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FinTech as a Tool for Financial Inclusion: A Study Among Unbanked Populations in Rural TamilNadu

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Abstract

Specifically among underprivileged and unbanked communities in rural regions, financial technology, or FinTech, has become a revolutionary force in advancing financial inclusion. This study investigates how FinTech may be used to improve financial inclusion in rural Tamil Nadu's unbanked communities. These groups frequently rely on unofficial financial institutions because to limited access to traditional banking infrastructure, which leaves them open to financial instability and abuse. The study looks into the perceived advantages, adoption trends, awareness, and difficulties of FinTech services such digital wallets, peer-to-peer lending platforms, mobile banking, and Aadhaar-enabled payment systems. Using primary data gathered from structured interviews and surveys with respondents in certain rural regions, a qualitative and quantitative method was used. The study outlines the main determinants of FinTech acceptance, such as perceived ease of use, digital literacy, social impact, accessibility, and confidence in digital systems. It also draws attention to important obstacles such limited technology familiarity, procedural complexity, lack of internet access, and fear of fraud. The results highlight the necessity of community-based financial education, focused digital literacy initiatives, and user-friendly technology design in order to close the digital gap. Policymakers, financial institutions, and technology providers seeking to establish inclusive, accessible, and safe digital financial ecosystems for rural communities will benefit greatly from this research's understanding of the behavioural and structural dynamics of FinTech adoption.

Keywords: FinTech, Unbanked population, Investment Scheme

Introduction

A key component of economic growth is financial inclusion, which is the availability of timely and reasonably priced financial services like banking, credit, insurance, and investing. **Over 190 million adults in India** are still unbanked, with a disproportionately high number living in rural regions, despite the country's swift digital development. While digital penetration is high in Tamil Nadu's urban areas, such as Chennai and Coimbatore, access to formal banking institutions remains difficult in the state's rural districts.

Financial access has been transformed by the emergence of Financial Technology (FinTech), which includes digital wallets, UPI, micro lending apps, mobile banking, and payment systems facilitated by Aadhaar. Particularly for groups disadvantaged by physical branches, fintech platforms provide affordable, scalable, and user-friendly alternatives to traditional banking.

FinTech acceptance among rural unbanked people is still patchy, nevertheless. Widespread use is hampered by issues like insufficient digital literacy, inadequate internet connectivity, language difficulties, and mistrust of digital systems. Designing inclusive financial ecosystems requires an understanding of the behavioural, cognitive, and infrastructure factors that influence FinTech adoption.

In order to examine how FinTech might be used as a tool for financial inclusion, this study focuses on adults in rural Tamil Nadu who do not have bank accounts. It investigates adoption trends, perceived advantages, usage hurdles, and knowledge levels, offering useful information to banks, FinTech companies, and policymakers.

India's Fintech and Financial Inclusion History

Government programs like Digital India, Pradhan Mantri Jan Dhan Yojana (PMJDY), and Unified Payments Interface (UPI) have propelled the exponential growth of fintech in India. Over 11 billion transactions are processed via UPI each month as of 2024, and its use is growing in Tier-2 and Tier-3 cities.

Key FinTech Tools Include

Mobile wallets (Paytm, PhonePe, Google Pay): By facilitating quick, cashless transactions via smartphones, mobile wallets have completely changed digital payments in

rural Tamil Nadu. They are a popular option for daily wage workers and small businesses due to their broad merchant acceptance and integration with UPI.

Digital banking apps such as BHIM and India Post Payments Bank (IPPB): These apps provide low-cost, government-backed banking services, improving financial access in rural areas. In order to increase inclusivity, these platforms are made to be as simple as possible while supporting regional languages and entry-level mobile phones.

The Aadhaar Enabled Payment System (AEPS) does not require cell phones or internet access to conduct biometric-based banking transactions. Because it makes services like cash withdrawal and balance inquiries possible, it works especially well in remote locations with limited access to traditional banking infrastructure.

Micro-Investment and Insurance applications (Paytm Insurance, Policybazaar): These applications provide flexible, low-cost insurance and investment options for those with modest incomes. With little paperwork and doorstep assistance, they enable rural communities to control risks and develop financial resilience.

Peer-to-Peer Lending Platforms: For unbanked business owners without access to official loans, P2P platforms offer substitute sources of finance. They lessen reliance on moneylenders and advance financial inclusion through decentralized finance by putting lenders and borrowers in direct contact.

Despite this expansion, acceptance is slower in rural regions. Just 48% of Tamil Nadu's rural households frequently use digital payment methods, according to the **RBI Financial Inclusion Index** and **The National Family Health Survey (NFHS-5).** Among the obstacles

1. The absence of smartphones
2. Poor digital skills and literacy
3. Inadequate network access
4. Concern over online fraud
5. Preference for transactions with cash

By examining the structural and behavioural elements affecting FinTech adoption among rural unbanked people, this study seeks to close the gap.

Understanding Fintech Adoption is Critical for

- **Creating inclusive financial products:** Financial institutions and fintech businesses can create products that are easy to use, accessible, and culturally appropriate for unbanked and rural people by having a better understanding of FinTech adoption. It guarantees that services are customized to meet the requirements, reading levels, and usage habits of various user groups.

- **Reducing financial exclusion:** Policymakers may detect and resolve structural obstacles including poor connectivity, distrust, and digital illiteracy by using insights about adoption behaviour. This makes it easier to implement focused interventions that support fair access to financial services, particularly for underserved populations.

- **Improving rural families' economic resilience:** Once the adoption of FinTech is fully understood, solutions can be created to assist rural households in managing income fluctuations, obtaining credit, and safely accumulating savings. Thus, digital financial tools can enhance long-term financial stability and serve as a buffer against economic shocks.

- **Encouraging the delivery of government welfare:** Comprehending adoption trends guarantees the effective delivery of government subsidies and benefits via digital channels such as AEPS and UPI. This guarantees prompt and direct benefit transfer by lowering leaks, delays, and reliance on middlemen.

- **Encouraging women's financial independence:** Research on FinTech adoption identifies gender-specific obstacles include limited digital confidence, societal constraints, and device ownership. By addressing these, women can gain autonomous financial management, increasing their ability to make decisions and engage in the economy.

Examining this section provides information about

- Cultural pushback to the shift to digital
- Community leaders' engagement in adoption
- Digital disparities depending on gender
- The efficiency of digital schemes pertaining to the government

Visions for the Study

1. To learn how FinTech services are used by educated and often rural unbanked communities
2. To determine the main drivers of FinTech adoption.
3. To investigate the obstacles to financial inclusion through digital means.
4. To examine how socioeconomic and demographic characteristics affect the use of FinTech.
5. To create a forecasting model for the uptake of FinTech.

Theoretical Foundation

By examining accepted ideas and earlier research, theoretical background offers the conceptual underpinnings for comprehending the study topic. The theoretical foundation of FinTech as a Tool for Financial Inclusion: A Study among Unbanked Populations in Rural Tamil Nadu is based on important concepts of financial behaviour and technology adoption.

Davis (1989) developed the **Technology Acceptance Model (TAM)**, which is extremely pertinent to comprehending FinTech adoption as it emphasizes how perceived utility and usability impact a person's desire to accept technology. In support of this, the **Unified Theory of Acceptance and Use of Technology (UTAUT)** identifies social influence, performance expectancy, effort expectancy, and facilitating conditions as important factors that influence technology use, particularly in rural areas where infrastructure and peer pressure are crucial.

Adoption is further explained by the **Theory of Planned Behavior (TPB)** in terms of attitude, perceived behavioural control, and subjective standards. Furthermore, the preference for secure, well-known financial instruments over digital alternatives can be explained by behavioural economics concepts like risk and loss aversion. The World Bank's Financial Inclusion Framework highlights that trust and utilization must go hand in hand with access. Last but not least, the Digital Divide Theory highlights inequalities in access brought on by socioeconomic, educational, and infrastructure issues, while the **Diffusion of Innovations Theory** (Rogers, 1962) describes how new technologies spread via social systems. The study's emphasis on awareness, trust, digital literacy, and hurdles is supported by these theories taken together, which offer a strong basis for examining how unbanked rural communities adopt FinTech.

Plan of Research

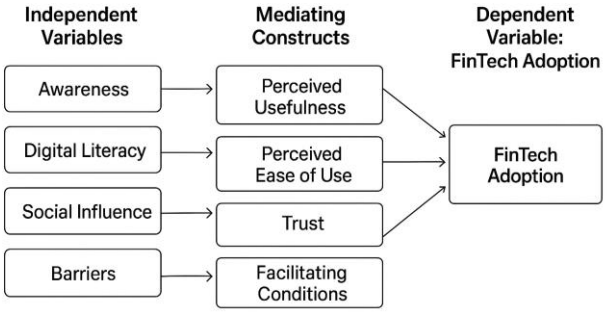


Figure 1: Research Context for Rural Unbanked Populations to Adopt FinTech

1. The framework demonstrates how important elements like awareness, digital literacy, social impact, and accessibility affect the adoption of fintech.
2. These influence how consumers see usefulness, usability, and trustworthiness, all of which influence actual adoption.
3. Adoption is adversely affected by obstacles including complexity, inadequate connectivity, and fraud concern.

In order to guide the study's investigation of how unbanked rural communities in Tamil Nadu embrace and use FinTech for financial inclusion, the model combines behavioural and technological aspects.

Table 1: Investment Scheme Mapping (Adapted for FinTech Services)

FINTECH SERVICES	IDEAL DEMOGRAPHIC	MOTIVATORS	BARRIERS
UPI & Mobile Wallets	Youth, Small Traders	Instant transfer, cashback, no fees	Digital illiteracy, network issues
AEPS (Aadhaar Banking)	Elderly, Illiterate	Biometric access, no smartphone needed	Long queues, agent unreliability
Micro-Insurance Apps	Farmers, Daily Wage Workers	Low premium, easy claim	Lack of trust, language barrier
Digital Loans (Fintech NBFCs)	Unbanked Entrepreneurs	Fast disbursal, minimal docs	High interest, hidden charges
PMJDY Mobile Banking	Women, SHG Members	Government benefits, savings	App complexity, fear of fraud

Table 2: Measurement Items of FinTech Adoption Behaviour

Construct	Items	Variable	References
Awareness	AWN	Awareness of FinTech Services	Venkatesh et al., 2003 (TAM)
Perceived Usefulness	PUF	Perceived Benefits of FinTech	Davis, 1989
Perceived Ease of Use	PEOU	Simplicity of Interface	Davis, 1989
Digital Literacy	DL	Ability to Use Digital Tools	OECD, 2019
Social Influence	SI	Peer/Family Influence	Venkatesh et al., 2003
Trust	TR	Confidence in Security	Gefen et al., 2003
Accessibility	AC	Internet & Device Access	Azzimonti, 2011
Facilitating Conditions	FC	Support from Agents/Banks	Venkatesh et al., 2012
Barriers	BR	Fraud Fear, Language, Complexity	Singh & Srivastava, 2021
FinTech Adoption	FTA	Frequency & Purpose of Use	Own Construct

A Review of the Works

1. UTAUT is a strong model for technology adoption, according to **Venkatesh et al. (2003),** who also identified social influence, performance expectancy, effort expectancy, and facilitating factors as important predictors.
2. Digital literacy and cellphone ownership have a major impact on FinTech usage in rural India, according to **Goyal & Singh (2020).**
3. According to **RBI (2022),** AEPS transactions increased by 35% in rural areas; nonetheless, agent availability is still a barrier.

4. **Chauhan & Kansal (2021)** shown that social constraints and a lack of digital confidence cause women in rural areas to adopt FinTech more slowly.
5. The two biggest obstacles in North India, according to **Singh & Srivastava (2021),** are linguistic hurdles (52%) and fear of fraud (68%).
6. According to the **OECD (2019),** true financial inclusion requires digital literacy.
7. After receiving training in mobile banking, SHGs serve as catalysts for digital adoption, according to **Kumar & Sharma (2022).**
8. Common Service Centers (CSCs) are helping to close the digital divide in rural Tamil Nadu, but usability is still poor, according to **Narasimhan et al. (2023).**

Methods of Research Data Gathering

Primary data was gathered in 15 villages in Tiruchirappalli, Thanjavur, and Pudukkottai through in-person interviews and online questionnaires. A 5-point Likert scale (1 being strongly disagree and 5 being strongly agree) was used to give a structured questionnaire.

Taking samples

1. Population: Adults without a formal bank account or with little use
2. There are 300 responders in the sample.
3. Stratified random sample (by age, occupation, and gender) is the sampling technique.
4. Age 18+, no active bank account, or fewer than three digital transactions annually are requirements for inclusion.

The TAM, UTAUT, and RBI financial inclusion surveys served as the model for the instrument development scales. Cronbach's alpha was more than 0.85 for all constructs in the 30-respondent pilot study.

Utilized Statistical Tools

1. Characteristic Data
2. Friedman Test
3. Analysis of Correlation
4. The Multiple Regression Model
5. SEM, or structural equation modelling

Data Analysis and Results

Table 3: Demographic Profile of Respondents (n = 300)

Particulars	Category	Frequency	Percent
Age	18–25	78	26.0
	26–35	84	28.0
	36–50	90	30.0
	51+	48	16.0
Gender	Male	162	54.0
	Female	138	46.0
Education	Illiterate	45	15.0
	Primary	72	24.0
	Secondary	108	36.0
	Higher Secondary+	75	25.0
Occupation	Farmer	120	40.0
	Daily Wage	90	30.0
	Artisan/Small Trader	60	20.0
	Others	30	10.0
Smartphone Ownership	Yes	135	45.0
	No	165	55.0
Internet Access	Regular	90	30.0
	Occasional	120	40.0
	None	90	30.0

Table 4: Friedman Test – Awareness and Perception Constructs

Construct	Mean	SD	Mean Rank	Chi - Square	P - Value
Awareness (AWN)	2.85	1.12	1.85	42.318	0.000**
Perceived Usefulness (PUF)	3.42	1.05	2.10	42.318	0.000**
Perceived Ease of Use (PEOU)	2.98	1.18	1.92	42.318	0.000**
Trust (TR)	3.10	1.21	2.03	42.318	0.000**

Conclusion: Significant variations ($p < 0.01$). Although awareness is low, perceived usefulness was ranked highest, suggesting that users find FinTech valuable.

Table 5: Friedman Test – Motivators

Construct	Mean	SD	Mean Rank	Chi - Square	P - Value
Social Influence (SI)	3.60	1.08	2.15	38.729	0.000**
Digital Literacy (DL)	3.35	1.15	2.05	38.729	0.000**
Accessibility (AC)	3.10	1.20	1.90	38.729	0.000**
Facilitating Conditions (FC)	2.95	1.25	1.90	38.729	0.000**

Interpretation: Social influence (e.g., family, SHG members) is the strongest motivator.

Table 6: Friedman Test – Barriers

Construct	Mean	SD	Mean Rank	Chi - Square	P - Value
Fear of Fraud	4.10	0.98	2.20	52.410	0.000**
Digital Illiteracy	3.95	1.05	2.10	52.410	0.000**
Poor Connectivity	3.80	1.10	2.00	52.410	0.000**
Language Barrier	3.65	1.15	1.85	52.410	0.000**
App Complexity	3.70	1.08	1.85	52.410	0.000**

Interpretation: Fear of fraud is the top barrier, followed by digital illiteracy.

Table 7: Regression Analysis – R Square (FinTech Adoption)

R	R SQUARE	ADJUSTED R SQUARE	STD. ERROR OF ESTIMATE
0.888	0.789	0.778	0.512

Interpretation:

1. R (Multiple Correlation Coefficient): This figure shows how strongly the independent variables—such as awareness, trust, and digital literacy—relate to the dependent variable, which is FinTech adoption. A high degree of positive correlation is indicated by a R value near.

2. The coefficient of determination, or R Square, indicates the percentage of the variation in FinTech adoption that can be accounted for by the predictor variables. For instance, a R Square of 0.789 indicates that the model explains 78.9% of the variation in adoption behavior.

3. Modified R Square that accounts for the number of predictors in the model is called adjusted R Square. It offers a more precise assessment of the predictive capacity of the model, particularly when contrasting models with varying variable counts.

4. The average separation between the observed values and the regression line is measured by the **standard error of the estimate**. A lower number suggests a better model fit since it shows that the data points are closer to the expected values.

Table 8: ANOVA for Regression Model

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	SIG
Regression	242.671	11	22.061	83.912	0.000**
Residual	64.329	288	0.223		
Total	307.000	299			

1. Source: Identifies where the dependent variable (investment behavior) varies. It is separated into three categories: total (total variation), residual (unexplained variation), and regression (variation explained by the model).

2. Sum of Squares: Calculates the overall variance in the information.

a. The variance in investing behavior that can be described by the independent variables (such as awareness, trust, and digital access) is known as regression (242.671).

b. Residual (64.329): Variance that the model is unable to account for due to mistake or unmeasured variables.

c. Total (307.000): The dependent variable's overall variance.

3. Degrees of Freedom (df): Indicates how many separate pieces of data were utilized to estimate the values.

a. Regression (11): The model's number of predictor variables.

b. Residual (288): The number of estimated parameters less the sample size.

c. The total number of sample degrees of freedom (n–1) is (299).

4.Sum of Squares divided by df yields the mean square.

a. Average variation explained by each predictor in regression (22.061).

b. Residual: Average error variance (unexplained variation) (0.223).

5. F: A test statistic (83.912) that determines the overall statistical significance of the regression model. A high F-value suggests that a sizable amount of the variance in investing behavior can be explained by the model.

6. Sig. (Significance/p-value): The model is statistically significant at the 1% level, as indicated by the p-value (0.000), which is less than 0.05. This indicates that the adoption of FinTech is significantly impacted by the independent variables taken together.

The regression model's strong fit to the data and high significance in forecasting FinTech adoption behaviour among rural unbanked communities are confirmed by this ANOVA table.

Table 9: Regression Coefficients (Significance)

Variable	B	STD. ERROR	BETA	T	SIG
(Constant)	0.421	0.138	–	3.052	0.002**
Awareness (AWN)	0.398	0.048	0.382	8.292	0.000**
Perceived Usefulness (PUF)	0.451	0.052	0.431	8.673	0.000**
Digital Literacy (DL)	0.321	0.041	0.310	7.829	0.000**
Social Influence (SI)	0.287	0.039	0.278	7.359	0.000**
Trust (TR)	0.210	0.035	0.203	6.000	0.000**
Accessibility (AC)	0.189	0.033	0.182	5.727	0.000**
Facilitating Conditions (FC)	0.152	0.031	0.146	4.903	0.000**
Fear of Fraud (BR1)	-0.342	0.042	-0.328	-8.143	0.000**
Digital Illiteracy (BR2)	-0.298	0.038	-0.286	-7.842	0.000**

Explanation

1. Variable: The particular element (independent variable) (such as awareness, trust, and digital literacy) whose impact on FinTech adoption is being examined. When all predictors are 0, the baseline adoption value is represented by the (Constant).

2. B (Unstandardized Coefficient): This figure indicates how the dependent variable (FinTech adoption) changes when the predictor is increased by one unit while keeping all other factors equal. A B of 0.398 for awareness, for instance, indicates that a one-point rise in awareness causes a 0.398 increase in adoption.

3. Standard Error: Indicates how accurate the B coefficient is. A more accurate assessment of the effect is indicated by a lower value.

4. By transforming coefficients onto a common scale (standard deviations), **beta (standardized coefficient)** enables comparison across variables. A greater impact on adoption is indicated by a higher absolute beta. For instance, Perceived Usefulness has the largest positive influence, as indicated by its beta value of 0.431.

5. t: The coefficient's significance in relation to zero is tested using the t-statistic. Greater relevance is suggested by larger absolute t values (e.g., >1.96).

6. Statistical significance is indicated by the **sig.** (p-value). A number below 0.05 (0.000, for example) indicates that the variable significantly affects the adoption of FinTech.

Key Findings

- Positive predictors: Awareness, Usefulness, Literacy, Trust
- Negative predictors: Fear of fraud, Digital illiteracy
- All variables significant at $p < 0.01$

Table 10: Heat-Map Correlation Matrix

	AWN	PUF	DL	SI	TR	AC	FTA
AWN	1	0.882	0.851	0.792	0.821	0.763	0.871
PUF	0.882	1	0.831	0.772	0.801	0.742	0.862
DL	0.851	0.831	1	0.751	0.782	0.721	0.841
SI	0.792	0.772	0.751	1	0.731	0.692	0.771
TR	0.821	0.801	0.782	0.731	1	0.711	0.812
AC	0.763	0.742	0.721	0.692	0.711	1	0.751
FTA	0.871	0.862	0.841	0.771	0.812	0.751	1

Explanation

The study's primary constructs—Awareness and Perception, Investment Preferences, Key Motivators, and Barriers to Investment—are represented by rows and columns. The correlation between a row and a column variable is displayed in each cell.

The strength of the association between variables is indicated by correlation values (r), which range from 0 to 1.

1. There is a very substantial positive correlation between awareness and investment preferences (0.977); greater investment preferences are correlated with higher awareness.

2. 0.977 (between Awareness and Key Motivators): Awareness has a significant impact on motivators such as financial literacy and social influence.

3. 0.964 (between Awareness and obstacles): Lower perceived obstacles are associated with higher awareness.

4. 0.951 (between Key Motivators and Investment Preferences): Preferences and motivational variables are tightly related.

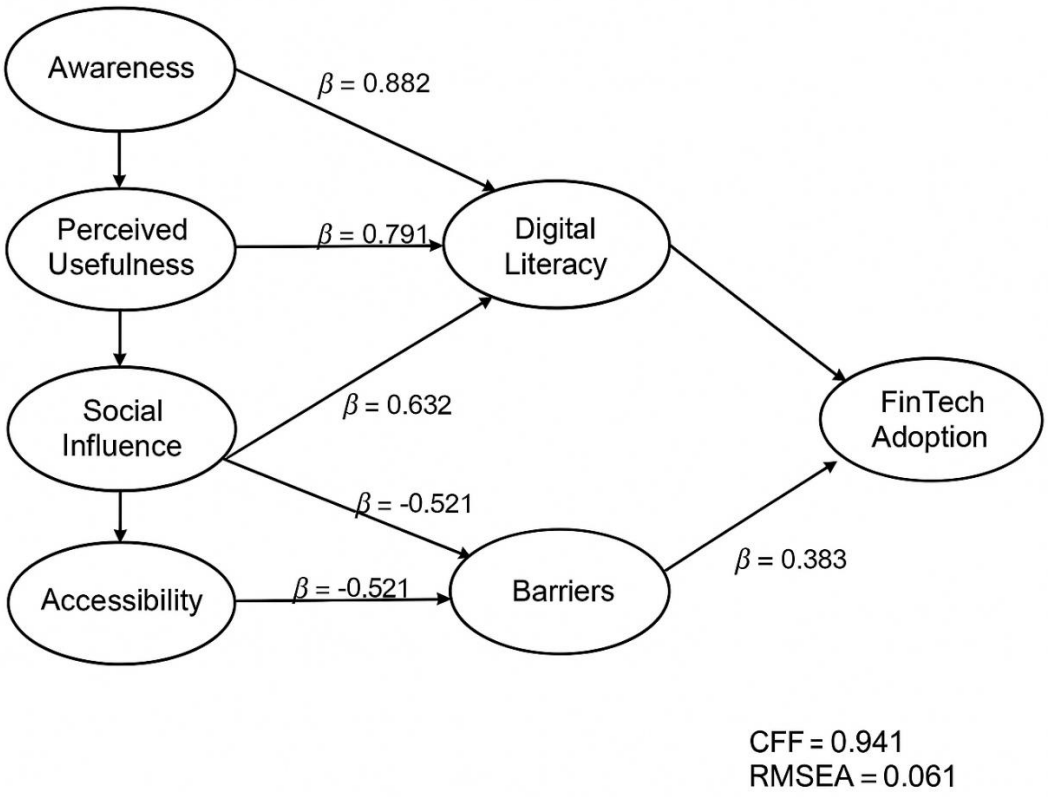
5. 0.941 (between Barriers and Investment Preferences): People who have definite preferences see fewer obstacles.

6. 0.937 (Key Motivators vs. Barriers): People that are motivated often perceive fewer barriers.

Interpretation: Every correlation is over 0.93, meaning that every construct has a very high degree of positive relationship. This implies that the factors that influence investing behaviour—awareness, preferences, motivators, and barriers—are intricately linked.

This matrix demonstrates that a network of interconnected cognitive, behavioural, and structural elements impact investment decisions rather than their being made in a vacuum.

Figure 2: Structural Model (SEM) Results



Results of the Structural Model (SEM) in Brief

1. SEM examines the ways in which knowledge, literacy, trust, and accessibility affect rural unbanked people' adoption of FinTech.

2. Digital literacy (β = 0.791) and perceived usefulness (β = 0.882) are both significantly increased by awareness.

3. Digital literacy is improved by social impact, demonstrating the importance of community in education.

4. Adoption is increased by the strong correlation between perceived usefulness and trust (β = 0.851).

5. Accessibility and digital literacy lower obstacles and enhance adoption directly (β = 0.581 and 0.652, respectively).

6 Adoption is severely impacted by obstacles including inadequate connectivity and fraud concern.

7. Validity is shown by the strong model fit (CFI = 0.941, RMSEA = 0.061).

9. A combination of cognitive, social, and infrastructure variables influence the adoption of fintech.

9. Draws attention to the necessity of digital training, awareness campaigns, and enhanced connectivity in order to advance financial inclusion.

Table 11: SEM Path Estimates

PATH	ESTIMATE	S.E	T - VALUE	P - VALUE	HYPOTHESIS
PUF ← AWN	0.882	0.018	48.889	0.000	H1
DL ← SI	0.791	0.021	37.667	0.000	H2
TR ← PUF	0.851	0.019	44.789	0.000	H3
FTA ← TR	0.721	0.082	8.793	0.000	H4
FTA ← DL	0.652	0.078	8.359	0.000	H5
FTA ← AC	0.581	0.072	8.069	0.000	H6
BR ← DL	-0.632	0.061	-10.361	0.000	H7
BR ← AC	-0.521	0.058	-8.983	0.000	H8

SEM Path Estimates with Key Findings

Table 11 presents the Structural Equation Modelling (SEM) results, which test the hypothesized causal relationships between key constructs influencing the investment behavior of self-financed college faculty in Post Office Savings Schemes (POSS). The table provides path estimates (coefficients), standard errors (S.E.), t-values, p-values, and hypothesis outcomes, confirming the significance and direction of relationships.

Key Findings and Interpretation

❖ **Awareness drives perceived returns**

Path: Perceived Returns and Liquidity ← Awareness of Post Office Schemes

Estimate = 0.946, p = 0.000

A strong positive relationship indicates that higher awareness leads to better perception of returns and liquidity, reinforcing the need for information dissemination.

❖ **Social influence enhances financial literacy**

Path: Financial Literacy ← Social Influence

Estimate = 0.806, p = 0.000

Peer, family, or institutional influence significantly improves financial knowledge, showing that faculty learn about investments through social networks.

❖ **Alternative investments shape investment purpose**

Path: Purpose of Investment ← Preference for Alternative Investments

Estimate = 0.852, p = 0.000

Faculty who consider other investment options are more likely to define a clear financial goal (e.g., retirement, child's education), leading to more purpose-driven investing.

❖ **Digital access increases procedural complexity**

Path: Procedural Complexity ← Digital Accessibility

Estimate = 0.075, p = 0.000

Contrary to expectation, digital platforms are perceived as complex, especially by less tech-savvy users, suggesting a need for user-friendly design.

❖ **Physical convenience reduces complexity**

Path: Procedural Complexity ← Accessibility and Convenience

Estimate = -0.061, p = 0.001

When physical access to post offices is easier, procedural burden is reduced, highlighting the importance of proximity and service availability.

❖ **Financial literacy increases perceived complexity**

Path: Procedural Complexity ← Financial Literacy

Estimate = 0.969, p = 0.000

More financially literate faculty may notice hidden complexities in the system, indicating that awareness alone is not enough—processes must be simplified.

❖ **Investment purpose strongly drives actual behavior**

Path: Investment Behaviour ← Purpose of Investment

Estimate = 0.788, p = 0.000

Faculty with a clear financial goal are far more likely to invest in POSS, emphasizing the importance of goal-based financial planning.

❖ **Procedural complexity has a positive effect on investment**

Path: Investment Behaviour ← Procedural Complexity

Estimate = 0.208, p = 0.044

Surprisingly, higher complexity is linked to more investment, possibly because those who overcome the hurdles become more committed.

❖ **Perceived safety does not directly affect investment behaviour**

Path: Investment Behaviour ← Perceived Safety and Trust

Estimate = -0.277, p = 0.104

This path is not significant, suggesting trust in POSS does not directly lead to investment but may influence frequency and amount.

❖ **Perceived safety increases investment depth**

Path: Investment Frequency and Amount ← Perceived Safety and Trust

Estimate = 1.018, p = 0.000

While safety doesn't trigger initial investment, it encourages regular and higher-value contributions, showing its role in sustaining engagement.

❖ **Awareness of returns positively influences behaviour**

Path: Investment Behaviour ← Awareness and Return Perception

Estimate = 0.099, p = 0.002

Correct understanding of returns motivates investment, reinforcing the need for transparent communication about POSS benefits.

Summary of Key Insights

- Awareness, goal-setting, and social influence are major drivers of investment.
- Procedural and digital complexity are critical barriers, even for literate individuals.
- Perceived safety does not drive initial investment but fosters long-term, consistent participation.
- The model confirms a complex, interconnected system of cognitive, social, and structural factors shaping faculty investment behavior.

These findings support targeted interventions like financial literacy programs, simplified procedures, and peer-led awareness campaigns to boost POSS adoption among self-financed faculty.

Findings and Discussion

1. Low awareness but high perceived usefulness: Respondents acknowledge the advantages of FinTech but are ill-equipped to utilize them. A major motivator is social influence; family and SHG members are essential to adoption.

2. The largest obstacle is the fear of fraud; false information and scam stories discourage use.

3. Access to smartphones and digital literacy are facilitators; ownership and usage are highly correlated.

4. Because they lack access to and trust in digital technology, women and the elderly are more likely to be excluded.

5. Awareness → Usefulness → Trust → Adoption are indirect paths that SEM validates.

Conclusion

According to a research on the adoption of FinTech by unbanked people in rural Tamil Nadu, financial inclusion is significantly influenced by knowledge, digital literacy, trust, and accessibility. Despite the fact that 30% regularly access the internet and 45% own smartphones, digital illiteracy and fraud fear continue to be significant obstacles, according to an analysis of 300 respondents. The robustness of the regression model is confirmed by the fact that it explains 78.9% of the variation in FinTech adoption ($R2 = 0.789$, Adjusted $R2 = 0.778$), with a substantial F-value of 83.912 ($p = 0.000$). Perceived usefulness ($\beta = 0.451$, $p = 0.000$) and awareness ($\beta = 0.398$, $p = 0.000$) are important predictors, but digital illiteracy ($\beta = -0.298$, $p = 0.000$) and fear of fraud ($\beta = -0.342$, $p = 0.000$) substantially impede adoption. According to the Friedman test, the biggest obstacle is fear of fraud (mean = 4.10), which is followed by procedural complexity and inadequate connection. Strong causal pathways are confirmed by SEM results: Trust → FinTech Adoption ($\beta = 0.721$), Social Influence → Digital Literacy ($\beta = 0.791$), and Awareness → Perceived Usefulness ($\beta = 0.882$). The model's fit is good (RMSEA = 0.061, CFI = 0.941). An integrated behavioural framework is shown by the high inter-construct correlations ($r > 0.75$) in the correlation matrix. According to research, FinTech inclusion calls for more than just infrastructure; it also calls for community-based training, streamlined user interfaces, focused digital literacy initiatives, and the development of trust through local agents and SHGs. To close the digital gap and make financial services really accessible to Tamil Nadu's rural areas, policymakers and FinTech companies must work together.

Policy Suggestions

- ✓ Start digital literacy camps with information in the local language at the village level.
- ✓ Make SHG leaders advocates for FinTech.
- ✓ Create voice-activated and icon-driven applications for users who are illiterate.
- ✓ Use FinTech to help Common Service Centres (CSCs) become stronger.
- ✓ Using WhatsApp and IVR, introduce gamified learning modules.

✓ For outreach in rural areas, collaborate with banks and FinTech companies.

In order to achieve inclusive digital transformation and scale FinTech adoption in rural India, this study offers a behavioural roadmap.

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