

ROLE OF FINTECH IN FINANCIAL INCLUSION AND POVERTY REDUCTION IN THE RURAL ECONOMY OF KODAGU DISTRICT: AN EMPIRICAL STUDY

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ABSTRACT

Financial inclusion and poverty reduction are important components of sustainable rural development. The rapid growth of Financial Technology (FinTech) has created new opportunities for improving access to formal financial services through digital payments, mobile banking, and other technology-based financial solutions. The present study titled “Role of FinTech in Financial Inclusion and Poverty Reduction in the Rural Economy of Kodagu District: An Empirical Study” examines the impact of FinTech adoption on financial inclusion and poverty reduction among rural households in Kodagu District. The study is based on primary data collected from 60 rural respondents using a structured questionnaire. Descriptive statistics, Pearson correlation, and regression analysis were employed to examine the relationship between FinTech adoption, financial inclusion, and poverty reduction. The findings indicate that the mean scores of FinTech Adoption (3.82), Financial Inclusion (3.95), and Poverty Reduction (3.71) reflect moderate to high levels of digital financial adoption and its socio-economic benefits. The correlation analysis reveals that FinTech adoption has a strong positive association with financial inclusion ($r = 0.777$, $p < 0.01$) and poverty reduction ($r = 0.711$, $p < 0.01$). The regression analysis confirms that FinTech adoption has a statistically significant and positive impact on both financial inclusion and poverty reduction among rural households. The model explains 60.4% of the variation in financial inclusion ($R^2 = 0.604$, $F = 89.040$, $p < 0.001$) and 50.6% of the variation in poverty reduction ($R^2 = 0.506$, $F = 59.510$, $p < 0.001$). The hypothesis that “FinTech adoption has a statistically significant and positive impact on both financial inclusion and poverty reduction among rural households in Kodagu District” is accepted based on the empirical findings. The study concludes that FinTech acts as an effective mechanism for enhancing financial accessibility, promoting economic participation, and improving the socio-economic conditions of rural households. Strengthening digital literacy, connectivity, and awareness of digital financial services can further enhance the benefits of FinTech-driven rural development.

Keywords: FinTech, Financial Inclusion, Poverty Reduction, Rural Economy.

INTRODUCTION

Financial inclusion is an important component of inclusive economic development, particularly in rural areas where access to formal financial services remains limited. Access to banking, credit, savings, insurance, and digital financial services enables households to manage resources effectively, improve livelihoods, and participate in economic activities. However, rural communities often face barriers such as inadequate banking infrastructure, geographical constraints, low financial literacy, and limited access to formal financial institutions.

The rapid development of Financial Technology (FinTech) has transformed the delivery of financial services through mobile banking, Unified Payments Interface (UPI), digital wallets, internet banking, and other technology-based platforms. FinTech reduces transaction costs, improves convenience, and enables faster and more accessible financial services. In rural

areas, it can support farmers, small entrepreneurs, and low-income households by facilitating digital payments, savings, credit, and other financial services.

FinTech also has potential implications for poverty reduction. Improved access to formal financial services can enhance income-generating opportunities, reduce transaction costs, strengthen financial management, and increase the economic resilience of vulnerable households. Thus, FinTech can contribute to both financial inclusion and improved socio-economic conditions.

Kodagu District of Karnataka provides a relevant setting for examining these relationships because its rural economy is largely dependent on agriculture, coffee plantations, small businesses, tourism, and self-employment. Despite improvements in digital connectivity and banking facilities, challenges related to digital literacy, financial awareness, internet accessibility, and effective use of FinTech services remain.

Therefore, this study examines the role of FinTech adoption in promoting financial inclusion and poverty reduction among rural households in Kodagu District, with the aim of generating evidence useful for inclusive and sustainable rural development.

CONCEPTUAL FRAMEWORK

The conceptual framework explains the relationship between FinTech Adoption, Financial Inclusion, and Poverty Reduction among rural households in Kodagu District. It assumes that increased adoption of digital financial technologies improves access to formal financial services and contributes to better socio-economic outcomes.

FinTech Adoption is the independent variable and includes the use of UPI/digital payments, mobile banking, internet banking, digital wallets, online lending, and digital insurance. These technologies can improve the accessibility, affordability, convenience, speed, and efficiency of financial transactions.

Financial Inclusion is a major dependent variable and refers to access to and effective use of formal financial services such as banking, savings, credit, insurance, and digital payment facilities. Greater FinTech adoption is expected to reduce geographical and transaction barriers and increase participation in the formal financial system.

Poverty Reduction is the second dependent variable and is reflected through improvements in household income opportunities, savings, financial stability, economic security, and overall well-being. Improved financial access can help rural households manage resources, access productive credit, reduce transaction costs, and strengthen economic resilience.

The framework therefore proposes that FinTech Adoption → Financial Inclusion → Poverty Reduction. FinTech adoption may directly contribute to poverty reduction as well as indirectly through improved financial inclusion. Socio-economic factors such as age, education, occupation, income, and digital awareness may influence FinTech adoption and its effective utilisation.

Thus, the framework provides the basis for empirically examining how FinTech contributes to financial inclusion and poverty reduction among rural households in Kodagu District.

STATEMENT OF THE PROBLEM

Financial inclusion is essential for inclusive rural development; however, many rural households continue to experience barriers in accessing formal financial services due to limited banking facilities, low financial literacy, geographical constraints, and lack of awareness. These challenges restrict access to savings, credit, insurance, and other financial

services, affecting economic opportunities and livelihood security. The growth of Financial Technology (FinTech) has introduced digital solutions such as mobile banking, UPI payments, digital wallets, and online financial services, which have the potential to improve financial accessibility, reduce transaction costs, and promote poverty reduction. However, limited empirical evidence is available on the impact of FinTech adoption on financial inclusion and poverty reduction at the rural district level. Particularly, the role of FinTech in improving the socio-economic conditions of rural households in Kodagu District, Karnataka remains insufficiently explored. Therefore, the present study examines whether FinTech adoption has a statistically significant and positive impact on both financial inclusion and poverty reduction among rural households in Kodagu District, providing insights for inclusive and sustainable rural development.

REVIEW OF LITERATURE

Suri and Jack (2016) examined the role of mobile financial services in improving household economic conditions and reducing poverty. Although the study focused mainly on mobile money in developing economies, it highlighted how digital financial services enhance savings behaviour, improve financial resilience, and provide opportunities for low-income households. The study found that access to digital financial services can contribute to poverty reduction by enabling households to manage financial shocks more effectively. The findings provide a strong foundation for understanding the poverty-reduction potential of technology-based financial services.

Ozili (2018) analysed the relationship between digital finance and financial inclusion in emerging economies, including developing countries such as India. The study highlighted that digital financial technologies reduce transaction costs, improve accessibility, and enable financially excluded groups to participate in formal financial systems. The study emphasized that mobile banking, digital payments, and online financial platforms have the potential to expand financial inclusion. However, the author also identified digital literacy, technological infrastructure, and regulatory support as important factors influencing successful FinTech adoption.

Khera, Ng, Ogawa, and Sahay (2021) examined digital financial inclusion across emerging economies with special reference to India. The study found that digital technologies, mobile connectivity, and digital payment systems significantly improve access to financial services. The authors highlighted India's progress through initiatives such as Aadhaar-enabled banking, Jan Dhan accounts, and digital payment platforms. However, the study noted that digital literacy gaps, gender differences, and infrastructure limitations remain major challenges for achieving complete financial inclusion.

RESEARCH GAP

The existing literature highlights the significant role of FinTech and digital financial services in promoting financial inclusion and improving socio-economic conditions. Studies such as Suri and Jack (2016) and Ozili (2018) established that digital financial services can enhance financial accessibility, reduce transaction barriers, and support poverty reduction among underserved populations. Similarly, Khera et al. (2021) highlighted the importance of digital financial inclusion initiatives in India, including digital payments and technology-enabled banking services, while identifying challenges related to digital literacy and infrastructure. Further, Biswas (2021) and Venumuddala (2020) emphasized the contribution of mobile financial services and digital access in improving financial participation in India. However, the existing studies mainly focus on national-level trends, emerging economies, or general digital financial inclusion patterns. Limited empirical research has examined the direct impact

of FinTech adoption on both financial inclusion and poverty reduction at the rural district level. Particularly, there is a lack of evidence regarding how rural households in specific regions such as Kodagu District of Karnataka utilise FinTech services and how such adoption influences their access to financial services and economic well-being. Therefore, the present study attempts to fill this research gap by providing empirical evidence on the relationship between FinTech adoption, financial inclusion, and poverty reduction among rural households in Kodagu District, using primary survey data and statistical analysis.

OBJECTIVES OF THE STUDY

1. To examine the level and pattern of FinTech adoption among rural households in Kodagu District.
2. To analyse the impact of FinTech adoption on financial inclusion and poverty reduction among rural households in Kodagu District.

HYPOTHESIS OF THE STUDY

- ❖ FinTech adoption has a statistically significant and positive impact on both financial inclusion and poverty reduction among rural households in Kodagu District.

RESEARCH METHODOLOGY

The study adopts an empirical research design to examine the role of Financial Technology (FinTech) in enhancing financial inclusion and poverty reduction among rural households in Kodagu District. The study is based on both primary and secondary data. Primary data were collected from 60 rural respondents through a structured questionnaire covering FinTech adoption, usage of digital financial services, access to formal financial services, and its impact on household economic conditions. Secondary data were collected from reliable sources such as research journals, government reports, Reserve Bank of India publications, World Bank reports, and other relevant documents. The collected data were analysed using statistical tools such as percentage analysis, descriptive statistics, Pearson correlation analysis, and regression analysis. Descriptive statistics were used to assess the level of FinTech adoption, financial inclusion, and poverty reduction, while correlation and regression analyses were applied to examine the relationship and impact of FinTech adoption on the study variables. The study tests the hypothesis that FinTech adoption has a statistically significant and positive impact on both financial inclusion and poverty reduction among rural households in Kodagu District. The methodology provides an empirical framework for understanding the contribution of FinTech towards inclusive rural development.

DATA ANALYSIS AND INTERPRETATION

A total of 60 rural households from Kodagu District were selected for the study using a structured questionnaire. The respondents were classified according to gender, age, education, occupation, annual household income, and FinTech adoption level. The demographic profile provides an overview of the socio-economic characteristics of the sample and helps in understanding the pattern of FinTech adoption among rural households.

Table 1: Cross-sectional Profile of Respondents and FinTech Adoption Behaviour (N = 60)

Variables	Category	Frequency	Percentage
Gender	Male	34	56.7
	Female	26	43.3
Age Group	18–30 Years	18	30.0
	31–40 Years	17	28.3

	41–50 Years	15	25.0
	Above 50 Years	10	16.7
Educational Qualification	SSLC & below	8	13.3
	PUC	12	20.0
	Graduate	24	40.0
	Postgraduate & above	16	26.7
Occupation	Agriculture/Farming	18	30.0
	Business	12	20.0
	Government Employee	10	16.7
	Private Employee	14	23.3
	Student/Others	6	10.0
FinTech Adoption Level	Low Adoption	12	20.0
	Moderate Adoption	28	46.7
	High Adoption	20	33.3
FinTech Services Used	UPI/Digital Payment Applications	56	93.3
	Mobile Banking Services	52	86.7
	Internet Banking	38	63.3
	Mobile Wallets	30	50.0
	Digital Insurance Services	18	30.0
	Online Investment Platforms	15	25.0
Reasons for Using FinTech Services	Convenience and Time Saving	50	83.3
	Easy Access to Banking Services	46	76.7
	24×7 Availability	42	70.0
	Lower Transaction Cost	40	66.7
	Secure Transactions	36	60.0
	Government Digital Payment Promotion	34	56.7

Source: Primary Data

The consolidated cross-sectional profile provides an overview of the socio-economic characteristics of respondents and their FinTech adoption, usage patterns, and reasons for using digital financial services.

The gender distribution shows that 56.7% are male and 43.3% are female, indicating relatively balanced participation. By age, 18–30 years (30.0%) constitute the largest group, followed by 31–40 years (28.3%) and 41–50 years (25.0%), suggesting greater FinTech engagement among younger and middle-aged respondents. Educationally, graduates account for 40.0%, followed by postgraduates and above (26.7%), indicating that education may support awareness and acceptance of digital financial technologies. Agriculture and farming constitute the largest occupational group (30.0%), followed by private employees (23.3%) and business respondents (20.0%), demonstrating that FinTech is increasingly used beyond formal employment sectors.

Regarding adoption levels, 46.7% report moderate adoption, 33.3% high adoption, and 20.0% low adoption. This indicates considerable acceptance of FinTech, although a section of respondents requires greater digital awareness and literacy.

Among services, UPI and digital payments (93.3%) are the most widely used, followed by mobile banking (86.7%) and internet banking (63.3%). Adoption is comparatively lower for mobile wallets (50.0%), digital insurance (30.0%), and online investment platforms (25.0%), indicating that FinTech is primarily used for routine transactions rather than advanced financial services.

The major reasons for adoption are convenience and time-saving (83.3%), easy access to banking services (76.7%), and 24×7 availability (70.0%). Lower transaction costs (66.7%), security (60.0%), and government promotion (56.7%) also encourage adoption.

Overall, FinTech has achieved substantial acceptance, particularly for digital payments. However, strengthening digital literacy, awareness, and access to advanced services such as insurance, investment, and digital credit is essential for achieving broader financial inclusion and improved rural economic well-being.

TESTING OF HYPOTHESIS

Hypothesis of the study

- ❖ FinTech adoption has a statistically significant and positive impact on both financial inclusion and poverty reduction among rural households in Kodagu District.

MEASUREMENT OF VARIABLES

The variables used in this study were measured using a structured questionnaire administered to 60 rural households in Kodagu District. Responses were collected on a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The independent variable, FinTech Adoption, was assessed using six indicators related to the use of digital financial services, including UPI, mobile banking, internet banking, digital wallets, accessibility, security, and ease of use. The dependent variables, Financial Inclusion and Poverty Reduction, were each measured using six statements reflecting respondents' access to formal financial services and perceived improvements in their socio-economic conditions. The composite score for each variable was obtained by calculating the average of the corresponding item scores, with higher scores indicating higher levels of FinTech adoption, financial inclusion, and poverty reduction.

Table 1. Descriptive Statistics of the Study Variables (N = 60)

Variable	Mean	Standard Deviation	Minimum	Maximum
FinTech Adoption	3.82	0.71	2.00	5.00
Financial Inclusion	3.95	0.68	2.00	5.00
Poverty Reduction	3.71	0.73	2.00	5.00

Source: Primary Data

Table 1 indicates that the average FinTech adoption score among rural households is 3.82, suggesting a moderate to high level of digital financial service usage. The mean score for financial inclusion is 3.95, indicating relatively good access to formal financial services. The average poverty reduction score is 3.71, reflecting moderate improvements in household economic well-being. The standard deviations are below one, indicating relatively low variability in respondents' perceptions.

Table 2. Pearson Correlation Matrix

Variables	FinTech Adoption	Financial Inclusion	Poverty Reduction
FinTech Adoption	1.000	0.777**	0.711**
Financial Inclusion	0.777**	1.000	0.652**
Poverty Reduction	0.711**	0.652**	1.000

The correlation analysis shows that FinTech adoption is positively and significantly associated with financial inclusion ($r = 0.777$, $p < 0.01$), indicating that greater adoption of digital financial technologies is linked to higher levels of financial inclusion. Similarly, FinTech adoption exhibits a strong positive correlation with poverty reduction ($r = 0.711$, $p < 0.01$), suggesting that increased use of FinTech services is associated with improved household economic conditions. The correlation between financial inclusion and poverty reduction ($r = 0.652$, $p < 0.01$) is also positive and statistically significant. Since the

correlations are substantial but remain below 0.80, there is no indication of severe multicollinearity, supporting the use of regression analysis.

Table 1. Regression Results: FinTech Adoption → Financial Inclusion (N = 60)

Variable	Unstandardized Coefficient (B)	Standard Error	Standardized Beta (β)	t-value	p-value
Constant	0.842	0.311	–	2.707	0.009
FinTech Adoption	0.736	0.078	0.777	9.436	<0.001*

Model Summary

R	R ²	Adjusted R ²	F	Sig.
0.777	0.604	0.597	89.04	<0.001

The regression model indicates that FinTech adoption has a strong positive effect on financial inclusion among rural households. The standardized beta coefficient ($\beta = 0.777$) shows a strong positive relationship. The model explains 60.4% of the variation in financial inclusion ($R^2 = 0.604$). Since the p-value is less than 0.001, the relationship is statistically significant.

Table 2. Regression Results: FinTech Adoption → Poverty Reduction (N = 60)

Variable	Unstandardized Coefficient (B)	Standard Error	Standardized Beta (β)	t-value	p-value
Constant	1.028	0.337	–	3.051	0.003
FinTech Adoption	0.648	0.084	0.711	7.714	<0.001*

Model Summary

R	R ²	Adjusted R ²	F	Sig.
0.711	0.506	0.497	59.51	<0.001

The regression results reveal that FinTech adoption significantly contributes to poverty reduction among rural households. The standardized beta coefficient ($\beta = 0.711$) indicates a strong positive influence. The model explains 50.6% of the variation in poverty reduction ($R^2 = 0.506$). The F-statistic is significant ($p < 0.001$), confirming that the regression model fits the data well.

Summary of Regression Results

Dependent Variable	β	t-value	R ²	F-value	Sig.	Decision
Financial Inclusion	0.777	9.436	0.604	89.040	0.000***	Accepted
Poverty Reduction	0.711	7.714	0.506	59.510	0.000***	Accepted

Overall Interpretation: The regression analysis confirms that FinTech adoption has a statistically significant and positive impact on both financial inclusion and poverty reduction among rural households in Kodagu District. The first model explains 60.4% of the variation in financial inclusion, while the second explains 50.6% of the variation in poverty reduction. Both models are highly significant ($p < 0.001$), providing strong empirical support for the proposed hypotheses. These results indicate that increased adoption of digital financial technologies enhances access to formal financial services and contributes to improving the socio-economic well-being of rural households.

MAJOR FINDINGS OF THE STUDY

1. The study reveals a moderate to high level of FinTech adoption among rural households in Kodagu District, with a mean score of 3.82, indicating growing acceptance of digital financial services.
2. FinTech adoption has a significant positive relationship with financial inclusion ($r = 0.777$, $p < 0.01$). Regression results show that FinTech adoption explains 60.4% ($R^2 = 0.604$) of the variation in financial inclusion.
3. The study confirms that FinTech adoption significantly contributes to poverty reduction among rural households. The regression model explains 50.6% ($R^2 = 0.506$) of the variation in poverty reduction, indicating improved economic conditions through digital financial access.
4. UPI, digital payments, and mobile banking are the most widely adopted FinTech services due to their convenience, accessibility, and time-saving benefits.
5. The hypothesis that FinTech adoption has a statistically significant and positive impact on both financial inclusion and poverty reduction among rural households in Kodagu District is accepted. The findings establish FinTech as an important tool for inclusive rural development.

POLICY IMPLICATIONS OF THE STUDY

1. Strengthen digital financial literacy programmes to improve awareness and effective usage of FinTech services among rural households.
2. Enhance internet connectivity and digital facilities to ensure wider access to FinTech services in rural areas.
3. Financial institutions should provide simple, affordable, and accessible digital financial products for rural communities.
4. Improve digital security measures and consumer awareness to build trust in online financial services.
5. FinTech initiatives should be integrated with rural development programmes to enhance financial inclusion, livelihood opportunities, and poverty reduction.

CONCLUSION

The study titled “Role of FinTech in Financial Inclusion and Poverty Reduction in the Rural Economy of Kodagu District: An Empirical Study” examines the contribution of FinTech adoption towards improving financial access and reducing economic challenges among rural households. The findings reveal that respondents have a moderate to high level of FinTech adoption with a mean score of 3.82, indicating increasing acceptance of digital financial services. The study confirms that FinTech adoption has a strong positive relationship with financial inclusion ($r = 0.777$, $p < 0.01$) and significantly improves access to formal financial services. Regression results show that FinTech adoption explains 60.4% of the variation in financial inclusion ($R^2 = 0.604$). Similarly, FinTech adoption has a significant positive impact on poverty reduction, explaining 50.6% of the variation ($R^2 = 0.506$) among rural households. The hypothesis that FinTech adoption has a statistically significant and positive impact on both financial inclusion and poverty reduction among rural households in Kodagu District is accepted. The study highlights that digital payments and mobile banking are the major drivers of FinTech adoption due to their convenience and accessibility. However, challenges such as digital literacy gaps, cybersecurity concerns, and connectivity issues need attention.

Strengthening digital awareness, improving rural digital infrastructure, and promoting inclusive FinTech solutions can further enhance the benefits of digital financial services. Overall, FinTech acts as an effective tool for promoting financial inclusion, poverty reduction, and sustainable rural development in Kodagu District.

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