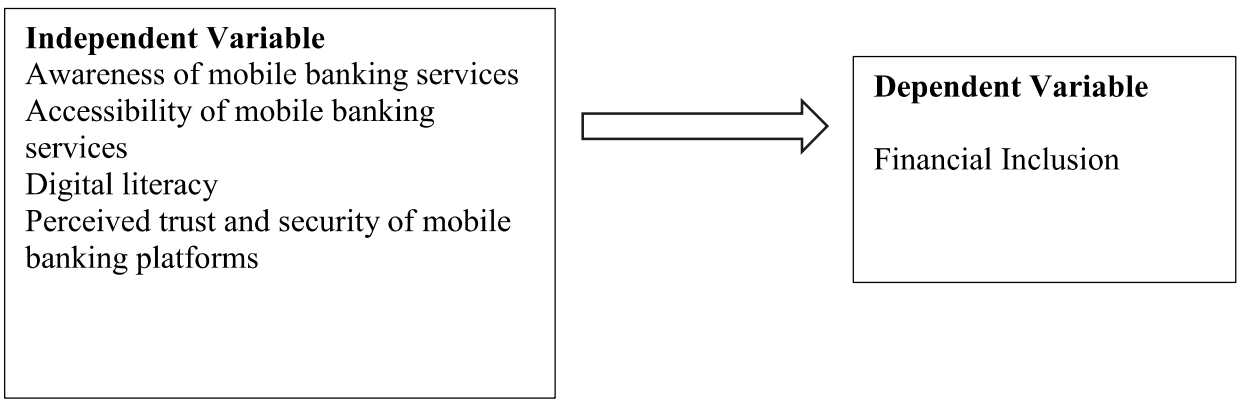
Research identifies four themes shaping mobile banking usage. Awareness remains uneven where many rural and older adults lack knowledge of available mobile banking features or perceive little benefit unless prompted by external shocks such as COVID 19 (Aker, 2010; Khatun et al., 2024). Next digital literacy predicts adoption, individuals with higher comfort using smartphones and online forms adopt mobile banking more readily while those with lower digital skills rely on physical branches or ATMs(Adel, 2024; Mishra et al., 2024). Trust and perceived security remain major barriers, concerns about phishing, mistaken transfers, data privacy and fraud persist despite banks implementing two factor authentication and real time alerts Ozili, 2025). Accessibility constraints such as inconsistent network quality, distance to cash out points and unenven agent/ ATM distribution, affect rural users' ability to integrate mobile banking into daily financial behavior (Kattan-Rodríguez & Galindo-Manrique, 2025).

Empirical evidence linking mobile banking to deeper financial inclusion in Sri Lanka is still developing. Recent studies indicate that mobile financial services can increase formal financial usage, with perceived usefulness, ease of use, social influence and even user enjoyment driving adoption. Hence, mobile banking could strengthen financial inclusion, but its impact is currently limited by low awareness, uneven digital skills, trust concerns and infrastructure gaps.

Drawing from the evidence, the present study formulates a set of hypotheses as follows:

- H1: Mobile banking adoption significantly impacts financial inclusion.
- H1a: Awareness of mobile banking significantly impacts financial inclusion.
- H1b: Accessibility of mobile banking services significantly impacts financial inclusion
- H1c: Digital literacy significantly impacts financial inclusion
- H1d: Perceived trust and security of mobile banking platforms significantly impact financial inclusion.

Conceptual Framework



Operationalization

Table 01: Operationalization

Concept	Variables	Indicators	Measurement	Sources
Mobile Banking (Independent Variable)	**Awareness of mobile banking** (Aker, 2010)	• Percentage of individuals who know about mobile banking services. • Awareness of specific features. • Knowledge of mobile banking service providers in the area. • Sources of awareness.	Questionnaires Q1–Q4	Aker, 2010; Khatun et al., 2024
	Accessibility to mobile banking services	• Availability of mobile network coverage in the area. • Percentage of individuals with smartphone ownership. • Cost of internet/mobile data plans and affordability. • Physical barriers to access.	Questionnaires Q5–Q8	Kattan-Rodríguez & Galindo-Manrique, 2025
	Digital literacy	• Ability to operate smartphones and download/use apps. • Frequency of internet usage for -various tasks. • Confidence in using mobile banking apps independently. • Completion of any digital literacy training programmes.	Questionnaires Q9–Q12	Adel, 2024; Mishra et al., 2024
	Perceived trust and security of mobile banking platforms (Ozili, 2025)	• User perception of the safety of mobile banking transactions • Concerns about data privacy and identity theft. • Satisfaction with the bank's security-related customer support. • Usage of security features such as two-factor authentication.	Questionnaires Q13–Q16	Ozili, 2025
Financial Inclusion (Dependent Variable)	**Level of financial inclusion**	• Access to banking services. • Frequency of banking transactions • Savings account ownership. • Use of financial products.	Questionnaires Q17–Q20	Adel, 2024; Mishra et al., 2024

Research Methodology

The study employs a quantitative, cross sectional survey design to analyze whether mobile banking adoption impacts financial inclusion in the Puttalam District of Sri Lanka. Using a deductive approach, primary data is collected and analyzed. The target population of the study is all customers of licensed commercial banks in Puttalam District who maintain accounts or use banking services. Using a stratified sampling method, the sample for this study consisted of 220 banking customers from the Puttalam District of Sri Lanka. The sample was proportionately drawn from major banking institutions operating in the district to ensure adequate representation across banks. Accordingly, the sample included 50 customers from Bank of Ceylon, 30 from Hatton National Bank, 30 from People's Bank, 30 from Commercial Bank of Ceylon, 30 from Sampath Bank, and 50 customers from other commercial banks in the Puttalam District. Data were analyzed using SPSS. Descriptive statistics, construct validity using Kaiser Meyer Olkin (KMO) and Bartlett's test of sphericity, internal consistency using Cronbach's alpha, Correlation test, and multiple regression analysis are carried out.
The following regression equation is formulated.

The model evaluates whether each factor related to mobile banking adoption impacts financial inclusion. Model fit, the significance of individual coefficients and multicollinearity test were used to assess the robustness of the results.

Analysis

Sample profile

Gender

Table 02: Gender of Respondents (n = 220)

Gender	Frequency	Percentage (%)
Male	145	65.9
Female	75	34.1
Total	**220**	**100**

Table 02 shows that around 66% of the respondents are male.

Age Group

Table 03: Age group of Respondents (n = 220)

Age group	Frequency	Percentage (%)
Below 25	13	5.9
25–35	104	47.3
36–45	67	30.5
Above 45	36	16.4
Total	**220**	**100**

Table 03 indicates that around 78% of the respondents are from the age category of 25 to 45.

Civil Status

Table 04: Civil Status of Respondents (n = 220)

Civil status	Frequency	Percentage (%)
Married	176	80
Unmarried	44	20
Total	**220**	**100**

Table 04 shows that 80% of the respondents are married.

Education Level

Table 05: Civil Status of Respondents (n = 220)

Educational level	Frequency	Percentage (%)
Up to GCE O/L	48	21.8
Up to GCE A/L	80	36.4
Diploma	72	32.7
Degree	20	9.1
Total	**220**	**100**

Table 05 indicates that participants are moderately educated.

Validity of Measures

Construct validity was assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity for each multi-item scale.

Table 06: KMO and Bartlett's Test

Variable	No. of items	KMO	Bartlett's Sig.	Decision
Awareness of mobile banking	4	0.738	0	Acceptable
Accessibility to mobile banking	4	0.723	0	Acceptable
Digital literacy	4	0.772	0	Acceptable
Perceived trust & security of mobile banking platforms	4	0.679	0	Acceptable
Financial inclusion	4	0.749	0	Acceptable

Table 06 displays that all KMO values exceed 0.60, and Bartlett's tests are significant at $p < 0.001$, indicating that the item sets are suitable for factor analysis and that there are adequate inter-correlations among items. The measurement instruments therefore demonstrate acceptable construct validity.

Reliability of Measures

Internal consistency of the scales was examined using Cronbach's alpha.

Table 07: Reliability Statistics

Variable	Cronbach's α	No. of items
Awareness of mobile banking	0.741	4
Accessibility to mobile banking	0.728	4
Digital literacy	0.79	4
Perceived trust & security of mobile banking platforms	0.754	4
Financial inclusion	0.732	4

According to Table 07, all alpha values fall between 0.73 and 0.79, which is above the commonly accepted 0.70 threshold. This indicates that each construct is measured reliably, with good internal consistency among items.

Descriptive Analysis

Descriptive statistics were calculated for the five main variables awareness, accessibility, digital literacy, perceived trust and security, and financial inclusion.

Table 08: Descriptive Statistics

Variable	Median	Mean	Minimum	Maximum	Std. Deviation
Awareness of mobile banking	4.25	3.983	1.75	4.75	0.73014
Accessibility to mobile banking	4.25	3.9534	1.75	5	0.73818
Digital literacy	4.25	3.975	1.5	5	0.76035
Perceived trust & security of mobile banking platforms	4.25	4.0545	1.5	4.75	0.74514
Financial inclusion	4.25	3.9716	1.5	4.75	0.74832

Table 08 shows that the mean values of all variables are closer to 4 on a 5-point scale, with a median of 4.25, indicating generally high awareness of mobile banking, good accessibility, relatively strong digital literacy, high perceived trust and security, and a high level of financial inclusion among respondents. The standard deviations, which are around 0.73 to 0.76 indicate moderate variability, suggesting that while most respondents score relatively high on these dimensions, there remains a minority with lower levels.

Correlation Analysis

Table 09: Correlation Matrix

Variable	Awareness of mobile banking	Accessibility to mobile banking	Digital literacy	Perceived trust & security	Financial inclusion
Awareness of mobile banking	1				
Accessibility to mobile banking	0.821**	1			
Digital literacy	0.806**	0.770**	1		
Perceived trust & security	0.859**	0.786**	0.853**	1	
Financial inclusion	0.849**	0.807**	0.859**	0.873**	1

According to Table 09, all four independent variables display strong, positive and statistically significant correlations with financial inclusion (r ranging from 0.807 to 0.873, $p < 0.01$). This indicates that higher awareness, better accessibility, greater digital literacy and stronger perceived trust and security are each associated with higher levels of financial inclusion. Correlations among the predictors themselves are also high, reflecting conceptual relatedness and suggesting possible multicollinearity, which is examined further in the regression analysis.

Multiple Regression Analysis

To test the hypotheses regarding the joint and individual effects of the four mobile banking factors on financial inclusion, a multiple linear regression model was estimated with financial inclusion as the dependent variable.

Model Summary

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.915	0.837	0.834	0.30528

Table 10 shows that the model explains 83.7% of the variance in financial inclusion ($R^2 = 0.837$), with an adjusted R^2 of 0.834. This indicates a very strong explanatory power, suggesting that the four mobile banking dimensions jointly account for most of the variation in financial inclusion among respondents.

ANOVA

Table 11: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	102.598	4	25.65	275.23	0
Residual	20.037	215	0.093		
Total	122.635	219			

Table 11 shows that the overall regression model is highly significant ($F(4, 215) = 275.23$, $p < 0.001$). This confirms that the set of predictors, taken together, provides a statistically significant explanation of financial inclusion.

Regression Coefficients and Multicollinearity

Table 12: Regression Coefficients and VIF

Predictor	B	Std. Error	Beta	t	Sig.	VIF
Constant	0.036	0.121	–	0.293	0.77	–
Awareness of mobile banking (AwMB)	0.208	0.063	0.203	3.299	0.001	4.973
Accessibility to mobile banking (AcMB)	0.159	0.052	0.157	3.055	0.003	3.478
Digital literacy (DL)	0.301	0.055	0.306	5.45	0	4.156
Perceived trust & security of mobile banking platforms	0.316	0.064	0.315	4.91	0	5.399

According to Table 12, the regression results show that all four mobile banking variables significantly contribute to financial inclusion, while the constant term is not meaningful. Among the predictors, perceived trust and security ($\beta = 0.315$, $p < 0.001$) and digital literacy ($\beta = 0.306$, $p < 0.001$) exhibit the strongest effects, indicating that users' confidence in mobile platforms and their digital capabilities are key determinants of financial inclusion. Awareness ($\beta = 0.203$, $p = 0.001$) and accessibility ($\beta = 0.157$, $p = 0.003$) also positively influence inclusion, though to a slightly lesser extent. Variance Inflation Factor values between 3.48 and 5.40 suggest moderate but acceptable multicollinearity, confirming that despite the interrelated nature of the predictors, the overall model remains robust and valid.

Discussion

Awareness and Financial Inclusion

Awareness of mobile banking services demonstrated a significant positive relationship with financial inclusion ($\beta = 0.203$). This is supported by diffusion of innovation theory, which shows that awareness and knowledge are important in technology adoption process. Individuals who are more informed about mobile banking features are more likely to use digital financial services actively. The result aligns with studies conducted globally, which consistently show that awareness

campaigns, especially through banks and telecom operators, enhance user engagement and digital account usage (Khatun et al., 2024; Sarker et al., 2024; Addula, 2025). In rural and semi-urban settings like Puttalam, limited exposure to digital finance can restrict uptake; therefore, improving awareness remains a foundational requirement for inclusive digital finance.

Accessibility and Financial Inclusion

Accessibility also showed a significant positive effect (β = 0.157), confirming that the ease of accessing mobile banking platforms, through reliable network connectivity, affordable data, and available agents or ATMs, enables users to participate more fully in the formal financial system, which is in line with the theory of financial intermediation. This supports findings from emerging and frontier market research, where digital infrastructure and last-mile service delivery are central determinants of successful adoption (GSMA, 2024). Although Sri Lanka's telecom infrastructure is relatively advanced, disparities still exist across districts, and the results indicate that logistical and technical barriers continue to shape the inclusiveness of digital finance in Puttalam.

Digital Literacy and Financial Inclusion

Digital literacy recorded one of the strongest standardized effects (β = 0.306), underscoring its importance in determining whether users can effectively adopt and benefit from mobile banking which is supported by technology acceptance theory. This finding aligns with evidence from Sri Lankan and global studies that emphasize digital capability as a prerequisite for meaningful financial inclusion (Adel, 2024; Mishra et al., 2024). Individuals with better digital skills are more confident navigating mobile apps, conducting transactions, and managing digital risks. In Puttalam, where digital skills vary widely across age and education groups, enhancing digital literacy can significantly expand the inclusive potential of mobile banking.

Perceived trust and security and Financial Inclusion

Perceived trust and security exerted the strongest effect on financial inclusion (β = 0.315), slightly surpassing digital literacy. This validates the argument that even when infrastructure and digital skills are sufficient, users will not adopt mobile banking unless they believe the system is secure. This is supported by unified theory of acceptance, theory of technology acceptance and diffusion of innovation. Concerns about fraud, data breaches, and mistaken transactions remain widespread in Sri Lanka, consistent with prior research (Anupama & Sengupta, 2025; Ozili, 2025). Trust-building measures, such as two-factor authentication, transparent communication, and effective customer support, are therefore critical in strengthening user engagement. The strong influence of trust suggests that psychological and perceptual factors are just as important as technical access in driving digital financial inclusion.

Implications

Theoretical Implications

This study contributes to the broader literature on digital financial inclusion in several meaningful ways. First, it provides empirical evidence for an integrated model, showing how awareness, accessibility, digital literacy, and trust operate together to shape financial inclusion. Previous Sri Lankan studies examined these factors individually, but the present study demonstrates the importance of analysing them simultaneously.

The findings also show that psychological and capability-related factors, particularly trust and digital literacy, have stronger effects than structural factors like accessibility. The study offers context-specific insights by presenting district-level evidence. While Sri Lanka has high national account ownership, meaningful financial inclusion varies across regions. The results highlight how local infrastructure, socio-economic conditions, and digital capability shape financial inclusion outcomes in semi-urban and rural settings like Puttalam.

Practical Implications for Financial Institutions

The results present several practical implications for banks and mobile financial service providers. Strengthening user awareness is essential, as many individuals still lack understanding of mobile banking features and benefits. Banks can address this through targeted outreach programmes, demonstrations, and clear communication strategies.

Improving the user experience is equally important. Simple interfaces, multiple language options, and accessible customer support can help first-time and low-literacy users engage more confidently with mobile banking. Expanding agent networks and ATM coverage remains vital for customers who still rely on cash.

Digital literacy enhancement should be a priority. Partnerships with schools, local authorities, and community organisations can help deliver digital training. In-app tutorials and easy-to-follow guides can further support new users.

Building trust is essential for sustained usage. Visible security features, quick fraud-handling mechanisms, and transparent communication can reduce fear and encourage active engagement with mobile banking platforms.

Policy Implications

The findings also suggest important implications for policymakers and regulators. Sustained investment in digital infrastructure is required to improve network coverage and reduce data costs, particularly in rural and underserved regions.

Digital and financial literacy should be integrated into national education and community training programmes. This approach aligns with global strategies for inclusive digital finance.

Stronger consumer protection frameworks are needed to enhance trust. Clear procedures for fraud resolution, data protection, and dispute management can significantly increase user confidence in mobile banking.

Policies supporting interoperability across banking platforms and expanded agent networks can address last-mile challenges. These measures would make mobile banking more convenient and accessible for communities like Puttalam.

Limitations

Despite its contributions, the study has several limitations. The geographical focus on Puttalam District restricts the generalisability of findings to other regions with different economic or demographic characteristics. The use of a cross-sectional design limits the ability to examine behavioural changes over time or evaluate long-term trends in mobile banking adoption. Data were collected through self-reported questionnaires, which may introduce biases such as recall error or socially desirable responses, particularly for variables like digital literacy or trust. The sample includes only bank customers, thereby excluding unbanked individuals who may face entirely different barriers to financial inclusion.

Directions for Future Research

Future studies could benefit from longitudinal designs that trace mobile banking behaviour and financial inclusion outcomes over time. Expanding research to multiple districts or conducting a national-level analysis would strengthen generalisability and allow comparison across regions. Incorporating qualitative methods, such as interviews or focus groups, would provide deeper insights into user perceptions, trust, and behavioural motivations. Exploring moderating effects of demographic variables such as gender, income, or occupation could reveal important subgroup differences in digital financial inclusion. Finally, assessing the effectiveness of digital literacy programmes, awareness campaigns, or policy reforms through experimental or quasi-experimental designs would offer valuable evidence for improving digital inclusion strategies.

Conclusion

This study demonstrates that mobile banking plays a significant role in promoting financial inclusion in the Puttalam District. Awareness, accessibility, digital literacy, and perceived trust and security each contribute to shaping users' participation in digital finance, with digital literacy and perceived security emerging as particularly influential. While Sri Lanka has made substantial progress in improving formal financial access, genuine inclusion depends on users' ability and confidence to use digital financial services effectively. The findings highlight the need for human-centred strategies alongside technological enhancements. Strengthening trust, improving digital capabilities, and ensuring reliable access will support more equitable financial participation across rural and semi-urban communities. Overall, the study confirms that mobile banking can serve as a powerful tool for inclusive finance when supported by a conducive digital and regulatory environment.

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