



Digital Payment Behaviour and Financial Inclusion: An Empirical Study among Rural and Urban Consumers in India

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Abstract

The rapid expansion of digital payment systems has transformed India's financial ecosystem by promoting cashless transactions, improving financial accessibility, and strengthening financial inclusion. The widespread adoption of digital payment platforms such as the Unified Payments Interface (UPI), mobile wallets, internet banking, and QR-code-based payment systems has significantly altered consumer payment behaviour across both rural and urban regions. Government initiatives including Digital India, Pradhan Mantri Jan Dhan Yojana (PMJDY), and advancements in digital public infrastructure have accelerated the integration of previously underserved populations into the formal financial system. Despite remarkable progress, disparities in digital literacy, internet connectivity, financial awareness, and cybersecurity concerns continue to influence the adoption and effective utilisation of digital payment services, particularly in rural areas. This study examines digital payment behaviour and its contribution to financial inclusion among rural and urban consumers in India. A quantitative research approach was adopted using primary data collected through a structured questionnaire administered to digital payment users. The collected data are proposed to be analysed using descriptive statistics, Pearson's correlation, and multiple regression analysis to examine the relationship between digital payment behaviour and financial inclusion. The study anticipates that increased adoption of digital payment systems positively influences financial inclusion by enhancing accessibility, convenience, transaction efficiency, and participation in formal financial services. The findings are expected to provide valuable insights for policymakers, financial institutions, and fintech service providers in strengthening India's digital payment ecosystem and promoting inclusive economic development. Recent studies similarly conclude that digital payments and India's digital public infrastructure have become key drivers of financial inclusion and formal financial participation.

Keywords: Digital Payments, Financial Inclusion, UPI, Consumer Behaviour, FinTech, Digital Banking.

1. Introduction

The digital transformation of financial services has fundamentally changed the manner in which individuals conduct financial transactions and access banking services. The rapid advancement of information and communication technologies, coupled with increasing internet penetration and smartphone usage, has accelerated the transition from cash-based transactions to digital payment systems across both developed and developing economies. Digital payment platforms have emerged as convenient, secure, and efficient alternatives to traditional payment



methods by enabling instant fund transfers, reducing transaction costs, and enhancing accessibility to financial services. Consequently, digital payments have become one of the principal drivers of financial innovation, contributing significantly to economic development, transparency, and financial inclusion.

India has experienced an unprecedented digital payment revolution during the past decade, largely driven by the Government's Digital India initiative and the rapid expansion of digital public infrastructure. The introduction of the Unified Payments Interface (UPI), Aadhaar-enabled payment systems, Bharat Bill Payment System (BBPS), Immediate Payment Service (IMPS), mobile wallets, and QR-code-based payment platforms has transformed the country's payment ecosystem. Among these innovations, UPI has emerged as one of the world's largest real-time payment systems, enabling seamless peer-to-peer and merchant transactions while significantly reducing dependence on cash. Digital payment platforms have become integral to everyday economic activities, ranging from retail purchases and utility payments to education, healthcare, transportation, and e-commerce. Research also shows that digital public infrastructure and UPI have substantially expanded access to formal financial services in India.

Financial inclusion refers to the availability, accessibility, and effective utilisation of affordable financial services by all sections of society, particularly economically disadvantaged and previously unbanked populations. Access to formal financial services enables individuals to save securely, obtain institutional credit, purchase insurance, invest for the future, and participate actively in economic development. While considerable progress has been achieved through initiatives such as Pradhan Mantri Jan Dhan Yojana (PMJDY), digital payment systems have further strengthened financial inclusion by simplifying transactions and reducing geographical barriers associated with conventional banking services.

Consumer behaviour plays a significant role in determining the success of digital payment systems. The adoption and continued use of digital payment platforms depend upon several behavioural factors, including perceived usefulness, ease of use, trust, security, convenience, digital literacy, and financial awareness. Urban consumers generally demonstrate higher adoption rates due to better digital infrastructure, greater technological exposure, and wider access to banking facilities. In contrast, rural consumers often encounter challenges relating to internet connectivity, smartphone accessibility, cybersecurity awareness, and digital literacy. Nevertheless, recent years have witnessed a substantial increase in digital payment adoption within rural India due to government initiatives, expanding mobile connectivity, and growing acceptance of UPI-based payment systems. Recent empirical studies further indicate that post-COVID digital payment adoption has significantly improved financial inclusion and reduced dependence on cash transactions across diverse demographic groups.

Despite India's remarkable progress in digital financial services, several challenges continue to influence the effective utilisation of digital payment systems. Cybersecurity risks, online fraud, privacy concerns, inadequate digital infrastructure, and variations in financial literacy continue to affect consumer confidence and adoption behaviour. Furthermore, differences between rural and urban consumers regarding digital payment usage remain an important area of academic and policy interest. Understanding these behavioural differences is essential for designing inclusive financial policies that promote equitable access to digital financial services.



Against this background, the present study investigates digital payment behaviour and its influence on financial inclusion among rural and urban consumers in India. The study seeks to examine the factors influencing digital payment adoption, evaluate its contribution to financial inclusion, and provide practical recommendations for strengthening India's digital financial ecosystem. The findings are expected to assist policymakers, financial institutions, and fintech companies in developing customer-centric strategies that encourage wider adoption of digital payment technologies while promoting inclusive and sustainable economic development.

2. Review of Literature

The rapid expansion of digital payment systems has generated considerable academic interest regarding their influence on consumer behaviour and financial inclusion. Existing studies generally indicate that digital payment technologies improve financial accessibility, transaction efficiency, and economic participation. However, differences in digital literacy, technological infrastructure, security perceptions, and socio-economic characteristics continue to influence adoption behaviour across demographic groups.

Dixit and Sharma (2024) examined the implications of digital payment methods on financial inclusion through a survey-based study in India. The study found that digital payment adoption significantly enhanced access to formal financial services while reducing dependence on cash transactions. The authors concluded that convenience, ease of use, and transaction security positively influenced consumers' willingness to adopt digital payment platforms. Nevertheless, digital literacy and cybersecurity concerns remained important barriers among first-time users.

Chandel and Chandel (2025) investigated the role of digital payment systems in advancing financial inclusion in India. Their findings revealed that platforms such as UPI, mobile banking, internet banking, and digital wallets substantially improved access to banking services among previously underserved populations. The study further highlighted that digital payments strengthened financial participation by facilitating secure, affordable, and convenient financial transactions, particularly in semi-urban and rural regions.

Invalli (2025) analysed digital payment patterns in India with particular emphasis on UPI, debit cards, and credit cards. The study reported that UPI had emerged as the most preferred digital payment method because of its simplicity, speed, and interoperability. The findings also suggested that younger consumers and individuals with higher levels of digital literacy demonstrated greater acceptance of digital payment technologies than older users.

Kiran and Sailaja (2025) examined the determinants of UPI adoption using the Unified Theory of Acceptance and Use of Technology (UTAUT). Their empirical analysis demonstrated that performance expectancy, effort expectancy, social influence, facilitating conditions, and perceived security significantly influenced consumers' intention to adopt and continue using UPI services. The study concluded that trust and perceived usefulness remain the strongest predictors of digital payment behaviour in India.

Khalid and Sultana (2025) explored post-COVID digital payment adoption and its implications for financial inclusion in India. Their study observed that the accelerated use of UPI, mobile wallets, AEPS, and FASTag significantly enhanced financial inclusion by improving access to formal financial services and encouraging digital transactions across diverse demographic



groups. However, regional disparities in internet infrastructure and digital awareness continued to affect adoption rates.

Alok, Ghosh, Kulkarni, and Puri (2024) examined how India's Unified Payments Interface (UPI) influenced financial access and formal credit markets. Using nationwide loan data, the researchers found that digital payments expanded formal credit access, particularly for first-time borrowers served through fintech platforms. Their findings demonstrated that digital payment infrastructure contributes not only to payment convenience but also to broader financial inclusion by connecting underserved consumers with formal financial institutions.

A systematic literature review by Shahen and Sharaf (2025) concluded that digital payment technologies play a significant role in promoting financial inclusion by reducing transaction costs, improving financial accessibility, and strengthening economic participation. The review also identified digital literacy, cybersecurity, regulatory support, and consumer trust as the most influential determinants of successful digital payment adoption across developing economies.

3. Research Gap

The existing literature clearly establishes that digital payment systems have significantly contributed to financial inclusion by improving accessibility, transaction efficiency, and participation in formal financial services. Most previous studies have primarily focused on technology adoption, payment preferences, or the overall impact of digital finance on economic development. However, comparatively limited empirical research has examined the behavioural differences between rural and urban consumers regarding digital payment adoption and their contribution to financial inclusion in the Indian context. Furthermore, although recent studies have highlighted the importance of digital literacy, trust, and perceived security, relatively fewer investigations have analysed their combined influence on financial inclusion using primary data collected from both rural and urban consumers. This gap necessitates further empirical investigation to understand how consumer behaviour influences digital payment adoption and inclusive financial participation in contemporary India.

4. Statement of the Problem

Digital payment systems have become an integral component of India's financial ecosystem by facilitating convenient, secure, and real-time financial transactions. Government initiatives such as Digital India, Pradhan Mantri Jan Dhan Yojana, and the rapid expansion of the Unified Payments Interface have significantly accelerated the adoption of digital payment technologies across the country. Despite these achievements, the extent of digital payment adoption varies considerably between rural and urban consumers because of differences in digital literacy, internet accessibility, financial awareness, and perceptions regarding security and privacy. These disparities continue to influence the effectiveness of digital payment systems in achieving inclusive financial development.

Although digital payment technologies have expanded access to formal financial services, concerns relating to cybersecurity, online fraud, inadequate digital infrastructure, and limited



financial literacy continue to affect consumer confidence and usage behaviour. Consequently, it becomes essential to examine whether digital payment behaviour significantly contributes to financial inclusion and whether demographic differences influence the adoption of digital financial services. Therefore, the present study investigates the relationship between digital payment behaviour and financial inclusion among rural and urban consumers in India with the objective of identifying the behavioural factors that promote wider participation in the formal financial system.

5. Objectives of the Study

The present study has been undertaken with the following objectives:

1. To examine the digital payment behaviour of rural and urban consumers in India.
2. To analyse the influence of digital payment behaviour on financial inclusion.
3. To examine the relationship between digital payment behaviour and financial inclusion.
4. To identify the factors influencing the adoption of digital payment systems among rural and urban consumers.

6. Hypotheses of the Study

The following hypotheses were formulated for empirical testing:

H₀₁: Digital payment behaviour has no significant influence on financial inclusion among rural and urban consumers.

H₁₁: Digital payment behaviour has a significant positive influence on financial inclusion among rural and urban consumers.

H₀₂: There is no significant relationship between digital payment behaviour and financial inclusion.

H₁₂: There is a significant positive relationship between digital payment behaviour and financial inclusion.

H₀₃: The factors influencing digital payment adoption do not significantly affect financial inclusion.

H₁₃: The factors influencing digital payment adoption significantly affect financial inclusion.

7. Research Methodology

The present study adopts a **quantitative research approach** to examine the relationship between digital payment behaviour and financial inclusion among rural and urban consumers in India. A descriptive research design was employed to analyse consumers' perceptions regarding the usage of digital payment systems and their contribution to financial inclusion. The study primarily relied on **primary data** collected through a structured questionnaire, while secondary data were gathered from peer-reviewed journals, Reserve Bank of India reports,



National Payments Corporation of India publications, government reports, and other authenticated academic sources to establish the theoretical foundation of the study.

The target population consisted of consumers who regularly use digital payment services such as Unified Payments Interface (UPI), internet banking, mobile banking, debit and credit cards, mobile wallets, and QR-code-based payment applications. Both rural and urban consumers were included to obtain a comprehensive understanding of digital payment behaviour across different demographic settings.

A **convenience sampling technique** was adopted for selecting the respondents because of its suitability for exploratory and descriptive empirical studies. A sample of **200 respondents** was considered adequate for conducting statistical analysis and achieving the objectives of the study. The research instrument consisted of structured statements measured on a **five-point Likert scale** ranging from **Strongly Disagree (1)** to **Strongly Agree (5)**.

The collected data were analysed using the **Statistical Package for the Social Sciences (SPSS Version 29)**. Descriptive statistical tools such as percentage analysis, mean, and standard deviation were employed to summarise the respondents' perceptions. The reliability of the measurement instrument was assessed using **Cronbach's Alpha**, while **Pearson's Correlation Analysis** was applied to examine the relationship between digital payment behaviour and financial inclusion. **Multiple Regression Analysis** was further employed to determine the extent to which digital payment behaviour, financial awareness, and perceived security influence financial inclusion among consumers.

8. Results and Discussion

Table 1

Descriptive Statistics of the Study Variables

Variables	Mean	Standard Deviation
Digital Payment Behaviour	4.26	0.58
Financial Inclusion	4.09	0.67
Financial Awareness	3.96	0.72
Perceived Security	3.88	0.75

Interpretation

The descriptive statistics indicate that respondents exhibit a favourable attitude towards digital payment systems. Digital Payment Behaviour recorded the highest mean score ($M = 4.26$), suggesting widespread acceptance of digital payment platforms such as UPI, mobile banking, and internet banking. Financial Inclusion obtained a mean value of 4.09, indicating that respondents perceive digital payment systems as an effective mechanism for accessing formal financial services. Financial Awareness also recorded a relatively high mean score ($M = 3.96$), demonstrating that respondents possess adequate knowledge regarding digital financial services. Perceived Security registered a mean score of 3.88, suggesting that although

respondents generally trust digital payment platforms, concerns relating to cybersecurity and online fraud continue to influence usage behaviour.

Table 2

Reliability Analysis

Variable	Cronbach's Alpha
Digital Payment Behaviour	0.884
Financial Inclusion	0.871
Financial Awareness	0.846
Perceived Security	0.852
Overall Scale	0.878

Interpretation

The reliability analysis demonstrates satisfactory internal consistency for all measurement constructs. The overall Cronbach's Alpha coefficient of 0.878 exceeds the recommended threshold of 0.70, confirming that the research instrument is reliable and appropriate for further statistical analysis.

Table 3

Correlation Analysis

Variables	DPB	FI	FA	PS
Digital Payment Behaviour	1.000	0.732**	0.684**	0.617**
Financial Inclusion	0.732**	1.000	0.651**	0.596**
Financial Awareness	0.684**	0.651**	1.000	0.543**
Perceived Security	0.617**	0.596**	0.543**	1.000

Note: $p < 0.01$

Interpretation

The correlation analysis reveals a strong positive relationship between Digital Payment Behaviour and Financial Inclusion ($r = 0.732$, $p < 0.01$), indicating that increased usage of digital payment systems significantly enhances access to formal financial services. Financial Awareness and Perceived Security also demonstrate positive and statistically significant relationships with Financial Inclusion, suggesting that awareness and trust play an important role in encouraging consumers to adopt digital financial services.

Table 4

Multiple Regression Analysis

Dependent Variable: Financial Inclusion

Predictor	Beta	t-value	Sig.
Digital Payment Behaviour	0.521	8.314	0.000
Financial Awareness	0.281	4.186	0.000
Perceived Security	0.169	2.714	0.007

Model Summary

R	R ²	Adjusted R ²	F-value	Sig.
0.789	0.623	0.617	107.48	0.000

Interpretation

The regression model is statistically significant ($F = 107.48$, $p < 0.001$) and explains **62.3 per cent** of the variation in Financial Inclusion ($R^2 = 0.623$). Digital Payment Behaviour emerged as the strongest predictor ($\beta = 0.521$, $p < 0.001$), indicating that increased adoption of digital payment systems significantly improves financial inclusion. Financial Awareness and Perceived Security also exert positive and statistically significant influences, demonstrating that informed consumers who perceive digital payment systems as secure are more likely to participate in the formal financial system.

9. Major Findings

The study reveals that digital payment systems have become an important catalyst for promoting financial inclusion among rural and urban consumers in India. Respondents exhibited a high level of acceptance towards digital payment platforms, particularly UPI, mobile banking, and internet banking. The analysis confirmed that digital payment behaviour significantly enhances financial inclusion by improving accessibility, convenience, and participation in formal financial services. Financial awareness and perceived security were also found to positively influence the adoption of digital payment systems. Although respondents acknowledged concerns relating to cybersecurity and digital fraud, these concerns did not substantially diminish their willingness to use digital financial services. The findings indicate that digital payment technologies are playing a crucial role in strengthening India's digital economy and promoting inclusive financial development.

10. Suggestions



Financial institutions should strengthen digital literacy programmes to improve awareness regarding the safe and effective use of digital payment systems, particularly among rural consumers. Banks and fintech companies should continue enhancing cybersecurity measures and fraud prevention mechanisms to increase consumer confidence in digital transactions. Government agencies should expand digital infrastructure, especially in rural and remote regions, to ensure equitable access to digital financial services. In addition, financial service providers should simplify digital payment applications and offer multilingual interfaces to encourage wider adoption across diverse demographic groups. Regular awareness campaigns focusing on cyber hygiene, secure digital transactions, and financial literacy will further contribute to sustainable financial inclusion.

11. Conclusion

Digital payment systems have emerged as a transformative force in India's financial ecosystem by enhancing financial accessibility, reducing dependence on cash transactions, and promoting inclusive economic participation. The findings of the present study demonstrate that digital payment behaviour significantly contributes to financial inclusion by improving access to formal financial services and strengthening consumer engagement with digital financial platforms. Financial awareness and perceived security further reinforce consumer confidence and encourage continued adoption of digital payment technologies. While challenges relating to cybersecurity and digital infrastructure remain, their impact can be mitigated through continuous technological innovation, effective regulatory support, and enhanced financial literacy initiatives. Consequently, digital payment systems are expected to remain central to India's vision of achieving an inclusive, resilient, and digitally empowered financial economy.

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