

Role and Impact of Fintech Adoption on Financial Inclusion Among Sericulture Farmers and Silk Traders in Ramanagara

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Abstract

Financial Technology has changed the way people do banking and other financial things. It has made things faster, safer and easier to use with things like banking, internet banking and digital wallets. This has really helped people get access to financial services. In India the government has been pushing for people to use payments, which has helped more people use Financial Technology. We do not know much about how sericulture farmers and silk traders are using Financial Technology. This is especially true in Ramanagara, which's a big place for sericulture in Karnataka. Most studies have looked at how regular people, small businesses and people in areas use Financial Technology. They have not looked much at the sericulture sector. There are also problems like people not knowing how to use things not having internet and being worried about safety. These problems have not been fully addressed for sericulture farmers and silk traders. This study wants to look at how Financial Technology's helping sericulture farmers and silk traders get better access to financial services. We will ask sericulture farmers and silk traders questions. Use the answers to see how Financial Technology is affecting them. We will use math tools to look at the data and see how Financial Technology is helping with financial things. We want to know how happy people are with Financial Technology and if it is helping them manage their money better. This study should give us ideas about how much Financial Technology is being used and what is helping or hurting its adoption. It should also give us ideas on how to make digital financial services better and more accessible. The results will be helpful to people who make policies, banks, Financial Technology companies and people who care about sericulture. The study will look at Financial Technology. How it is helping sericulture farmers and silk traders. It will look at the things and the bad things about Financial Technology. This will help us understand

Financial Technology and how it can be improved for sericulture farmers and silk traders. Financial Technology is a part of our lives now and it will be even bigger in the future. So we need to make sure that sericulture farmers and silk traders can use it easily and safely. Financial Technology is very important for sericulture farmers and silk traders. It can help them do their things more easily and quickly.. We need to make sure that they have the skills and knowledge to use Financial Technology. We also need to make sure that they have access to the internet and that they feel safe using Financial Technology. If we can do this then Financial Technology can really help sericulture farmers and silk traders. It can help them get access to financial services and manage their money better. Financial Technology can be a powerful tool, for sericulture farmers and silk traders.

Keywords: FinTech Adoption, Financial Inclusion, Sericulture Farmers, Silk Traders, Ramanagara, Digital Payments, UPI, Mobile Banking, Financial Management, Digital Literacy.

I. Introduction

Financial Technology has changed the way people access and use services. It includes payment methods like Unified Payments Interface (UPI) mobile banking, internet banking and digital wallets. These tools make financial transactions faster, easier and more convenient. These technologies have reduced the need to go to bank branches. They have made financial services available anytime and anywhere (Lee & Shin 2018; Ozili, 2018). In India government efforts such as Digital India and Pradhan Mantri Jan Dhan Yojana (PMJDY) have pushed for the use of financial services. These efforts have helped increase inclusion, especially in rural and semi-urban areas. They have increased access to banking and digital payment options (Asif et al. 2023).

Ramanagara is famous for its sericulture industry. Sericulture farmers and silk traders are important in supporting the economy. In years many of them have started using FinTech services. They use these services to get payments move money and handle business transactions. However the use of these financial services is still affected by things like digital literacy, awareness, internet access, trust and concerns about security (Hatibaruah et al., 2022; Sharma et al. 2025). Knowing these things is important. They affect how well people can use financial services. So this study looks at the role and effect of FinTech adoption on inclusion among sericulture farmers and silk traders in Ramanagara. The results are expected to help decision makers, financial institutions and FinTech companies create plans to improve the use of financial services, in the sericulture sector.

II. Review of Literature

1. Geetha (2014) This paper provides an overview of the role of sericulture in empowering women in rural settings. According to the study, sericulture generates job opportunities for women, thus helping them become economically independent. From the results of the study, it is clear that engaging in sericulture raises the level of economic status in families. Financial assistance is a key requirement in involving women in the sericulture industry.

2. Arner et al. (2015) The researchers present the history of the FinTech concept development as a crisis-driven financial innovation. The writers talk about how new technology has changed finance and banking. Based on what the study found FinTech changes make financial services work better and be easier to get. These changes also make the experience, for customers better.

3. Khedmatgozar & Alipour-Hafezi (2017) In this research paper, the use of digital identification systems in the context of digital information management is examined. The paper describes the benefits of digital technology in the management of financial and technological data. Digital technology is shown to have an increasing importance in digital eco-systems.

4. Lee & Shin (2018) The article is about the FinTech ecosystem and the different FinTech models. It also talks about the problems in the industry. The FinTech technologies are changing the way banks work. They are also changing payments and investments. Using technology makes things easier for clients. It makes work more efficient. The FinTech ecosystem is really important because it is making a difference, in the financial industry. The article says that FinTech technologies are

making banks, payments and investments better for clients.

5. Park & Mercado Jr. (2018) This paper is mainly concerned about measurement of financial inclusion and its influence in different countries. According to the results, access to bank services helps in economic development and alleviation of poverty. It is evident from the results that financial inclusion enhances the savings behavior and financial stability of people.

6. Ozili (2018) This study discusses the effects of digital finance on financial inclusion and financial stability. In this study, it is indicated that digital finance technologies like mobile banking and electronic payment systems increase the accessibility of financial systems. It is shown that through digital finance, there is a decrease in transaction costs as well as an increase in convenience for the users.

7. Cesarone et al. (2019) In the article, financial strategies and risk gain methods in investment management are considered. Analytical approaches have been used by the researchers for improving financial decisions and the management of portfolios. According to the findings, financial models play an important role in enhancing investments and minimizing financial risks.

8. Lalzuitluangi & Ramswamy (2019) In this study, entrepreneurship development in the sericulture cluster of Mizoram is the focal point. The authors have examined the role of sericulture in developing small businesses and generating employment. The results reveal that the activities carried out through the cluster system aid in entrepreneurial development and stability in the economy. This study has highlighted the importance of good infrastructure, finance and technology in sustainable development in sericulture.

III. Research Objectives

1. To identify the level of Fintech adaption among sericulture farmers and silk traders in Ramanagara.
2. To analyze the impact of Fintech services and digital payment approaches on financial inclusion among sericulture farmers and silk traders.
3. To find out the relationship between Fintech adoption by sericulture farmers and improvement in financial management of business
4. To analyze the difference between number of year of experience in sericulture, silk traders and satisfaction level with Fintech services.

5. To recommend ways to improve the adaption and usage of digital financial services among sericulture farmers and silk traders in Ramanagara.

IV. Methodology

The present study adopts a descriptive and analytical research design using a quantitative research approach. The descriptive design is used to understand the level of FinTech adoption and financial inclusion among sericulture farmers and silk traders, while the analytical design examines the relationship between FinTech adoption and financial inclusion.

The study was conducted in Ramanagar Taluk, Karnataka, which is an important centre for sericulture and silk-related economic activities. The target population consists of sericulture farmers and silk traders in Ramanagar Taluk who use or have access to digital financial services such as UPI, mobile banking, internet banking, digital payments, and other FinTech services.

The study employs a non-probability convenience sampling technique, with respondents selected based on their accessibility and willingness to participate in the survey. A final sample of 282 respondents was considered for the study. The respondents include sericulture farmers and silk traders from different areas of Ramanagar Taluk.

Primary data were collected using a structured questionnaire administered through Google Forms and direct interaction with respondents. The questionnaire includes demographic questions and statements related to FinTech adoption, digital financial literacy, convenience, accessibility, trust, security, and financial inclusion. A five-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5), was used to measure respondents' opinions.

Secondary data were collected from peer-reviewed journal articles, research papers, and other relevant sources related to FinTech, digital financial services, financial inclusion, agriculture, and sericulture.

The study considers FinTech adoption as the independent variable and financial inclusion as the dependent variable. FinTech adoption is assessed through factors such as digital payment usage, convenience, accessibility, digital financial literacy, trust, and security. Financial inclusion

is measured in terms of access to banking facilities, ease of financial transactions, availability of financial services, and the ability to transfer and receive money through digital platforms.

The collected data were analysed using Microsoft Excel. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize the data. Pearson correlation analysis was used to examine the relationship between FinTech adoption and financial inclusion. Regression analysis was used to determine the influence of FinTech adoption on financial inclusion, while one-way ANOVA was used to examine differences among respondents based on selected demographic characteristics. The reliability of the questionnaire was tested using Cronbach's Alpha, with a value of 0.789, indicating acceptable internal consistency.

Participation in the survey was entirely voluntary. Respondents were informed about the purpose of the study before data collection. The confidentiality and anonymity of respondents were maintained, and the information collected was used solely for academic and research purposes.

Hypothesis

H₀: FinTech adoption has no significant influence on financial inclusion among sericulture farmers and silk traders in Ramanagar Taluk.

H₁: FinTech adoption has a significant positive influence on financial inclusion among sericulture farmers and silk traders in Ramanagar Taluk.

V. Results and Discussion

A. Demographic Profile of Respondents

Out of 282 respondents, 68.09% were male and 31.91% were female. In terms of age, respondents aged 36–45 years (25.89%) formed the largest group, followed closely by those aged 46–55 years (24.47%). Regarding education, 28.01% had primary education, while 21.63% were illiterate and 21.28% had completed high school. Occupation-wise, sericulture farmers (62.41%) formed the majority, followed by silk traders (31.21%). Regarding monthly income, 34.40% earned below ₹25,000 and 33.69% earned between ₹25,001–₹50,000, indicating that most respondents belonged to low- and middle-income groups. Most respondents (64.54%) resided in rural areas. In terms of experience, 40.78% had

less than five years of experience in sericulture or silk trading.

Regarding financial access and FinTech awareness, 92.91% of respondents had a bank account, while 82.98% were aware of FinTech services. However, only 8.16% considered themselves highly aware, while 40.07% reported being slightly aware, indicating a need for greater digital financial literacy. UPI (51.77%) was the most commonly used FinTech service, followed by mobile banking (21.63%). Nearly half of the respondents (48.23%) used FinTech services daily, and receiving payments (31.91%) was the most common purpose for using these services.

Overall, the demographic profile shows that the study primarily represents male sericulture farmers and silk traders from rural areas, with a large proportion having lower levels of formal education and relatively limited experience. At the same time, the high level of bank-account ownership and growing use of UPI indicate a strong foundation for FinTech adoption and financial inclusion.

B. Correlation Analysis (H1)

A Pearson correlation was conducted to examine the relationship between the convenience of digital payment applications and the ease of understanding and operating FinTech applications among sericulture farmers and silk traders in Ramanagara.

Relationship	r	p
Convenience of digital payment applications ↔ Ease of operating FinTech applications	0.410	< .05

A positive, statistically significant moderate correlation was found ($r = 0.410$, $p < .05$). This indicates that respondents who considered digital payment applications convenient were also more likely to find FinTech applications easy to understand and operate.

C. Multiple Regression Analysis (H2)

A multiple regression analysis was conducted to examine the influence of preference for FinTech payments and trust in FinTech services on financial inclusion among sericulture farmers and silk traders in Ramanagara.

Regression Statistic	Value
Multiple R	0.560
R Square	0.310
Adjusted R Square	0.310
Observations	282

The regression model was statistically significant, $F(2, 279) = 63.36$, $p < .001$, with an R^2 of 0.310, indicating that 31.0% of the variation in financial inclusion is explained by the selected FinTech-related factors.

Predictor Variable	β	Std. Error	t-Stat	p-value
Preference for FinTech payments	0.291	0.05	5.39	< .001
Trust in FinTech services	0.328	0.06	5.96	< .001

Both predictors showed a significant positive influence on financial inclusion ($p < .001$). Trust in FinTech services had a slightly stronger influence ($\beta = 0.328$) than preference for FinTech payments ($\beta = 0.291$).

D. One-Way ANOVA (H3)

A one-way ANOVA was conducted to examine whether satisfaction with FinTech services differs based on years of experience in sericulture and silk trading among respondents in Ramanagara.

Source	SS	df	F	p
Between Groups	448.60	1	455.80	< .001
Within Groups	553.12	562	—	—
Total	1001.72	563	—	—

The ANOVA result was statistically significant, $F(1, 562) = 455.80$, $p < .001$, indicating a significant difference in satisfaction with FinTech services among respondents with different levels of experience.

VI. Conclusion

The present study examined the role and impact of FinTech adoption on financial inclusion among 282 sericulture farmers and silk traders in Ramanagara. The findings indicate that FinTech services have an important role in improving access to and convenience of financial services. The correlation analysis found a positive relationship between the convenience of digital payment applications and the ease of understanding and operating FinTech applications ($r = 0.410$, $p < .05$), indicating that

ease of use is an important factor in FinTech adoption. The regression analysis further showed that preference for FinTech payments ($\beta = 0.291$, $p < .001$) and trust in FinTech services ($\beta = 0.328$, $p < .001$) significantly influence financial inclusion, with the model explaining 31% of the variation ($R^2 = 0.310$). The ANOVA results also showed a statistically significant difference in satisfaction with FinTech services based on respondents' years of experience ($F = 455.80$, $p < .001$). These findings suggest that FinTech is not merely a convenient payment option but an important tool for improving financial accessibility and supporting financial transactions among sericulture farmers and silk traders. However, challenges such as lack of digital knowledge, poor internet connectivity, security concerns, lack of trust, and technical problems may limit effective adoption. Strengthening digital financial literacy, improving digital infrastructure, increasing awareness, and building trust in digital financial services can therefore support wider and more effective FinTech adoption.

Overall, the study contributes to the understanding of FinTech adoption and financial inclusion in the sericulture sector, particularly among farmers and silk traders in Ramanagara. The findings provide useful insights for financial institutions, FinTech service providers, government agencies, and other stakeholders to develop more accessible, secure, and user-friendly digital financial services that can strengthen financial inclusion in the sericulture community.

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