



International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A STUDY ON FINTECH INNOVATIONS AND THEIR IMPACT ON CONSUMER FINANCIAL BEHAVIOUR IN ERODE DISTRICT OF TAMIL NADU

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ABSTRACT :

Financial Technology (FinTech) has significantly changed the delivery of financial services by introducing digital payment systems, mobile banking, internet banking, digital wallets and other technology-enabled financial solutions. These innovations aim to improve transaction speed, convenience, accessibility and financial inclusion. However, the effectiveness of FinTech depends on consumer awareness, digital financial literacy, perceived security, trust and ease of use. This study proposes to examine FinTech adoption and its relationship with consumer financial behaviour in Erode District, Tamil Nadu. The research framework considers consumer awareness, usage frequency, perceived benefits, security concerns, satisfaction and continued usage intention. A sample of 250 respondents is proposed, with primary data to be collected through a structured questionnaire. Percentage analysis, chi-square testing, correlation and multiple regression are identified as suitable statistical techniques. The study is expected to contribute to an understanding of the factors associated with digital financial service adoption and provide practical recommendations for financial institutions, FinTech providers and policymakers.

Keywords: FinTech innovations, digital payments, consumer behaviour, financial literacy, UPI, customer satisfaction, digital banking, Erode District.

Introduction

Financial Technology, commonly known as FinTech, refers to the use of technology to develop, improve and deliver financial services. It integrates financial activities with digital platforms to simplify transactions and improve the accessibility of banking and other financial services. Traditional financial services often require customers to visit bank branches, complete paperwork and wait for transactions to be processed. FinTech innovations have reduced the need for several such activities by enabling customers to transfer money, pay bills, check balances and make purchases through digital devices. In India, important FinTech developments include the Unified Payments Interface (UPI), QR-code payments, mobile banking, internet banking, digital wallets, electronic Know Your Customer processes and app-based financial services.

The National Payments Corporation of India publishes official UPI transaction statistics, demonstrating the importance of digital payment infrastructure in the Indian financial system (NPCI, n.d.). FinTech adoption is influenced by both technological and behavioural factors. Consumers may prefer digital services because of convenience, speed and accessibility. At the same time, concerns about online fraud, privacy, failed transactions and unfamiliar technology may discourage adoption. Digital financial literacy is particularly important because consumers must understand how to operate digital platforms, protect their credentials and identify suspicious transactions. The Reserve Bank of India has also emphasised financial inclusion and financial literacy through its policy initiatives (RBI, 2025). Against this background, the present study proposes to examine FinTech innovations and consumer financial behaviour in Erode District, Tamil Nadu.

Statement of the Problem

The expansion of digital financial services has created new opportunities for consumers to access financial products and perform transactions conveniently. Nevertheless, consumers differ in their ability and willingness to adopt these technologies.

Some consumers may use UPI and mobile banking regularly, whereas others may prefer cash or branch-based banking because of limited digital knowledge, security concerns or lack of confidence. Even regular users may experience transaction failures, technical problems and uncertainty about fraud protection.

Therefore, it is important to investigate the factors associated with FinTech adoption and understand how consumers perceive its benefits and limitations. This study focuses on awareness, usage patterns, financial literacy, trust, perceived security and satisfaction among consumers in Erode District.

Need and Significance of the Study

The study is relevant for the following reasons:

1. **Consumer awareness:** It can identify the level of consumer awareness regarding different FinTech services.
2. **Digital financial literacy:** It can examine whether consumers possess the knowledge needed to use digital financial services responsibly.
3. **Security and trust:** It can identify common concerns that may influence the adoption of digital financial products.
4. **Customer satisfaction:** It can assess consumer perceptions of convenience, speed and service quality.
5. **Financial institutions:** The results may help banks improve customer education, digital interfaces and transaction support.
6. **Policy implications:** The study may help identify areas where financial literacy programmes and consumer protection initiatives require greater attention.

Review of Literature

Babu et al. (2024) investigated perceived risks and challenges associated with FinTech adoption in India. Their research highlighted concerns involving security and privacy, lack of awareness, regulatory uncertainty and perceived complexity. These issues provide a useful foundation for studying barriers to FinTech adoption.

Yadav (2024) examined trust and the adoption of digital financial services in India. The study discussed the importance of education, identity documentation, smartphone proficiency, digital infrastructure and trust in understanding the use of digital financial services.

Dahiya et al. (2026) examined FinTech adoption in India using a framework incorporating digital literacy, perceived risk and trust. Their findings indicated that digital literacy was positively related to trust and adoption, while perceived risk had a negative relationship with adoption. These findings support the theoretical relevance of literacy and trust in the present research.

Research gap

Previous studies have investigated FinTech adoption, perceived risk, digital literacy and trust in different Indian populations. However, the extent to which these factors relate to consumer financial behaviour may vary across geographical areas and consumer groups.

The study focuses on Erode District and brings together awareness, usage frequency, perceived usefulness, ease of use, financial literacy, security concerns, trust and satisfaction within a single research framework.

The study is intended to provide district-level evidence. It does not assume that the selected relationships are unexplored in the existing literature.

Objectives of the Study

1. To examine consumer awareness and usage patterns of FinTech innovations in Erode District.
2. To identify the major benefits perceived by consumers when using FinTech services.
3. To analyse consumer perceptions regarding the security and reliability of digital financial services.
4. To examine the relationship between digital financial literacy and FinTech adoption.
5. To assess the relationship between FinTech adoption and consumer satisfaction.
6. To identify factors associated with consumers' intention to continue using FinTech services.

Hypotheses of the Study

- **H₀₁:** There is no significant association between demographic characteristics and FinTech adoption.
- **H₀₂:** There is no significant relationship between digital financial literacy and FinTech adoption.
- **H₀₃:** There is no significant relationship between perceived security, consumer trust and FinTech adoption.
- **H₀₄:** Perceived usefulness and ease of use do not significantly influence FinTech adoption.
- **H₀₅:** There is no significant relationship between FinTech adoption and consumer satisfaction.
- **H₀₆:** Digital financial literacy, perceived security, trust and perceived usefulness do not significantly explain continued usage intention.

Research Methodology

Research design

The study adopts a proposed descriptive and analytical research design. The descriptive component will summarise respondents' demographic characteristics, awareness and usage patterns. The analytical component will examine relationships among the study variables.

Area of the study

The proposed geographical area is Erode District, Tamil Nadu, India.

Population of the study

The target population comprises adult consumers who use, or have experience with, digital financial services such as UPI, mobile banking, internet banking and digital wallets.

Sample size

The sample size is 250 respondents. This is the intended number of valid respondents for the research design, not evidence that 250 questionnaires have already been collected.

Sampling technique

Convenience sampling method has been used, with its limitations clearly acknowledged.

Sources of data

- **Primary data:** Responses collected through a structured questionnaire.
- **Secondary data:** Research articles, academic books, RBI publications and NPCI digital payment statistics.

Tools for data collection

A structured questionnaire include demographic questions, FinTech awareness, service usage, financial literacy, perceived usefulness, ease of use, trust, security concerns and satisfaction. Likert-scale questions can be used to measure perceptions.

Statistical tools

The study used the analysis of percentage analysis, chi-square testing, correlation and multiple regression. Cronbach's alpha have been used to assess the internal consistency of multi-item scales.

Limitations of the study

1. The study is restricted to Erode District.
2. A sample of 250 may not represent all consumers in the district.
3. Self-reported responses may be affected by recall or response bias.
4. FinTech platforms and consumer experiences may change over time.
5. Cross-sectional data can identify associations but generally cannot establish causation.
6. Results depend on the quality of the questionnaire, sampling process and collected responses.

Demographic profile of respondents with Findings

Table 1. Age-wise distribution

Age group	Respondents	Percentage
18–30 years	75	30.0%
31–40 years	70	28.0%
41–50 years	60	24.0%
Above 50 years	45	18.0%
Total	250	100.0%

Interpretation: In the illustrative distribution, respondents aged 18–30 constitute the largest group at 30%, followed by those aged 31–40 at 28%. The distribution includes consumers from different age groups, allowing age-related differences in digital financial service usage to be investigated.

Table 2. Gender-wise distribution

Gender	Respondents	Percentage
Male	135	54.0%
Female	115	46.0%
Total	250	100.0%

Interpretation: The example includes 54% male respondents and 46% female respondents. Actual conclusions about gender representation must be based on the completed survey.

Table 3. Educational qualification

Qualification	Respondents	Percentage
School education	45	18.0%
Undergraduate	80	32.0%
Postgraduate	75	30.0%
Other qualifications	50	20.0%
Total	250	100.0%

Interpretation: Undergraduate respondents account for 32% of the hypothetical sample, while postgraduate respondents account for 30%. Education can be examined as a potential factor associated with digital financial literacy and technology adoption.

Awareness of FinTech innovations

Table 4. Awareness of different FinTech services

FinTech service	Respondents aware	Percentage
UPI and QR-code payments	235	94.0%
Mobile banking	210	84.0%
Internet banking	185	74.0%
Digital wallets	170	68.0%
Digital lending applications	125	50.0%

Note: Multiple responses are permitted, so the percentages need not total 100%.

Interpretation: In the illustrative results, awareness is highest for UPI and QR-code payments at 94%, while awareness of digital lending applications is 50%. This example demonstrates the difference in awareness that a survey may reveal across financial technology categories.

Frequency of FinTech usage

Table 5. Frequency of digital financial service usage

Usage frequency	Respondents	Percentage
Daily	100	40.0%
Several times a week	85	34.0%
Once a week	45	18.0%
Rarely	20	8.0%
Total	250	100.0%

Interpretation: Daily users represent 40% of the illustrative sample. Respondents using FinTech several times a week account for another 34%. Together, these categories represent 74% of respondents, indicating frequent usage within the simulated example.

Major benefits of FinTech innovations

Table 6. Benefits perceived by respondents

Benefit	Respondents	Percentage
Convenience	90	36.0%
Time savings	65	26.0%
Anytime accessibility	45	18.0%
Reduced cash handling	30	12.0%

Easier transaction tracking	20	8.0%
Total	250	100.0%

Interpretation: Convenience is the most frequently selected benefit in the illustrative table, accounting for 36%. Time savings ranks second at 26%. These categories indicate how consumers' perceived benefits can be summarised in the completed research.

Problems encountered while using FinTech

Table 7. Major problems reported

Problem	Respondents	Percentage
Fear of online fraud	80	32.0%
Failed transactions	60	24.0%
Network problems	50	20.0%
Lack of technical knowledge	35	14.0%
Privacy concerns	25	10.0%
Total	250	100.0%

Interpretation: Fear of online fraud is the largest category in this hypothetical distribution at 32%, followed by failed transactions at 24%. If the actual survey confirms these concerns, banks and FinTech providers could strengthen fraud-awareness programmes and improve transaction-resolution procedures.

Overall consumer satisfaction

Table 8. Satisfaction with FinTech services

Satisfaction level	Respondents	Percentage
Highly satisfied	70	28.0%
Satisfied	100	40.0%
Neutral	50	20.0%
Dissatisfied	20	8.0%
Highly dissatisfied	10	4.0%
Total	250	100.0%

Interpretation: In this illustrative table, 68% of respondents are either satisfied or highly satisfied with FinTech services. Neutral responses account for 20%, while the combined dissatisfied categories represent 12%. These figures are examples only and cannot establish the actual satisfaction level of consumers in Erode District.

Hypothesis Testing: Statistical Analysis Plan

The following approach specifies how each hypothesis should be tested.

Association between demographic characteristics and FinTech adoption

- Null hypothesis (H_{01}): There is no significant association between demographic characteristics and FinTech adoption.
- Test: Pearson chi-square test.
- Variables: Age, gender, education or income category and FinTech usage category.
- Decision rule: If the p-value is below 0.05 and the test assumptions are satisfied, reject the relevant null hypothesis.

The actual chi-square statistic, degrees of freedom and p-value require a respondent-level contingency table. The marginal totals in Tables 1–8 are insufficient to calculate the result.

Relationship between digital financial literacy and adoption

- Null hypothesis (H_{02}): There is no significant relationship between digital financial literacy and FinTech adoption.
- Test: Pearson correlation for suitable approximately continuous scale scores; Spearman correlation may be appropriate for ordinal or non-normally distributed measures.
- Variables: A digital financial literacy score and a FinTech adoption score.

A positive, statistically significant coefficient would support an association between higher literacy and adoption. It would not prove that literacy causes adoption.

Security, trust and FinTech adoption

- Null hypothesis (H_{03}): Perceived security and consumer trust have no significant relationship with FinTech adoption.
- Test: Correlation and, where suitable, multiple regression.
- Variables: Security perception, trust and adoption scores.

Higher trust and stronger perceived security may theoretically be associated with greater adoption. The direction and significance of the relationship must be established from the actual responses.

Usefulness, ease of use and adoption

- Null hypothesis (H_{04}): Perceived usefulness and ease of use do not significantly influence FinTech adoption.
- Test: Multiple regression.
- Dependent variable: FinTech adoption score.
- Independent variables: Perceived usefulness and perceived ease of use, with relevant control variables.

Report regression coefficients, standard errors, p-values, confidence intervals and model fit. The term “influence” should be interpreted as a statistical relationship unless the research design supports causal inference.

Adoption and customer satisfaction

- Null hypothesis (H_{05}): There is no significant relationship between FinTech adoption and consumer satisfaction.
- Test: Correlation or regression, depending on the research question and measurement design.
- Variables: Adoption score and satisfaction score.

A significant positive coefficient would indicate that higher adoption scores tend to accompany higher satisfaction scores in the sampled respondents.

Factors associated with continued usage intention

- Null hypothesis (H_{06}): Digital financial literacy, perceived security, trust and perceived usefulness do not significantly explain continued usage intention.
- Test: Multiple regression.
- Dependent variable: Continued usage intention.
- Independent variables: Digital financial literacy, perceived security, trust and perceived usefulness.

The regression should report R^2 , adjusted R^2 , the overall model test, individual coefficients, confidence intervals and appropriate diagnostic checks.

Suggestions and Recommendations

Based on the research questions and the issues identified in the literature, the following recommendations can be examined against the eventual findings.

1. Improve digital financial literacy. Banks and financial institutions should offer practical guidance on UPI payments, mobile banking, transaction verification and safe digital practices.
2. Strengthen consumer security awareness. Consumers should be educated about suspicious links, fraudulent calls, credential theft and the importance of never sharing confidential authentication details.
3. Improve transaction reliability. Financial service providers should make transaction status, reversal procedures and complaint-resolution processes easier to understand.
4. Develop user-friendly applications. Clear instructions, accessible interfaces and local-language support can help consumers with different levels of digital experience.
5. Build consumer trust. Transparent communication about fees, privacy practices and security procedures can help consumers make informed decisions.
6. Provide targeted assistance. Digital literacy initiatives should be designed around the needs of consumers who have limited smartphone experience or difficulty using online services.
7. Encourage responsible digital finance. Consumers should be encouraged to verify transactions, monitor account activity and understand the terms of digital lending and other financial products.

Conclusion

FinTech innovations are changing how consumers access and use financial services. Digital payments, mobile banking, internet banking and related technologies offer opportunities to improve convenience and access. Nevertheless, adoption also depends on consumers' knowledge, perceptions of security, trust in service providers and satisfaction with their experiences. The proposed study of 250 consumers in Erode District provides a framework for investigating these relationships. Percentage analysis can describe awareness and usage patterns, while chi-square testing, correlation and regression can examine associations among demographic, technological and behavioural variables.

The study's contribution will depend on the quality of its primary data and the validity of its statistical analysis. Once consider the suggestions of this study, to support financial literacy programmes, improved customer service and responsible digital financial inclusion.

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