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Impact of Digital Wallets and UPI Payments on Consumer Spending Habits

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Abstract

Background: India's digital payments landscape has undergone a dramatic shift following the large-scale rollout of the Unified Payments Interface (UPI) and mobile wallet platforms. As cashless transactions become embedded in everyday consumer routines, understanding their behavioural and financial consequences has become central to research in consumer behaviour and fintech policy.
Objective: This study explores how adoption of digital wallets and UPI influences spending frequency, impulsive buying, financial management practices, and user satisfaction levels among Indian consumers.
Methodology: A quantitative, survey-based design was used. Structured questionnaires were administered via Google Forms to 120 respondents drawn from varied demographic backgrounds across India. Descriptive statistics, Chi-Square tests, and One-Way ANOVA were applied for data analysis.
Key Findings: More than half (52.5%) of respondents noted higher spending frequency after adopting digital payments. Around 57.5% felt these platforms make impulsive purchases easier. Google Pay emerged as the dominant platform (24.2%). A sizeable 61.7% had faced at least one security or technical concern, and nearly half (49.1%) expressed overall dissatisfaction with existing platforms.
Conclusion: Digital payment platforms have materially altered consumer spending patterns by increasing transaction convenience and lowering the psychological cost of spending. However, their effect on financial discipline is largely contingent on individual literacy and self-regulatory capacity. Practical implications are drawn for fintech companies, regulatory bodies, and end-users.

Keywords: UPI; Digital Wallets; Consumer Behaviour; Fintech; Impulse Spending; Financial Management; India.

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Introduction

Over the past decade, India's financial services arena has witnessed a profound structural shift. Platforms built on the Unified Payments Interface (UPI) architecture — including Google Pay, PhonePe, Paytm, Amazon Pay, and the government-sponsored BHIM application — have fundamentally altered how ordinary citizens conduct monetary transactions. Before 2016, the predominant modes of consumer payment were physical currency and bank cards, requiring physical visits to branches or ATMs. The demonetisation exercise of November 2016 catalysed a rapid pivot towards cashless alternatives, a momentum that has since become self-perpetuating.

The National Payments Corporation of India (NPCI) recorded in excess of 13 billion UPI transactions worth roughly ₹21 trillion in a single month during 2024, illustrating the sheer depth of integration into everyday Indian commerce (NPCI, 2024). This volume of adoption has fundamentally reconfigured not just payment mechanics but also the psychology surrounding money. Behavioural economists have long documented a phenomenon termed the 'pain of paying' — the psychological discomfort that accompanies cash expenditure and naturally moderates spending impulses (Prelec & Loewenstein, 1998). By transforming monetary value into abstract digits on a screen, digital payment platforms substantially reduce this inhibitory friction, with notable implications for spending frequency, impulse purchasing tendencies, and overall financial discipline.

Despite the growing volume of literature on digital payment adoption, relatively few studies have examined with rigour how UPI and wallet-based transactions specifically shape impulsive spending and financial management practices among Indian consumers across varying income and age brackets. Most prior research concentrates on adoption antecedents or broad transaction patterns rather than downstream behavioural outcomes of payment modality shifts. This gap provides the central motivation for the present study.

Research Questions

Three research questions anchor this investigation:

RQ1: Does adoption of digital wallets and UPI meaningfully raise spending frequency among Indian consumers?

RQ2: What relationship exists between income level and impulsive digital spending behaviour?

RQ3: Do cashback incentives and reward programmes moderate the link between payment convenience and consumer spending?

Research Objectives

The study pursues three primary objectives: (i) to examine how digital wallet and UPI adoption shapes consumer spending habits in India; (ii) to identify the principal benefits and challenges that consumers encounter in their use of digital payment platforms; and (iii) to analyse associations between demographic characteristics — age, income, occupation — and digital payment behaviour.

Significance of the Study

By generating empirical evidence on behavioural consequences of digital payment adoption in an emerging market, this study contributes meaningfully to academic literature. For fintech developers, findings point toward actionable intelligence regarding user satisfaction and the psychological mechanisms driving engagement. For policymakers at the Reserve Bank of India and Ministry of Finance, insights on financial discipline and fraud exposure can inform consumer protection regulation. For ordinary consumers, heightened awareness of how digital platforms shape spending choices can enable more deliberate financial management.

Review of Literature

Digital Payment Adoption and Consumer Behaviour

Scholarly investigation into digital payment adoption has been heavily shaped by the Technology Acceptance Model (TAM), first articulated by Davis (1989), which positions perceived usefulness and ease of use as the primary drivers of technology uptake. Later scholarship adapted this framework specifically to mobile payment systems, consistently identifying speed and simplicity as dominant adoption catalysts (Venkatesh et al., 2003; Oliveira et al., 2016). Within the Indian setting, Sinha and Mukherjee (2016) demonstrated that security perceptions and convenience were the strongest predictors of UPI adoption intent, with young urban consumers showing the highest propensity to adopt.

A more recent study by Huggi and Udagi (2023) surveyed 500 Indian consumers and found that digital payment platforms elevated spending frequency and perceived convenience while simultaneously raising concerns about cybersecurity and digital literacy. Their findings point to the dual-edged character of cashless payment adoption — one that this research builds upon.

The Pain of Paying and Impulse Buying

The foundational theoretical lens for understanding cashless spending psychology is the Pain of Paying theory proposed by Prelec and Loewenstein (1998). Their work argues that spending cash produces a distinctive psychological discomfort acting as a restraint on outlay. Cashless transactions attenuate this effect by abstracting monetary value. Soman (2001) extended this framework empirically, showing that

credit card users systematically underestimate past expenditures compared with cash users — a consequence of the temporal decoupling between payment and consumption in non-cash transactions.

Dev and colleagues (2024), drawing on a mixed-methods design with 235 survey responses and 20 in-depth interviews, found that approximately 74% of Indian UPI users reported increased spending after adoption, attributing the change primarily to platform convenience and transaction speed. These findings align with the pain-of-paying framework and reinforce the hypothesis that digital payment adoption elevates spending frequency.

Jhawar and Nandedkar (2022) examined digital wallet attributes and their bearing on impulse purchasing, finding notable positive associations between wallet usage frequency and impulsive buying tendency, particularly in e-commerce contexts.

Role of Cashback, Discounts, and Incentives

A distinct stream of research addresses financial incentive structures in shaping digital payment behaviour. Cashback rewards, discount coupons, and loyalty points offered by platforms like PhonePe, Google Pay, and Paytm function as a form of price promotion that not only attracts initial adoption but sustains ongoing engagement and can stimulate incremental spending. Bopanna and D'Silva (2023) found that promotional incentives significantly mediated the connection between payment convenience and expenditure volume among Indian digital payment users, with cashback being especially potent in inducing spending among lower-income segments who would otherwise exercise greater restraint.

Demographic Variations in Digital Payment Behaviour

Digital payment adoption and usage patterns exhibit considerable variation across demographic segments. PwC India (2023) reported that over 80% of millennial and Generation Z consumers favoured UPI or wallet-based payments over cash, driven chiefly by convenience, speed, and safety. Yadav and Li (2024) found that younger consumers demonstrated greater vulnerability to impulse buying via digital platforms, whereas higher-income consumers were more inclined to leverage expense-tracking features for disciplined budget management. Urban-rural disparities also persist: NPCI (2023) data indicate that over 70% of UPI transaction value originates in urban centres, with rural users transacting primarily in essentials and exhibiting fewer impulsive purchasing tendencies.

Security, Trust, and Satisfaction

Consumer trust constitutes a critical determinant of sustained digital payment adoption. The Reserve Bank of India (2024) and NPCI have repeatedly flagged ongoing challenges — including phishing attacks, unauthorised transactions, and delayed refunds — as significant barriers to full user confidence. Pavlou (2003) established that perceived security and institutional trust strongly predict transaction intentions in electronic commerce, a finding that applies with equal force to mobile payment contexts.

Research Gap

While the broader literature provides a solid foundation, a notable gap exists: few studies have examined, within a single integrated framework, how UPI specifically influences impulse buying and financial discipline across income and demographic groups using primary survey data and inferential statistical analysis. Most prior work addresses adoption antecedents rather than downstream behavioural outcomes, and seldom considers satisfaction, security concerns, and financial management simultaneously. This study addresses that gap directly.

Theoretical Framework

Three complementary theories underpin this investigation. The Technology Acceptance Model (TAM) — Davis (1989) — explains how perceived usefulness and ease of use drive digital payment adoption. The Pain of Paying Theory — Prelec and Loewenstein (1998) — explains how cashless payment reduces psychological expenditure inhibition and facilitates impulsive purchasing. The Stimulus-Organism-Response (S-O-R) Framework — Mehrabian and Russell (1974) — explains how platform features such as convenience and cashback (stimulus) trigger psychological responses such as reduced payment pain and positive affect (organism), leading to behavioural outcomes including increased spending and impulse buying (response).

Hypotheses

Five hypotheses are proposed on the basis of the theoretical framework and reviewed literature:

H_1: A statistically significant relationship exists between age group and frequency of digital payment usage.

H_2: Digital payment adoption significantly elevates impulsive spending behaviour among consumers.

H_3: Income level significantly influences the share of monthly expenditure conducted through digital payments.

H_4: Cashback and reward incentives significantly moderate consumer adoption and spending frequency on digital platforms.

H_5: A statistically significant difference exists in overall satisfaction with digital payment systems across occupational groups.

Research Methodology

Research Philosophy and Approach

This investigation adopts a positivist philosophical orientation, asserting that social phenomena are amenable to objective measurement and that reproducible empirical regularities can be identified through systematic inquiry (Saunders et al., 2019). A deductive approach is employed: hypotheses are derived from established theory and prior research, and data are subsequently collected to subject these hypotheses to empirical scrutiny. The research strategy is survey-based and quantitative, enabling structured demographic comparisons and statistical hypothesis testing.

Data Collection

Primary data were gathered through a structured questionnaire deployed via Google Forms between January and February 2025. Distribution was conducted through academic and professional networks, WhatsApp groups, and email chains, targeting individuals above the age of 18 who had used at least one digital payment platform in the preceding three months. Secondary data were drawn from peer-reviewed journals, NPCI transaction reports, RBI Annual Reports, and published analyses by NABARD and PwC India.

Sampling

A convenience sampling approach was adopted, consistent with comparable studies in this domain (Huggi & Udagi, 2023; Bopanna & D'Silva, 2023). The final data set comprised 120 usable responses. Although a standard power calculation recommends a minimum of 385 responses for large-population surveys with a 95% confidence interval and 5% margin of error, a sample of 120 is regarded as adequate for detecting medium-to-large effect sizes in Chi-Square and ANOVA analyses (Cohen, 1988). The sample encompassed students, employed professionals, self-employed individuals, homemakers, and retirees. Respondents spanned monthly income brackets ranging from below ₹10,000 to above ₹1,00,000, facilitating income-group comparisons.

Instrument Development

The survey comprised 19 items organised across five thematic sections: demographic information (items 1–4), digital payment awareness and usage (items 5–8), spending habits and behaviour (items 9–13), perception and impact (items 14–17), and opinion and future outlook (items 18–19). Measurement items were adapted from validated instruments in prior research including Dev et al. (2024), Huggi and Udagi (2023), and Jhawar and Nandedkar (2022). Likert-scale items used a five-point scale anchored at Strongly Disagree (1) and Strongly Agree (5). An academic expert reviewed the instrument prior to deployment.

Data Analysis Techniques

Data analysis proceeded in three stages. First, descriptive statistics — frequencies, percentages, means, and standard deviations — were computed for all variables. Second, Chi-Square tests of independence examined associations between categorical demographic variables and categorical behavioural outcomes. Third, One-Way ANOVA compared mean scores across demographic groups for continuous or ordinal outcome variables. Statistical significance was assessed at the $\alpha = 0.05$ threshold throughout. All inferential analyses were conducted using Microsoft Excel with formula-based calculations.

Data Analysis and Interpretation

Demographic Profile of Respondents

Table 1 presents the complete demographic profile of the 120 survey participants.

Table 1. Demographic Profile of Respondents (n = 120)

Variable	Category	Frequency	Percentage (%)
Age Group	Below 18	0	0.0
	18–25	25	20.8
	26–35	37	30.8
	36–45	15	12.5
	46–60	32	26.7
	Above 60	11	9.2

Gender	Male	72	60.0
	Female	48	40.0
Occupation	Student	15	12.5
	Employed (Private/Govt.)	26	21.7
	Self-employed	21	17.5
	Retired	26	21.7
	Other	32	26.7
Monthly Income	Below ₹10,000	32	26.7
	₹10,000–₹25,000	22	18.3
	₹25,001–₹50,000	26	21.7
	₹50,001–₹1,00,000	22	18.3
	Above ₹1,00,000	18	15.0

The 26–35 age cohort formed the largest segment (30.8%), followed by the 46–60 group (26.7%), producing a sample that spans a broad adult age range. Males constituted 60% of the sample. Occupationally, the sample was diverse, with employed professionals, retirees, and others each comprising over 20% of respondents. Income distribution was broadly spread, with the largest share (26.7%) earning below ₹10,000 monthly.

Digital Payment Awareness and Usage Patterns

Of the 120 participants, 55.8% (n = 67) confirmed active use of digital payment platforms, while 44.2% indicated only limited familiarity. Google Pay was the most widely used platform (24.2%), followed by Paytm (21.7%), PhonePe (20.8%), BHIM (17.5%), and Amazon Pay (15%). Peer-to-peer money transfers represented the most common transaction type (35%), followed by online shopping (31.7%) and food delivery (30%). Daily usage was reported by 31.7% of respondents, with 19.2% using platforms several times per week.

Impact on Spending Behaviour

Table 2 shows self-reported changes in spending frequency following digital payment adoption.

Table 2. Change in Spending Frequency Following Digital Payment Adoption

Response	**n**	**Percentage (%)**	**Cumulative (%)**
Yes, significantly increased	38	31.7	31.7
Yes, slightly increased	25	20.8	52.5
No change	29	24.2	76.7
Spending has decreased	28	23.3	100.0
Total	120	100.0	—

Table 2 shows that 52.5% of participants (n = 63) reported spending more frequently since adopting digital payments, with 31.7% describing the increase as significant. This result lends initial support to H_2. It is worth noting that 23.3% reported decreased spending — suggesting that for some consumers, the transparency and transaction-logging features inherent in digital platforms encourage greater fiscal restraint.

Impulse Buying Perceptions

Table 3 captures respondents' views on whether digital wallets and UPI make impulsive spending easier.

Table 3. Perceptions of Impulse Spending Facilitation by Digital Payments

Response	n	Percentage (%)	Cumulative (%)
Strongly Agree	38	31.7	31.7
Agree	31	25.8	57.5
Disagree	30	25.0	82.5
Strongly Disagree	21	17.5	100.0
Total	120	100.0	—

As reflected in Table 3, 57.5% of respondents (n = 69) agreed that digital wallets and UPI facilitate impulsive spending behaviour. This outcome is consistent with the Pain of Paying theoretical framework (Prelec & Loewenstein, 1998) and corroborates the results reported by Dev et al. (2024) and Huggi and Udagi (2023).

Inferential Statistical Analysis

Chi-Square Test: Age Group and Digital Payment Usage Frequency (H_1)

A Chi-Square test of independence was performed to evaluate the association between age group and digital payment usage frequency. The computed test statistic was $\chi^2(20) = 24.18$, $p = 0.234$. Since the p-value exceeds 0.05, the null hypothesis is retained; there is no statistically significant association between age group and digital payment usage frequency. This points to the broad, cross-generational normalisation of digital payment behaviour in India, which aligns with usage universality data reported by NPCI (2024).

Chi-Square Test: Income Level and Impulse Spending (H_3)

A further Chi-Square test assessed the association between monthly income bracket and agreement that digital wallets facilitate impulsive spending. The computed statistic was $\chi^2(12) = 19.74$, $p = 0.073$. This result falls short of the 0.05 significance threshold; accordingly, H_3 is not supported at the conventional level. Nevertheless, the pattern in the data suggests that respondents in lower income brackets were somewhat more likely to endorse the impulse-spending effect — a directional finding consistent with Bopanna and D'Silva (2023) and worthy of investigation in larger future samples.

One-Way ANOVA: Satisfaction Scores Across Occupation Groups (H_5)

Table 4 presents the ANOVA results for overall satisfaction scores across occupational categories.

Table 4. One-Way ANOVA — Overall Satisfaction by Occupation Group

Source	SS	df	MS	F	p-value
Between Groups (Occupation)	8.42	4	2.105	1.87	0.119
Within Groups (Error)	129.67	115	1.128	—	—
Total	138.09	119	—	—	—

The ANOVA result $F(4, 115) = 1.87$, $p = 0.119$ indicates that occupational group does not significantly explain variation in satisfaction with digital payment systems. H_5 is therefore not supported. Notably, satisfaction scores were relatively uniform across all occupational categories, pointing to dissatisfaction as a cross-occupational experience rather than one concentrated in any particular segment.

Additional Findings

Technical and security failures were reported by 61.7% of respondents, with failed transactions, fraud exposure, and delayed refunds cited most frequently. Only 36.7% found digital payment applications genuinely useful for tracking personal expenses, while 30% remained uncertain about the effectiveness of available tracking features. On the future of cash, 34.2% believed digital payments would not fully supplant physical currency, 29.2% believed they would, and 36.7% were undecided — indicating that cash retains a complementary role in India's near-term payment ecosystem.

Findings

Key Empirical Findings

Awareness and Adoption: 55.8% of respondents actively use digital payment platforms, with Google Pay (24.2%) as the clear preference leader, reflecting its simple interface and deep banking integration.

Spending Frequency: 52.5% of respondents experienced more frequent spending following digital payment adoption, with 31.7% characterising this rise as significant — a finding consistent with the Pain of Paying theoretical prediction.

Impulse Buying: 57.5% agreed that digital wallets and UPI make impulsive spending easier, with peer-to-peer transfers (35%) and online shopping (31.7%) forming the dominant transaction categories — both highly conducive to unplanned expenditure.

Financial Management: Only 37.5% reported meaningful improvement in financial management following adoption, while 39.2% indicated partial improvement and 23.3% perceived no change, suggesting that platform transparency is not automatically translated into better budgeting behaviour.

Security Concerns: A substantial 61.7% of users encountered at least one technical or security problem, constituting a serious barrier to sustained user trust.

Satisfaction: Overall satisfaction was moderate at best; 49.1% expressed dissatisfaction, and only 12.5% were highly satisfied, with reliability and security shortcomings as the primary drivers of negative experience.

Theoretical Implications

The present findings provide empirical support for the Pain of Paying theory in the UPI and digital wallet context, extending Prelec and Loewenstein's (1998) framework to an Indian emerging market setting. The prevalence of self-reported impulse buying aligns with the theoretical expectation that abstracted payment forms reduce expenditure inhibition. The study additionally extends the TAM by demonstrating that digital payment adoption in India has transcended age-group boundaries, suggesting that ease of use and perceived usefulness are now sufficiently universal to no longer differentially predict adoption across generations. The S-O-R framework's utility is supported by the finding that cashback incentives — while not the primary adoption motive — act as effective behavioural stimuli reinforcing platform engagement and potentially amplifying spending.

Practical Implications

For Fintech Companies and Platform Developers

The conjunction of a 61.7% technical failure exposure rate and a 49.1% dissatisfaction score identifies a clear product improvement priority for digital payment platforms. Investment in server infrastructure resilience, automated refund mechanisms, and AI-assisted fraud detection is warranted. The low uptake of expense-tracking features (36.7%) further suggests that such tools are insufficiently prominent or intuitive; redesigning dashboards to surface proactive spending summaries and budget alerts could convert the platforms' inherent data advantage into tangible financial management value for users.

For Policymakers and Regulatory Authorities

The high incidence of fraud and transaction failures underscores the need for stronger consumer protection frameworks in digital financial services. The Reserve Bank of India and NPCI should consider mandating maximum refund timelines for failed transactions, tightening Know-Your-Customer (KYC) requirements for wallet accounts, and expanding the Digital India literacy programme to encompass practical financial management training alongside basic payment instruction. Investment in rural digital infrastructure remains critical, as connectivity gaps continue to exclude substantial portions of the population from full digital payment participation.

For Consumers

Consumers stand to benefit from deliberate engagement with the financial tracking and categorisation tools embedded within digital payment applications. Setting personal spending caps, scheduling periodic reviews of transaction histories, and consciously treating cashback rewards

as savings rather than licence for additional outlay are straightforward strategies for counteracting the impulse-spending tendencies documented in this study.

Limitations and Future Research Directions

Limitations

Several limitations qualify the generalisability of these findings. The sample of 120 falls below the statistically recommended minimum for large-population surveys, constraining precision in effect estimation. Convenience sampling introduces self-selection bias; voluntary participants may differ systematically from non-participants in their attitudes toward digital payments. The geographic concentration on urban and semi-urban areas of Pune means rural consumer experiences are underrepresented. All data are self-reported, introducing social desirability and recall biases in expenditure assessments. The cross-sectional design prevents causal inference; while associations between adoption and spending behaviour are established, directionality cannot be confirmed definitively. Finally, the absence of a formal pilot testing phase may have allowed minor item ambiguities to persist.

Future Research Directions

A longitudinal study tracking the same individuals over 12–24 months following initial digital payment adoption would enable stronger causal inference and illuminate behavioural change trajectories over time. Comparative cross-national research in India, China, Brazil, and Kenya would contextualise India's experience within a broader emerging-market fintech framework, enabling identification of universal versus context-specific effects. Qualitative research through in-depth interviews with heavy versus light digital payment users would complement the quantitative findings by illuminating the psychological and social mechanisms underlying expenditure differences. Future studies should incorporate validated psychometric instruments for impulse buying tendency, such as the Rook and Fisher (1995) scale, and financial self-efficacy measures to enable more rigorous operationalisation of the outcome constructs examined here.

Conclusion

This study furnishes empirical evidence that digital wallets and UPI payment systems have materially transformed consumer spending behaviour across India. Specifically, 52.5% of surveyed consumers reported higher spending frequency following adoption, and 57.5% acknowledged that these platforms make impulsive purchasing easier — findings that validate the Pain of Paying framework in an Indian emerging market context. The predominant use cases — peer-to-peer transfers, online shopping, and food delivery — represent precisely those transactional contexts in which the friction-reducing properties of digital payments are most pronounced and unplanned expenditure most readily stimulated.

At the same time, the data reveal meaningful nuance. A notable proportion (23.3%) reported decreased spending after adoption, and 39.2% perceived at least partial improvement in financial management, indicating that digital platforms hold genuine potential as financial discipline tools when their transparency and tracking features are actively used. This potential remains largely unrealised for the majority of users, pointing to a meaningful gap between technological affordance and behavioural application.

Security and reliability failures continue to represent the most significant obstacle to sustained consumer confidence, with 61.7% of respondents having encountered transaction failures, fraud, or refund delays. Addressing these shortcomings through technological investment and regulatory action is essential to realising the transformative potential of India's digital payment infrastructure. When paired with robust consumer protection mechanisms and targeted financial literacy initiatives, digital payment systems can evolve from mere conduits for frictionless spending into genuine instruments of financial inclusion and empowerment.

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