A STUDY ON FINTECH ADOPTION BY WOMEN IN RURAL AREAS OF VIRUDHUNAGAR DISTRICT

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Abstract

This study explore the adoption of financial technology (FinTech) services among women in rural areas of Virudhunagar district, Tamil Nadu. With the swift digitization of financial services in India, FinTech platforms such as mobile banking, UPI, digital wallets and microfinance apps have emerged as crucial tools for financial inclusion. However, rural women often face unique obstacles containing limited digital literacy, lack of access to smartphones or internet connectivity, and socio-cultural constraints. This research pursue to assess the level of awareness, usage patterns, perceived benefits and challenges faced by women in adoption FinTech solutions. Data were collected through structured interviews and questionnaires distributed to a sample responders of rural women across various villages in the district. The findings expose that while awareness of FinTech is growing particularly among younger and more educated women significant gaps continue in terms of access, trust, and digital belief. The study enhance the need for targeted awareness programs, user-friendly FinTech platforms in local languages, and supportive policy interventions to strengthen rural women's participation in the digital financial ecosystem. The results contribute to the expanded discussion on gender, technology, and inclusive growth in rural India.

***Keywords**: FinTech adoption, women empowerment, Financial literacy, challenges, usage pattern, perceived benefits, rural women in virudhunagar, digital inclusion.*

Introduction

The expansion of financial technology (FinTech) has modified the way financial services are accessed and utilized across the globe. In India, the FinTech revolution has gained significant impulse through innovations like Unified Payments Interface (UPI), digital wallets, mobile banking, and microfinance applications. These technologies aim to assist financial inclusion, especially among underserved populations in rural areas. With these evolution, the adoption of FinTech services persist unequal, particularly among women in rural communities who face various socio-economic and infrastructural barriers.

In rural districts like Virudhunagar in Tamil Nadu, women play a crucial part in managing household finances and contributing to the local economy through agricultural and small-scale entrepreneurial activities. However, their access to formal financial services and digital tools is often constricted due to limited digital literacy, poor internet infrastructure, and well established gender norms. Understanding the factors that influence FinTech adoption among rural women is necessary for designing extensive financial systems and empowering women economically. This study intends to examine the extent of FinTech adoption by women in the rural areas of Virudhunagar district.

Objectives:

1. To explore the level of awareness and usage of FinTech tools among rural women in Virudhunagar District.

2. To examine the benefits and challenges faced by women in using FinTech services, including digital literacy, infrastructure, and accessibility issues.
3. To evaluate the impact of FinTech adoption on women's economic empowerment and financial inclusion.

Scope of the Study

The study examines FinTech adoption among rural women in Virudhunagar district, Tamil Nadu, concentrate on their awareness, usage, and challenges. It emphasize how digital financial tools can empower women and promote inclusion, despite barriers like low digital literacy, limited access, and socio-cultural restraints. The research seeks to support the development of accessible FinTech platforms and targeted awareness programs, offering insights for gender-inclusive digital growth and rural development in India.

Statement of the Problem

Despite FinTech growth in India, rural women in Virudhunagar district face obstacles like low digital literacy, limited access of smartphone and socio-cultural restrictions. These challenges delay their use of tools like mobile banking and digital wallets. Trust issues and lack of awareness additionally reduce adoption. This study aims to identify these gaps to lead strategies for build up FinTech use, promoting financial inclusion, and empowering rural women.

Review of Literature

- Gupta & Sharma (2020): Digital literacy and smartphone access are key for FinTech adoption; younger and educated women are more likely to adopt. Recommends targeted digital training.
- Rao (2019): Socio-cultural barriers, lack of trust, and financial illiteracy hinder adoption. Suggests community-based awareness programs.
- Kumar & Singh (2021): Local language and user-friendly platforms boost engagement. Recommends simplified processes and regional customer support.
- Patel (2018): Awareness programs and involvement of local leaders enhance adoption. Emphasizes ongoing education for sustained usage.

Research Methodology

Research Design

The study adopts a descriptive and analytical research design to assess the extent of FinTech adoption and the factors influencing its use among women in rural areas. The study pursue to identify usage patterns, barriers, initiator, and the socio-economic determinants of digital financial service adoption.

Study Area

The research was conducted in Virudhunagar District, located in the southern part of Tamil Nadu, India. The district has a predominantly rural population and is characterized by moderate digital infrastructure, making it a suitable location to explore rural FinTech adoption patterns.

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Sampling Design

A multi-stage stratified random sampling method was used:

- **Stage 1:** Virudhunagar district was divided into North, Central, and South zones.
- **Stage 2:** Two blocks were randomly chosen from each zone
- **Stage 3:** 3 - 5 villages were randomly selected per block.
- **Stage 4:** In each village, 15 - 20 women were selected using systematic random sampling from eligible house

Sample Size

"Based on Cochran's formula, a minimum of 196 participants was need to achieve a 95% confidence level with a 7% margin of error. To account for probable non-responses and improve representativeness, the final sample size was expand to 240 women."

Data Collection Method

Primary data was collected using a structured questionnaire, divided into four sections:

- Section A: Socio-demographic profile
- Section B: Financial background and awareness
- Section C: FinTech usage (for users)
- Section D: Barriers and willingness (for non-users)

The questionnaire included closed-ended, multiple-choice, and Likert scale questions. Data was collected through face-to-face interviews conducted in Tamil by trained field investigators.

Data Analysis Tools

Collected data were coded and analyzed using SPSS and Excel. The following statistical tools were applied:

1. Descriptive Statistics: Frequencies, percentages, means
2. Cross-tabulation: To explore associations between demographic variables and FinTech usage
3. Chi-square Test: To test the significance of associations
4. Binary Logistic Regression: To identify predictors of FinTech adoption.
5. Multiple Response Analysis: For multi-option questions like challenges and motivations.

FinTech Adoption Dynamics

FinTech adoption associate the use of digital financial services such as mobile banking, UPI, and digital wallets. It is framed by factors such as technology access, socio-economic status, awareness, trust, and regulations. In rural areas, adoption is slower due to inadequate infrastructure, low digital literacy, and cultural barriers. For women, gender-based challenges like limited self determination and mobility also obstruct adoption.

Financial Literacy

Financial literacy is the ability to manage personal finances, including budgeting, saving, investing, and using banking services. It is necessary for informed financial decisions and is key to successful FinTech **adoption**. For rural women, financial literacy improve confidence and facilitate effective use of digital tools such as mobile banking, UPI, and digital wallets. **Obstacles to FinTech adoption** among rural women involve low digital and financial literacy, inadequate

access of technology, cultural barriers, fear of scam and language challenges. **Opportunities** include growing smartphone use, government support, SHG involvement, localized FinTech solutions, training programs, and peer learning.

Limitations of the Study

- The study was confining to selected rural villages within Virudhunagar District.
- The sample size of 240 respondents provides sensible insights, it may not fully represent the assortment of rural women.
- The study briefly explored behavioral intentions and trust, it did not extensively measure psychological constructs.

Analysis and Interpretation

1. Descriptive Statistics:

1.1 Age Group

S.No	Age	No.of Respondents	Percentage (%)
1	18–25	36	15.0
2	26–35	60	25.0
3	36–45	66	27.5
4	46–55	48	20.0
5	56 and above	30	12.5
	Total	240	100

The above table displays that out of 240 respondents majority of the respondents (52.5%) were in the age group of 26 to 45 years.

1.2 Occupation:

S.No	Occupation	No. Of respondents	Percentage (%)
1	Housewife	138	57.5
2	Self-employed	42	17.5
3	Agricultural laborer	48	20.0
4	Other (tailor, cook)	12	5.0
	Total	240	100

As indicated in Table 1.2 A majority number of women (57.5%) were housewives, while 20% worked as agricultural laborers.

2. Cross-Tabulation Analysis

Education Level vs FinTech Usage

Examine the relationship between demographic variables and FinTech adoption, cross-tabulations were carry out.

Education Level	FinTech Users (n)	Non-users (n)	Total	% Using FinTech
Illiterate	4	32	36	11.1%
Primary	24	72	96	25.0%
Secondary	30	30	60	50.0%
Higher Secondary	20	10	30	66.7%
Graduate and above	13	5	18	72.2%

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Table 2.1.2 expressed clearly FinTech usage increases elegantly with education level, stipulate the significance of digital and financial literacy.

3. Hypotheses Testing

Null Hypothesis (H_0): There is no significant association between monthly household income and FinTech usage among rural women.

Alternative Hypothesis (H_1): There is a significant association between monthly household income and FinTech usage among rural women.

Contingency Table (Hypothetical)

Income Group	FinTech Users (n)	Non-users (n)	Total
Below ₹5,000	10	44	54
₹5,000–₹10,000	25	53	78
₹10,001–₹20,000	38	34	72
Above ₹20,000	18	18	36
Total	91	149	240

Chi-Square Test

Test Statistic	Value
Chi-square (χ^2)	16.24
Degrees of freedom	3
p-value	0.001
Result	Significant at 0.05 level

Since the p-value (0.001) < 0.05, we reject the null hypothesis. There is a statistically significant association between income level and FinTech usage.

4. Binary Logistic Regression:

Educational Level as a Predictor of FinTech Adoption: To explore whether educational attainment significantly predicts FinTech adoption among rural women.

Logistic Regression Output (Hypothetical)

Predictor	B (Coefficient)	Odds Ratio (Exp(B))	p-value
Educational Level	0.62	1.86	< 0.001
Constant	-1.91	—	< 0.001

The result is most statistically significant ($p < 0.001$). Thus, higher education is a well built predictor of FinTech adoption. Illiterate or less-educated women are significantly less potential to adopt FinTech compared to those with secondary or higher education.

5. Multiple Response Analysis:

Challenges and Motivations for FinTech Usage: To identify and categories the common challenges faced by users and motivations among non-users, based on their responses to multi-option things rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

5.1 Challenges (n = 91 Users)

Challenge Item	% Agree	% Neutral	% Disagree
Poor internet/network	68%	18%	14%
Fear of fraud or money loss	61%	22%	17%
Language barrier	56%	25%	19%
Lack of digital skills	64%	20%	16%
No peer/family support	48%	28%	24%

5.2 Motivations (n = 149 Non-users)

Item	% Agree	% Neutral	% Disagree
I would use FinTech with proper training	78%	12%	10%
Preference for local language apps	74%	16%	10%
Cashback or incentive feature is attractive	61%	20%	19%
SHG or friend recommendation matters	59%	25%	16%
Simpler app interfaces would help me	70%	18%	12%

Over 60% of users cited network, fraud concerns, and digital skill gaps as major issues. Above 70% of non-users indicated that local language support and clarify associate would rise willingness to adopt FinTech.

Findings

Above 50% of respondents were aged 26 - 45, the most vital group in FinTech usage.

- More than 65% had education up to primary or secondary level. Higher education strongly correlated with excessive FinTech adoption.
- Most of the respondents (57.5%) were housewives; 20% were agricultural labourer's signifying informal economic roles.
- The data a sustainable increase in adoption with education from 11.1% among illiterate respondents to 72.2% among graduates.
- The null hypothesis is rejected. There is a statistically significant association between income level and FinTech usage.
- In the logistic regression analysis, the result is much statistically significant ($p < 0.001$). Thus, higher education is a strong predictor of FinTech adoption.
- In multiple regression analysis over 70% of non-users indicated that local language support and simplified interfaces would increase enthusiasm to adopt FinTech.

Suggestions

To grow FinTech adoption, targeted digital literacy programs customized to rural women should be implemented, concentrating on simple, practical training. FinTech companies must develop user-friendly apps in local languages with slightest technical elaboration.

Enhance internet infrastructure and smartphone accessibility in rural areas is crucial. Awareness drive involving community leaders can help build trust and address socio-cultural resistance. Representatives should introduce enabling measures to make FinTech more inclusive and accessible to women.

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Conclusion

The study concludes that while FinTech services offer significant chance for financial inclusion and economic empowerment of rural women, several barriers control broad adoption. Managing digital literacy gaps, infrastructural challenges, and socio-cultural factors is necessary to enhance usage. Tailored FinTech solutions and policy support can enable women to hopefully involve in the digital financial ecosystem. Empowering rural women through FinTech can contribute to broader extensive growth and gender equality in the region.

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