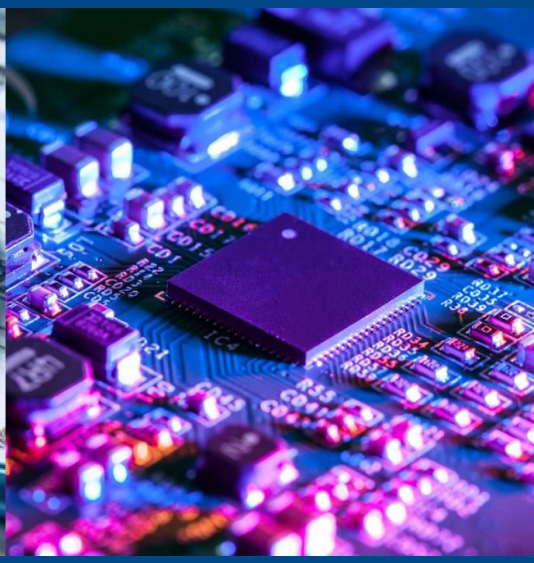
ISSN: 2582-7219





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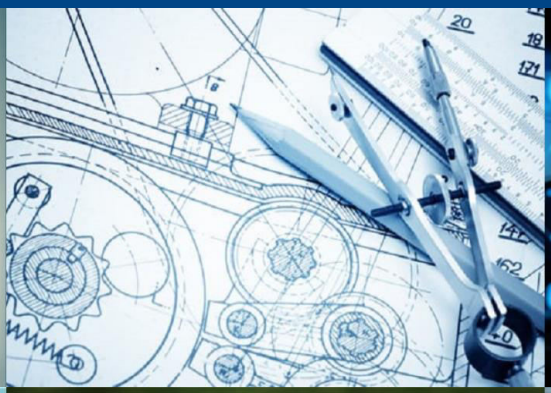

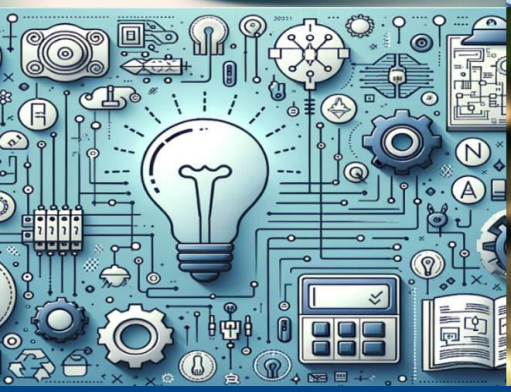

Impact Factor: 8.206 **Volume 9, Issue 4, April 2026**

© 2026 IJMRSET | Volume 9, Issue 4, April 2026| DOI:10.15680/IJMRSET.2026.0904446

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

An Empirical Study on the Impact of UPI and Digital Payment Systems on Cash Dependency and Consumer Behavior in Pune

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ABSTRACT: Indias financial system has changed a lot over the ten years. This change is mostly because of the decisions made by the government. One big decision was the demonetization that happened in 2016. Another big decision was the growth of the Unified Payments Interface also known as UPI. This study looks at how payment systems affect the way people live their lives. It also looks at how much people use cash. The study used survey data from 53 people. It also used information from the Reserve Bank of India and the National Payments Corporation of India. The findings show that people use payments because they are easy and fast. This is more important to people than getting cashback. The study also found that UPI is the popular choice. 86.8 Percent of users prefer it. 84.9 Percent of people use payments every day. The COVID-19 pandemic made people use payments more. This trend has continued after the pandemic. People are concerned about security. It does not stop them from using payments. It makes them more careful when they use payments. Overall, India is moving towards a cashless economy. Payments have become a part of life. Digital payments, UPI and the cashless economy are changing the way people live in India.

KEYWORDS: UPI, Digital Payments, Consumer Behavior, Cash Dependency, Financial Inclusion, Fintech, Cashless Economy

I. INTRODUCTION

The shift from cash to transactions is a change in Indias recent economic history. In November 2016 the Indian government removed currency notes from circulation. This forced people, businesses and banks to use payments. UPI is a part of this change. It is a payment system created by the National Payments Corporation of India. It allows people to send money instantly and cheaply between banks.

Today platforms like Google Pay, PhonePe and Paytm handle billions of transactions every month. They are used for purchases. There is not research on how using UPI affects people's behavior. This study tries to fill this gap. It looks at what makes people want to use payments in India. What stops them from using payments.

Problem Statement

Although UPI has experienced exponential growth in India, there is a lack of empirical evidence on the extent to which cash dependence has decreased due to digital payments, factors that drive continued use of digital payments, and factors that hinder the adoption of digital payments. The available literature primarily concentrates on the number of transactions in the country but does not delve into users' perspectives and behavior patterns related to their usage. This paper aims to fill that gap by analyzing the effects of UPI on consumer behavior in Pune, India.

II. LITERATURE REVIEW

Demonetization as a Structural Catalyst

Agarwal, Ghosh, Li, and Ruan (2020) investigated consumer spending responses to digital payments using the 2016 Indian demonetization as a natural experiment. Their difference-in-differences analysis showed that digital payment usage rose significantly for households with greater prior cash dependence, and critically, spending remained elevated even after cash supply recovered—demonstrating a durable behavioral shift. Manocha, Kejriwal, and Upadhyaya (2019) corroborated this, documenting a statistically significant surge in e-wallet and digital banking transaction

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volumes in the months following the demonetization announcement, confirming that the policy functioned as a structural accelerant for digital adoption that years of financial education programmes had failed to produce.

The UPI Ecosystem and Interoperability

Rastogi, Panse, Sharma, and Bhimavarapu (2021) examined UPI's role in promoting financial literacy, financial inclusion, and economic development using Structural Equation Modelling on a sample of Indian consumers. Their path analysis confirmed that UPI significantly improves financial literacy, which in turn advances financial inclusion and economic development—establishing a multi-stage causal chain. The platform's real-time gross settlement capability across heterogeneous banking institutions, at near-zero transaction cost, eliminated the network effects problem that had historically impeded e-wallet adoption, enabling a unified payment experience irrespective of a consumer's primary banking relationship.

Financial Inclusion and the Rural Dimension

Haque, Abdul, and Jawed (2025) conducted a district-level binary logistic regression study in Aligarh, finding that gender, income, and age were significant predictors of UPI adoption in rural settings, while caste and marital status were not. Their work identified that targeted financial literacy programmes and youth engagement initiatives could meaningfully boost adoption in rural cohorts. Chaturvedi and Sharma (2021) similarly found that UPI had facilitated financial transactions in remote areas, contributing to the growth of digital financial services among populations previously dependent on sparse brick-and-mortar banking infrastructure. The convergence of UPI with Aadhaar-enabled Payment Systems (AePS) has further extended Direct Benefit Transfers (DBT) and remittance access to underserved communities.

Behavioral Determinants: Trust, Convenience, and Incentives

Shree, Pratap, Saroy et al. (2021) deployed a novel survey-based dataset to demonstrate that both the perception of digital payment instruments and trust in the broader banking framework significantly determine payment behavior in India, with prior fraud experience deterring usage in a manner that varies by transaction purpose. Davis (1989)'s Technology Acceptance Model (TAM)—with perceived ease of use and perceived usefulness as core constructs—has been productively applied to UPI adoption contexts. Aljaradat and Shukla (2025) extended TAM by integrating cybercrime experience as a behavioral moderator, finding that perceived benefits, ease of use, grievance redressal, and social influence significantly enhance trust, which in turn strongly predicts adoption intent. Convenience and speed consistently outrank cashback as primary motivators across these studies.

COVID-19 as an Adoption Accelerator

Saroy, Awasthy, Singh, Adki, and Dhal (2022), using a large RBI survey dataset, established that the COVID-19 lockdown was an inflection point for new user onboarding into digital payments. Their analysis found that awareness of digital modes, smartphone and debit card access, and pandemic-relief welfare transfers were the principal drivers of first-time adoption. Importantly, users who had previously abandoned digital payments due to negative experiences switched back during this period. Yadav and Das (2024) extended the analysis to show that while demonetisation's effect on high-value payment channels was limited, COVID-19 lockdowns spurred adoption of new-age payment channels, with UPI transactions growing approximately 70% in volume between 2020 and 2022 (NPCI, 2022)—a shift that appears durable in post-restriction data.

OBJECTIVES OF THE STUDY

- To find out how much UPI and other digital payment systems have made people of ages and genders in India use less cash.
- To see what people think about how easy, fast and secure digital payments are compared to using cash.
- To figure out the things that stop people from using payments. This includes worries about cybersecurity how reliable the technology is and if they know how to use it.
- To look at how the COVID-19 pandemic and special offers helped speed up this change towards payment habits.

III. RESEARCH METHODOLOGY

Research Design

This study uses an approach that describes things and analyzes them. The study mixed survey numbers with observations. The descriptive part explains how people are using payments now. The analytical part looks at how

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different things connect. This includes how age affects how often people use payments and how feeling secure influences whether they keep using them.

Data Collection

The study gathered its data using a survey through Google Forms. This was over four weeks in March 2026. The survey had questions with choices a five-point scale. Yes/no options. It asked about things like age and gender how often people use payments, which platforms they prefer how safe they feel and if they plan to keep using them. A total of 53 valid responses were retained for analysis following data cleaning.

Secondary data were sourced from RBI Digital Payments Reports, NPCI UPI transaction statistics, government Digital India programme documentation, and peer-reviewed publications indexed in ScienceDirect, J-STAGE, and MDPI.

Sampling and Reliability

Convenience sampling was employed given the exploratory nature of the study and resource constraints. The sample skews toward urban, 18–30-year-old, smartphone-literature respondents, which should be considered when generalizing findings. Internal consistency of the measurement instrument was assessed using Cronbach's Alpha (α = 0.711), confirming acceptable reliability across items. Cross-tabulation and thematic analysis were applied to identify demographic patterns and attitudinal clusters within the data.

IV. DATA ANALYSIS AND INTERPRETATION

Demographic Profile

The sample comprised 66% male and 345 female respondents. The age distribution is dominated by 18-30 cohort (64.2%), with 20.8% in the 31-45 bracket and marginal representation from older age groups. This profile reflects both the researcher's network and the documentation higher digital payment penetration among younger, urban demographics.

Figure1 : Gender Distribution of Survey Respondents (n=53)

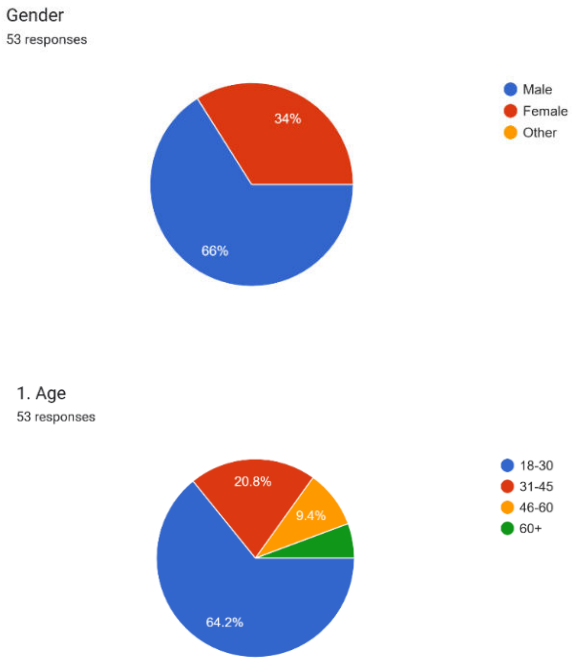

Figure 2: Age Distribution of Respondents

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Digital Payment Usage Frequency

A substantial 84.9% of respondents reported using digital payment method on a daily basis, with only marginal fraction indicating occasional or infrequent use. This finding is empirically significant: it positions digital payments not as a supplementary transactional modality but as a primary behavioral routine-particularly within the 18-30 age cohort where usage is near-universal.

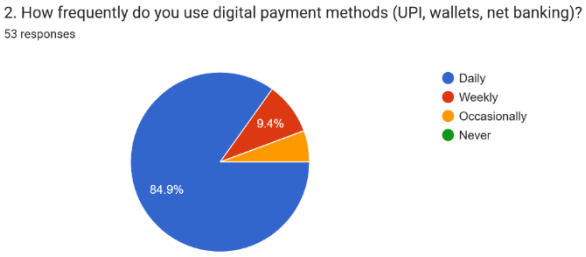

Figure 3: Frequency of Digital Payment Usage

Platform Preference and UPI Dominance

UPI was identified as the primary payment mode by 86.8% of respondents, with net banking, mobile wallets, and debit/credit cards together accounting for the residual 13.2%. This concentration reflects UPI's structural advantages-real-time settlement, zero transaction cost, and seamless interoperability-which collectively produce a dominant platform equilibrium consistent with network effects theory.

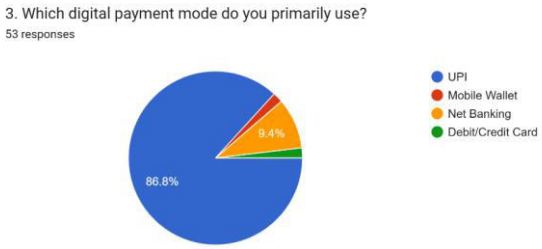

Figure 4: Primary Digital Payment Mode Preference

Cash Dependency Reduction

62.3% of respondents indicated that UPI has "significantly" reduced their dependence on cash, with a further 32.1% reporting moderate reduction. Cumulatively, over 94% of the sample reported meaningful displacement of cash usage-a finding that robustly supports H_1 and corroborates macro-level data form the RBI Digital Payments Index showing Sustained year-on-year increases in digital transaction volume.

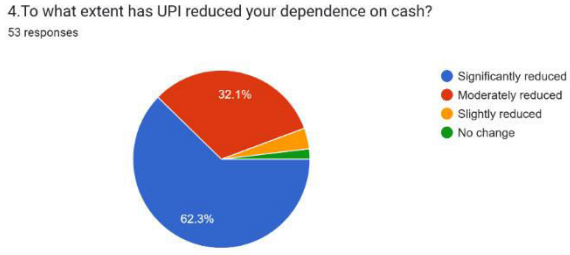

Figure 5: Extent of Cash Dependency Reduction Due to UPI

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Security Perception and Cyber Fraud Concerns

Security perception is broadly positive: 66% of respondents rated digital payment platforms as "secure", with a further 30.2% rating them "very secure". Critically, when probed on the behavioral impact of the fraud concerns, 37.7% reported no change in usage patterns, while 26.4% indicated heightened Caution that digital payment users in India have developed a risk-accommodating rather than risk-aversive behavioral response-consistent with H_2 in the context of continued usage intention.

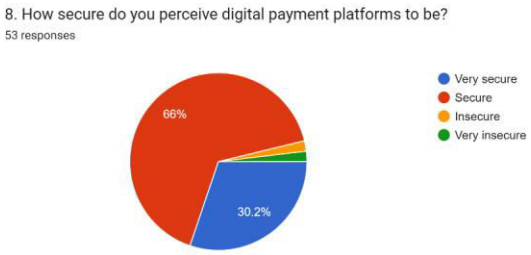

Figure 6: Perceived Security of Digital Payment Platforms

COVID-19 Acceleration and Future Usage Intent

77.4% of respondents confirmed that the COVID-19 pandemic directly increased their digital payment usage, providing survey-level validation of macro-trends documented in pandemic-era transaction data. More significantly, 90.6% expressed very high likelihood of continuing digital payment in future, and 49.1% strongly agreed-with 47.2% agreeing-that India is Moving towards a less-cash economy. The near-universal satisfaction level (~96% satisfied or very satisfied) and an average UPI rating of 4.3/5 across 89% of four- or five-star ratings collectively affirm a stable, positive adoption trajectory.

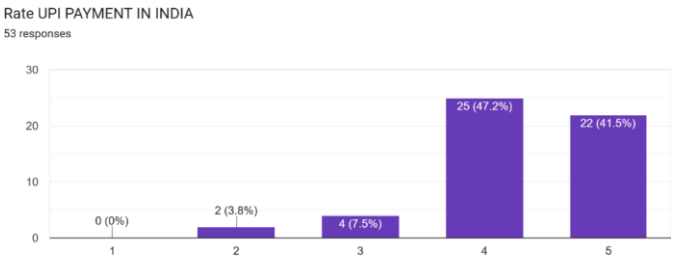

Figure 7: Overall Satisfaction with Digital Payment Services in India

V. FINDINGS

- **Demographic Characteristics** Majority male (66%), majority young (64.2%)—18-30 years. An urban, tech-savvy demographic. Not applicable to rural users or elders.
- **Frequency of Usage** 84.9% use digital payments daily. Not occasional but habitual.
- **Preferring Platform** 86.8% use and prefer UPI due to its zero transaction costs, immediate transfer feature, and interoperability among banks.
- **Decrease in Cash Usage** 94%+ of users reported reduced use of cash. Cash is still in use, but only as a fallback option.
- **Security** 96% view digital payment platforms as safe. In case of fraud concerns, users become cautious and don't cease using digital transactions altogether; they accommodate risk rather than avoid it.

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- **Influence of COVID-19** and Future Intent 77.4% said the coronavirus outbreak made them switch to digital payment modes. 90.6% intend to keep using digital payments. Average UPI satisfaction score: 4.3 out of 5. The habit was adopted.

VI. CONCLUSION

This study shows that digital payment systems, like UPI have changed how people pay for things in India. They have replaced a lot of cash. This change is here to stay. The study found four things.

First people use payments because they are easy and fast. This means that platforms should be designed to be convenient and fast. Second people are smart about risks. They do not stop using payments because of cybersecurity worries. They just become more careful. Third the COVID-19 pandemic made people use payments more. This habit has stayed. Fourth the data shows that India is moving towards a cashless economy. UPI is the reason, for this change. Future studies should look at how digital payments are used in rural areas. They should also look at people over a period. This will help see if people keep using payments in situations. Policymakers should focus on making digital payments more secure. They should teach people skills make networks more reliable. These are the things that will help everyone adopt payments.

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