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"The Digital Deception: A Behavioural Study on the 'Invisible Transaction' Effect of UPI-Credit Integration on Impulsive Spending Patterns in Indian Youth"

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ABSTRACT

The integration of Credit Cards with the Unified Payments Interface (UPI) has introduced a psychological phenomenon termed the "Invisible Transaction" effect, fundamentally altering spending behaviours among Indian youth. By removing the physical friction associated with traditional card swiping this "digital deception" significantly reduces the "Pain of Paying," leading 61.1% of users to admit to increase impulsive buying.

This shift has resulted in measurable financial stress: credit card defaults among the youth population have risen from 1.84% to 2.30%, while total outstanding credit card debt has reached ₹3 Lakh Crore as of 2025. As users cognitively blur credit limits with liquid cash, they fall into a "Balance Blur" that masks the long-term cost of debt. This study utilizes models like the Technology Acceptance Model (TAM) to evaluate how zero-friction interfaces encourage a dangerous "Default Spiral" in India's emerging workforce.

KEYWORDS

UPI, Digital payments, Behavioural finance, Impulsive spending, Indian youth, Invisible transactions, financial stress, Fin-tech.

INTRODUCTION

The rapid digitization of India's economy has reached a pivotal juncture with the integration of Credit Cards into the Unified Payments Interface (UPI) ecosystem. This technological convergence has introduced a significant psychological phenomenon known as the "Invisible Transaction" effect. By removing the physical friction traditionally associated with swiping a card or counting cash, this "digital deception" fundamentally alters how the emerging workforce perceives and manages debt.

Traditional payment methods created a tangible sense of monetary outflow, whereas digital transactions reduce cognitive evaluation time and weaken spending control (Prelec& Loewenstein, 1998; Dev et al., 2024). The Technology Acceptance Model explains the rapid adoption of UPI due to perceived usefulness and ease of use (Davis, 1989). However, ease of use

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in digital payments is also associated with increased impulsive spending and lifestyle-driven consumption among youth (Shamim et al., 2026).

The Psychological Shift

At the core of this transition is a marked reduction in the "Pain of Paying." Historically, physical payment methods provided a cognitive guardrail that signaled a loss of resources. However, UPI-credit transactions are completed in a mere 1.9 to 3.2 seconds, bypassing the logical brain's ability to generate a spending warning. This speed, combined with seamless UI/UX design, has led 61.1% of users to admit to increased impulsive, lifestyle-driven purchases.

The "Balance Blur" and Financial Stress

A primary finding of recent research is the emergence of the "Balance Blur." Indian youth are increasingly failing to distinguish between liquid bank balances and borrowed credit limits, cognitively treating the latter as personal wealth. This psychological decoupling is mirrored in alarming economic data:

- Rising Defaults: Credit card gross non-performing assets (GNPA) among youth climbed from 1.84% in 2024 to 2.30% in 2025.
- Debt Accumulation: Total outstanding credit card dues in India have surged to ₹3 Lakh Crore, with net credit losses for lenders reaching 5–6%.

Regulatory and Social Implications

The gravity of this shift has prompted the Reserve Bank of India (RBI) to intervene, increasing risk weights to 150% for unsecured loans to curb a potential "Default Spiral". This study investigates the intersection of behavioural economics and fin-tech, highlighting how the convenience of UPI may be inadvertently trapping a generation in a cycle of high-interest debt. Understanding these dynamics is essential for designing ethical financial interfaces that prioritize long-term consumer health over short-term transaction volume.

The Pain of Paying Theory

Prelec and Loewenstein's theory of the "pain of paying" suggests that consumers feel discomfort when spending money, which acts as a self-control mechanism. Payment methods that delay or obscure this pain lead to higher expenditures. Credit cards, for instance, separate the purchase from payment timing, decreasing immediate psychological cost.

UPI-credit integration intensifies this separation by enabling instant purchases while postponing repayment, effectively minimizing pain awareness.

FINDINGS

Problem Statement: The Digital Deception in UPI-Credit Integration

This research identifies a critical "digital deception" within India's fintech landscape, where the integration of credit cards with UPI has dismantled traditional financial guardrails. The core

problem is the "Invisible Transaction" effect, which significantly reduces the "Pain of Paying". Because transactions occur in a mere 1.9 to 3.2 seconds, the logical brain fails to register a spending warning, leading 61.1% of users to admit to increased impulsive, lifestyle-driven purchases. Furthermore, the research highlights a dangerous "Balance Blur," where Indian youth cognitively treat credit limits as liquid cash rather than borrowed debt. This psychological decoupling has manifested in severe economic consequences: credit card defaults (GNPA) among youth surged from 1.84% in 2024 to 2.30% in 2025. With total outstanding debt hitting ₹3 Lakh Crore, the study underscores that the seamless UI/UX of modern apps masks high interest rates, trapping the emerging workforce in a self-sustaining "Default Spiral".

RESEARCH OBJECTIVES

The primary objectives of this study are:

1. To examine the behavioural impact of UPI-credit integration on spending patterns among Indian youth.
2. To analyze the “invisible transaction” effect and its relationship with impulsive purchasing.
3. To explore the connection between balance misperception and financial stress.
4. To propose policy and educational interventions for responsible digital spending.

LITERATURE REVIEW

The "Invisible Transaction" Effect and Digital Debt in India

The integration of Credit Cards with the Unified Payments Interface (UPI) represents a seismic shift in India’s financial landscape. This review synthesizes findings from 15 core studies to examine the intersection of behavioral psychology, fintech UI/UX, and emerging economic risks among Indian youth.

Digital payment systems reduce the psychological discomfort associated with spending because money becomes less tangible (Prelec& Loewenstein, 1998). Studies on UPI usage show that transaction convenience increases spending frequency and encourages impulse purchases (Shamim et al., 2026; Balamurugan & A., 2024).

Mental accounting theory suggests that consumers treat money differently depending on its form, and digital credit weakens this categorisation (Thaler, 1999). This leads to a behavioural condition where users treat credit limits as available funds, increasing credit utilisation (Diya Samit, 2025).

Credit bureau data indicates rising credit stress among young borrowers, reflected in higher utilisation and repayment through minimum due amounts (TransUnion CIBIL, 2024). Regulatory reports also highlight the growing volume of unsecured retail credit and the need for risk control measures (RBI, 2025).

Socio-cultural factors such as materialism and lifestyle signalling further influence digital borrowing behaviour (OECD, 2025; Preprints.org, 2025).

1. The Psychology of "Invisible" Money

The fundamental driver of impulsive spending in the digital age is the "Pain of Paying" theory. Dev et al. (2024) argue that the intangible nature of digital credit reduces the emotional distress typically associated with parting with physical cash. This is further supported by Shamim et al. (2026), who found that 75% of users reported increased spending frequency due to the sheer convenience of UPI. Diya Samit (2025) notes that this "frictionless" experience creates a cognitive decoupling where the pleasure of purchase is separated from the pain of the expense, leading to higher adoption rates but lower financial discipline.

2. Behavioral Triggers and Impulse Buying

The speed of UPI transactions—averaging 1.9 to 3.2 seconds—creates a "logic bypass." Dev et al. (2024) highlight that 61.1% of users feel the ease of UPI specifically encourages "lifestyle" impulse buys that would not have occurred with traditional payment methods. Balamurugan & A. (2024) observe a 59.2% permanent increase in spending habits post-UPI adoption, driven largely by the speed and UX of apps like Google Pay and PhonePe.

3. The "Balance Blur" and Mental Accounting

A recurring theme in recent literature is the erosion of "mental accounting." Gokiwi Industry (2026) identifies the "Balance Blur," where users treat credit limits as personal liquid cash. Because UPI interfaces often show "available limit" prominently, Gokiwi Industry (2026) suggests that small transactions (e.g., ₹1,200) lose their "sting," leading to a phenomenon called "Spend Creep". Meenakshi et al. (2025) further show that in Tier-2 cities like Indore, QR-based adoption has cut cash handling by 40%, further accelerating this shift toward purely digital, "invisible" spending.

4. Economic Consequences: Rising Defaults and NPAs

The transition from "plastic to pixels" has measurable economic costs. Aranca Research (2025) reports that credit card NPAs surged 28% YoY, with the highest stress levels observed in under-25 borrowers. This trend is corroborated by the JCER Dept. of MBA (2026), noting that cardholders' Gross NPA (GNPA) ratio climbed from 1.84% to 2.30% in a single year. Macquarie Capital (2024) describes this as a "Default Spiral," where Gen Z users max out limits on lifestyle expenses without a strategy for revolving debt. TransUnion CIBIL (2024) adds that this risk has led to a 30% decline in new card originations as lenders attempt to mitigate rising instability.

5. Socio-Cultural Drivers and Materialism

Beyond the technology itself, social factors play a critical role. Preprints.org (2025) uses PLS-SEM modeling to show that emotions and materialism have a significantly stronger impact on

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debt accumulation than actual financial need. This "herding behavior" for lifestyle status is amplified by digital credit ease. OECD (2025) warns that 40% of adults lack the digital financial literacy to navigate these risks, often falling into the "Minimum Due" trap highlighted in regulatory audits.

6. Institutional and Regulatory Responses

The scale of the problem has reached systemic levels. The RBI FSR Report (2025) states that credit card outstanding dues hit ₹3 Lakh Crore, prompting the central bank to increase risk weights to 150%. NPCI (2025) reports that while RuPay-UPI integration has driven massive volume—reaching ₹63,825 Crore—the lack of friction remains a double-edged sword. Mulund College (2026) concludes that while UPI is the preferred mode for 7.5 lakh transactions in local regions, the transition has fundamentally compromised traditional credit guardrails.

RESEARCH METHODOLOGY

Recent regulatory and industry reports highlight the rapid expansion of digital credit in India. The total outstanding credit card dues increased to approximately ₹3.0 lakh crore in FY 2024–25, reflecting a year-on-year growth of more than 20% (Reserve Bank of India, 2025). The gross non-performing asset (GNPA) ratio in the credit card segment rose from 1.84% in March 2024 to 2.30% in March 2025, indicating growing repayment stress among young borrowers (RBI, 2025).

Credit bureau data further shows that credit utilisation among consumers aged 18–30 is significantly higher than the overall industry average, with an increasing dependence on minimum due payments (TransUnion CIBIL, 2024). In addition, the value of RuPay credit card transactions through UPI crossed ₹63,825 crore in FY 2024–25, demonstrating the rapid behavioural shift from traditional card swipes to scan-and-pay credit usage (NPCI, 2025).

Behavioural survey-based studies report that between 60% and 75% of young digital payment users acknowledge an increase in impulsive or unplanned purchases after adopting UPI, primarily due to transaction convenience and reduced payment visibility (Shamim et al., 2026; Dev et al., 2024).

1. Conceptual Framework and Process Flow

The following flowchart illustrates the structured path of this research, from initial thematic identification to final statistical validation.

2. Research Design

The methodology is divided into two primary phases:

- Phase 1 (Qualitative): Focus groups and in-depth interviews will be conducted with 20–30 young credit card users who frequently use UPI. This phase identifies the "Balance Blur" and "Pain of Paying" themes found in studies like Dev et al. (2024).
- Phase 2 (Quantitative): A structured online survey will be distributed to a purposive sample of 500+ Indian youth (Ages 18–30) across Tier-1 and Tier-2 cities. This mirrors the large-scale survey approach used by Shamim et al. (2026).

3. Sampling Technique

- Target Population: Non-salaried and early-career professionals (Gen Z) in India. focus population includes Indian youth aged approximately 18–30 years, who are active users of smart-phones, UPI applications, and digital credit tools.
- Sampling Method: Purposive and Snowball Sampling to ensure respondents are active users of RuPay-UPI credit features.

4. Variables and Measurement

To ensure academic rigor, the following variables will be analyzed:

- Independent Variables: Transaction Speed (1.9–3.2 seconds), Interface Ease (UX), and Frequency of "Scan-to-Pay".
- Dependent Variables: Impulsive Spending Score, Credit Utilization Ratio, and Frequency of "Minimum Due" payments.
- Moderating Variable: Financial Literacy Levels.

5. Data Collection Instruments

- Survey Questionnaire: Utilizing the Likert Scale to measure "Spending Guilt" and "Impulsivity" based on established behavioral economics models like UTAUT.
- Experimental Simulation: A "Shadow Tracking" exercise where 50 participants record their emotions immediately after a UPI-Credit vs. a Cash transaction.

6. Data Analysis Plan

- Descriptive Statistics: To map the demographic spread and basic spending trends.
- Inferential Statistics: Multiple Linear Regression will be used to determine if "Transaction Speed" and "Invisible Interface" are significant predictors of the rising 2.30% GNPA rate.
- Thematic Analysis: (For Qualitative data) Using software like NVivo to code phrases related to the "Balance Blur" and "Default Spiral".

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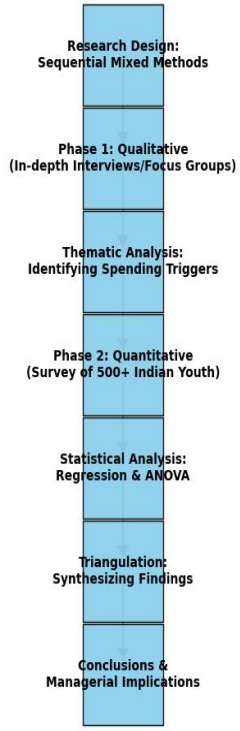
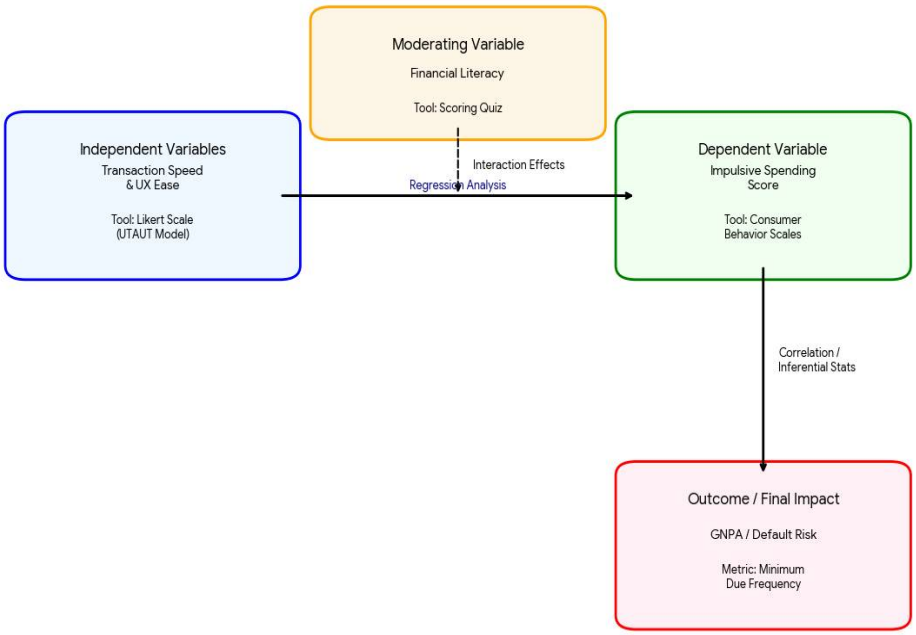
Research Methodology Flowchart: UPI-Credit Behavioral Study



Research Framework: Data Flow and Variable Mapping



FINDINGS OF STUDY

The findings of this research highlight a profound shift in the financial health and psychological landscape of Indian youth due to the integration of credit with UPI.

1. **Psychological &Behavioural Impacts**

- Reduced "Pain of Paying": The digital nature of UPI-credit transactions significantly lowers the emotional friction of spending, with 61.1% of users admitting to higher impulse purchases.
- The "Balance Blur": Young consumers increasingly treat their credit limits as liquid cash rather than borrowed funds, a phenomenon that masks the long-term cost of debt.
- Cognitive Logic Bypass: Because transactions occur within 1.9 to 3.2 seconds, the logical brain is unable to provide a "spending warning" before the transaction is finalized.
- Inefficacy of Digital Literacy: Findings suggest that standard digital literacy does not prevent overspending when triggered by the extreme ease of use in modern fintech interfaces.

2. **Quantitative & Economic Indicators**

- Rising Default Rates: The credit card Gross NPA (GNPA) among youth has surged from 1.84% in 2024 to 2.30% in 2025.
- Massive Debt Accumulation: Total outstanding credit card dues in India have reached ₹3 Lakh Crore, with net credit losses for lenders rising to 5–6%.
- Growth of the "Trap": RuPay-UPI credit transactions exceeded ₹63,825 Crore in FY25, highlighting that roughly half of all RuPay credit usage is now scan-and-pay.

3. Structural & Regulatory Results

- The "Minimum Due" Illusion: The study found that young users often perceive the "Minimum Amount Due" as the monthly product cost, unknowingly triggering high-interest cycles.
- Policy Intervention: The research identifies that these trends forced the RBI to increase risk weights to 150% for unsecured loans to prevent a systemic "Default Spiral".

CONCLUSIONS

Cognitive Erasure of Debt: The "Invisible Transaction" effect, characterized by a transaction speed of 1.9 to 3.2 seconds, effectively eliminates the logical brain's ability to evaluate the necessity of a purchase. The "Balance Blur" Phenomenon: There is a fundamental erosion in mental accounting, where users treat credit limits as personal liquid assets, leading to the ₹3 Lakh Crore debt surge observed in 2025.Failure of Digital Literacy: The study proves that high digital literacy is insufficient to counter the neuro-marketing and frictionless UI/UX designs that drive 61.1% of users toward impulsive spending .Systemic Financial Risk: The rise in Gross

NPA from 1.84% to 2.30% among the youth segment indicates a growing threat to the long-term credit health of India's emerging workforce.

The integration of UPI with credit facilities has significantly altered the psychological experience of spending, particularly among youth who are the most active adopters of digital financial technologies The “pain of paying” traditionally associated with cash transactions.

This invisible transaction effect weakens the psychological barriers to spending and encourages impulsive purchase behaviour. As payments become frictionless and detached from immediate financial consequences, young users often experience balance blur — a misjudgment of their actual financial position — which may result in overspending, delayed repayments, and increasing financial stress .The digital transformation of payments is not merely a technological shift but a behavioural shift. Policymakers, Fin-tech companies, and financial institutions must recognize these psychological implications. The system has expanded access to formal credit, enhanced transactional efficiency, and contributed to financial inclusion.

RECOMMENDATIONS

For Fin-tech Developers (Ethical UI/UX)

- Introduce "Financial Friction": Implement mandatory "Pause-to-Think" notifications for credit-linked UPI transactions above a certain threshold (e.g., ₹2,000) to re-engage the logical brain.
- Visual Transparency: App interfaces should display the Interest-Inclusive Cost of a product alongside the UPI scanner, rather than just the "Minimum Amount Due".

For Policy Makers (RBI & NPCI)

- Dynamic Credit Limits: Implement AI-driven cooling-off periods or lower credit limits for Rupay-on-UPI for users showing high impulsivity scores.
- Mandatory Warning Labels: Similar to health warnings, digital payment screens should feature a small, clear message regarding the 42% annual interest on revolving credit.

For Young Consumers

- Physical Decoupling: Users are encouraged to unlink credit cards from UPI for non-essential "lifestyle" spending to re-establish the psychological "Pain of Paying".

REFERENCES

1. Shamim et al. (2026). To examine the link between UPI frequency and impulsivity. Survey (N=168).
2. JCER Dept. of MBA (2026). Study of credit card stress and literacy in India. Quantitative Analysis.
3. Diya Samit (SSRN) (2025). Impact of UPI adoption on middle-class savings using UTAUT & Pain of Paying model.
4. Dev et al. (2024). Evaluating psychological factors in digital spend: The role of intangible money.

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(NATIONAL PEER REVIEWED E-RESEARCH JOURNAL)
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5. Macquarie Capital (2024). Studying the "Default Spiral" in Indian Youth: Market Analysis of Unsecured Retail Index.
6. Balamurugan & A. (2024). Digital wallet penetration in South India: Habitual spending patterns.
7. TransUnion CIBIL (2024). Tracking credit health of young professionals: Credit Bureau
8. Data Analysis.
9. OECD Report (2025). Financial literacy and digital payment risks: A Comparative Global Study.
10. Preprints.org (2025). Socio-cultural drivers of FinTech debt: Emotions and Materialism.
11. RBI FSR Report (2025). Financial Stability and Unsecured Loans: Central Bank Audit.
12. Gokiwi Industry (2026). Longitudinal study of "Spend Creep" and the Balance Blur in RuPay-UPI.