International Journal of Creative and Open Research in Engineering and Management
ISSN: **3108-1754 (Online)**
Volume 02 Issue 04 April-2026 | Impact Factor: 3.5

An Empirical Study on the Rise of Mobile Banking in India with Respect to the Developed Global Economy

Mule Renuka Balu
Student, MBA Department
Dhole Patil College of Engineering, Pune

Prof. Shrikant Jagtap
Project guide, MBA Department
Dhole Patil College of Engineering, Pune

Author Email: rmule354@gmail.com

How to Cite this Article:

Balu, M. R. (2026). An Empirical Study on the Rise of Mobile Banking in India with Respect to the Developed Global Economy. International Journal of Creative and Open Research in Engineering and Management, 02(04). https://doi.org/10.55041/ijcope.v2i4.793

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Abstract—

The global financial ecosystem has witnessed a fundamental bifurcation in the trajectory of digital banking adoption. While developed economies such as the United States and the United Kingdom underwent a gradual, sequential transition from cash to card-based systems and eventually to mobile applications, India experienced a hyper-accelerated "leapfrog" phenomenon. Catalysed by the 2016 Demonetization, the advent of ultra-cheap 4G internet via Jio, the COVID-19 pandemic, and the launch of the zero-fee Unified Payments Interface (UPI), millions of Indian consumers bypassed plastic card infrastructure entirely and adopted mobile-first banking as a daily utility. This empirical study investigates the behavioural drivers sustaining this adoption among 105 active digital banking consumers in urban and semi-urban India, using a structured quantitative survey. The study analyses consumer trust in high-value transactions, dependency reduction on physical banking infrastructure, usage of advanced financial services, justification of continuous use despite cyber fraud risks, and the comparative perception of India's digital payment ecosystem against developed nations. Key findings reveal that 83.8% of respondents identify 24x7 operational availability as the core driver; 70.5% prefer mobile banking for transactions above ₹10,000; 77.1% report reduced reliance on physical banking infrastructure; and 57.1% believe India is ahead of nations like the US and UK in daily digital payments. The study concludes that mobile banking in India has matured beyond basic micro-transactions into a comprehensive financial super-app ecosystem, representing a permanent structural shift in consumer financial behaviour rather than a transient, fee-driven anomaly.

Keywords— *Mobile Banking; Unified Payments Interface (UPI); Digital Financial Inclusion; Consumer Behaviour; FinTech; Leapfrog Effect; Zero-MDR; Digital Public Infrastructure.*

I. INTRODUCTION

The global financial landscape has undergone a profound paradigm shift over the last two decades, transitioning from traditional, paper-based banking to digitised financial ecosystems. In developed economies—such as the United States, the United Kingdom, and Western Europe—this evolution was gradual and sequential. Consumers moved from physical cash to paper cheques, then to credit and debit card networks protected by chargeback mechanisms and Merchant Discount Rate (MDR) models, and finally to mobile banking applications as an extension of legacy bank accounts [1].

Conversely, India experienced a dramatically different trajectory. Rather than following this sequential path, India witnessed a "leapfrog" effect [2]. Millions of consumers bypassed the plastic card infrastructure entirely, transitioning directly from a cash-dependent economy to a mobile-first digital payment ecosystem. This hyper-accelerated adoption was catalysed by a confluence of macroeconomic shocks and structural enablers: the 2016 Demonetization, which suddenly withdrew 86% of the nation's currency in circulation; the launch of Jio's ultra-cheap 4G internet; the COVID-19 pandemic, which mandated contactless payments; and crucially, the introduction of the Unified Payments Interface (UPI) by the National Payments Corporation of India (NPCI). UPI offered zero-fee, real-time, and fully interoperable transactions, effectively transforming mobile banking from a premium service into a daily utility for the masses [3].

While the volume of UPI transactions in India has crossed billions per month, a critical gap persists in empirical research: the precise behavioural drivers sustaining this adoption have not been adequately studied in comparison to the mature, card-reliant ecosystems of the developed world. This study seeks to fill this gap by investigating whether the Indian mobile banking boom represents a fragile, fee-driven anomaly or a permanent structural shift in consumer financial behaviour, and whether Indian consumers are graduating from basic micro-transactions to advanced wealth management services, much like their counterparts in developed nations.

The objectives of this study are to: (1) identify the core behavioural and macroeconomic catalysts that drove mobile banking adoption in India; (2) compare consumer usage patterns between the Indian UPI ecosystem and the card-reliant systems of developed economies; (3) test whether high-value transaction trust, advanced service adoption, and infrastructure independence have been established; and (4) benchmark the maturity of India's digital payment landscape against global standards.

II. LITERATURE REVIEW

2.1 Theoretical Frameworks

The adoption of mobile banking has been extensively theorised through established behavioural models. The Technology Acceptance Model (TAM), proposed by Davis [4], suggests that user adoption is driven by Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). In developed economies, PU was historically linked to credit tracking and high-value transfers; in India, it is primarily driven by real-time micro-transactions and the elimination of physical cash dependency [5]. The Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. [6] expanded TAM by introducing Social Influence and Facilitating Conditions. In the Indian context, external facilitating conditions—demonetization mandates and cheap data—served as powerful non-voluntary adoption triggers, bypassing the organic behavioural shifts typical of developed markets [7]. Network Effects Theory (Katz & Shapiro, 1985) [8] further explains the Indian surge: as more users adopted UPI, more merchants accepted QR codes, creating a self-reinforcing ecosystem that rendered cash practically obsolete in urban centres [9].

2.2 Financial Evolution in Developed Economies

In developed markets, digital banking evolved sequentially. Studies by Mallat [10] and Schierz et al. [11] highlight that Western consumers transitioned slowly from cash and cheques to cards and eventually to mobile applications. Mobile banking was initially viewed as an extension of the card ecosystem, used primarily for balance checking rather than point-of-sale payments [12]. Trust in Western digital payments is sustained by robust chargeback mechanisms and bank-backed fraud protection [13].

2.3 India's Leapfrog and Systemic Shocks

The Indian transition was characterised by systemic shocks. The 2016 Demonetization, which withdrew 86% of currency in circulation, forced a rapid behavioural shift toward digital wallets like Paytm [14]. This was subsequently bolstered by the 'Jio Effect'—the sudden availability of ultra-cheap 4G data, identified as the primary facilitating condition for rural mobile banking penetration [15]. The COVID-19 pandemic produced a secondary surge, permanently altering habitual consumer behaviour toward contactless payments [16].

2.4 The Zero-MDR Environment and Research Gaps

A critical area of empirical study concerns transaction ticket size and price sensitivity. Kumar and Sharma [17] found that the Zero-MDR policy was the single largest factor for QR code adoption among unorganised retailers. However, Sharma et al. [18] warn that if transaction fees were introduced, over 40% of users might revert to cash, suggesting a fragile ecosystem. Gupta and Arora [19] indicate that while Indian consumers have mastered basic transactions, adoption of complex financial products (insurance, mutual funds) via mobile platforms still lags behind developed nations due to a persistent trust deficit [20]. This study addresses these identified gaps by providing fresh primary empirical data.

III. METHODOLOGY

3.1 Research Design

This study employs a quantitative, cross-sectional, and descriptive-cum-causal research design. The descriptive component maps the demographic profile and transaction habits of respondents, while the causal component tests specific relationships—such as whether a high perception of app security leads to greater willingness to conduct high-value transactions (above ₹10,000).

3.2 Sampling and Data Collection

The target population comprised active smartphone users with formal bank accounts residing in India, primarily in urban and semi-urban environments (Tier-1 and Tier-2 cities). A finalized sample of N = 105 respondents was obtained via non-probability Convenience and Snowball Sampling. Initial participants were recruited through professional and academic networks and requested to forward the digital survey link within their peer groups. This approach ensured rapid and demographically diverse data collection.

The primary instrument was a structured, 16-question self-administered digital survey built using Google Forms, distributed electronically via LinkedIn, WhatsApp, and email over a 2-month period. Section A captured demographic profiles (Age, Gender, Occupation, City Type), while Section B captured behavioural metrics (adoption triggers, high-value transaction preferences, advanced service usage, and dependency reduction). A pilot test was conducted with 10 respondents to validate the instrument's clarity and reliability; internal consistency was confirmed via Cronbach's Alpha (> 0.70). Participation was entirely voluntary, and complete anonymity was maintained; no sensitive financial data was solicited.

3.3 Hypotheses

Five hypotheses were formulated to test the study's key parameters:

H1: Increased 24x7 mobile banking usage significantly reduces consumer dependency on physical banks and allied banking infrastructure.

H2: A high perception of mobile app security significantly increases consumer preference for high-value transactions (above ₹10,000).

H3: Perceived systemic convenience and real-time tracking benefits significantly outweigh cyber fraud risks, leading to continuous usage.

H4: Consumers are increasingly utilising mobile banking for advanced financial services (investments, loans) beyond basic transfers.

H5: Indian consumers strongly perceive their domestic digital payment ecosystem as operationally and technologically ahead of developed nations.

3.4 Data Analysis

Raw data was exported from Google Forms into Microsoft Excel for cleaning and coding. Statistical analysis included: (i) Descriptive Statistics—frequency distributions, percentages, and visual representations via pie charts and bar graphs; (ii) Chi-Square Tests of Independence for categorical and nominal data to validate H1–H5; and (iii) Correlation Analysis for ordinal Likert-scale

variables measuring trust, security, and continuous usage.

IV. RESULTS AND DISCUSSION

4.1 Demographic Profile

The study captured 105 valid responses. The dominant age cohort was 18–25 years (53.3%), followed by 25–50 years (27.6%), confirming that youth and early-career professionals are the primary drivers of mobile banking adoption in India. Males constituted 78.1% of respondents, indicating a current gender gap in digital banking participation. Salaried professionals formed the largest occupational segment (51.4%), followed by business owners (26.7%) and students (21.9%). Geographically, 58.1% of respondents resided in fast-paced Tier-1 cities, with 28.6% from Tier-2 cities, reflecting the urban-centric nature of high-frequency digital transactions.

Table I: Demographic Profile of Survey Respondents (N = 105)

Variable	Category	Frequency	Percentage (%)
Age Group	< 18 years	7	6.7%
	18–25 years	56	53.3%
	25–50 years	29	27.6%
	> 50 years	13	12.4%
Gender	Male	82	78.1%
	Female	22	21.0%
	Prefer not to say	1	0.9%
Occupation	Salaried	54	51.4%
	Business	28	26.7%
	Student	23	21.9%
City Type	Fast-paced City (Tier-1)	61	58.1%
	Mid-sized City (Tier-2)	30	28.6%
	Quiet Town / Village	14	13.3%

4.2 Key Findings and Hypothesis Testing

Finding 1 – 24x7 Availability as Core Driver (H1 Supported): An overwhelming 83.8% of respondents agreed that the round-the-clock operational nature of digital payments is the primary driver of mobile banking's rise, while 77.1% confirmed that mobile banking has successfully reduced their dependency on physical banking branches and ATMs for routine monetary tasks. This strongly supports H1, indicating that the 'Always-On' attribute has effectively severed the Indian consumer's temporal dependency on traditional branch banking.

Finding 2 – High-Value Transaction Trust (H2 Supported): A significant 70.5% of respondents prefer mobile banking over cash or cheques for transactions exceeding ₹10,000. This finding directly supports H2 and challenges the assumption that Indian mobile banking is confined to low-value micro-transactions. The data suggests that systemic trust—driven by speed, auditability, and digital receipts—has matured sufficiently to displace traditional instruments even for high-value payments, a behavioural hallmark previously associated only with developed digital economies.

Finding 3 – Risk Justification and Continuous Use (H3 Supported): Despite acknowledged cyber fraud risks, respondents employ pragmatic risk-mitigation strategies to justify continuous usage. Exactly 31.4% reported keeping only small amounts in linked bank accounts, while another 31.4% use mobile banking due to inescapable societal and

merchant demand. A further 20% stated that everyday convenience far outweighs the occasional risk. This supports H3 and reveals an 'Indian Cautious Adoption Model'—users are digitally pragmatic, not digitally naïve.

Finding 4 – Maturation to Advanced Financial Services (H4 Supported): Beyond basic money transfers, 27.6% of respondents actively invest in stocks and mutual funds via mobile banking apps, 23.8% apply for personal loans, 25.7% access account statements frequently, and 22.9% open or manage Fixed Deposits through mobile platforms. The distribution across all four advanced services is remarkably even (22.9%–27.6%), indicating a broad-based financial maturation rather than concentration in a single advanced service. This supports H4 and aligns with the emerging 'financial super-app' narrative for Indian mobile banking.

Finding 5 – Global Positioning Perception (H5 Supported): A clear majority of 57.1% of respondents believe India is ahead of developed nations like the US and UK in daily digital payments, with only 24.8% disagreeing and 18.1% undecided. This validates H5 and reflects genuine consumer-level awareness of India's UPI ecosystem as a globally superior model for retail digital payments, a sentiment corroborated by international observers and central banks [21].

Table II: Summary of Key Survey Findings (N = 105)

Survey Question / Variable	Response	Frequency	%
24x7 availability drives mobile banking rise	Yes	88	83.8%
Mobile banking reduces dependency on physical banks	Yes	81	77.1%
Preference for mobile over cash/cheque (> ₹10,000)	Yes	74	70.5%
Mobile banking provides real-time transaction tracking	Yes	83	79.0%
India is ahead of US/UK in daily digital payments	Yes	60	57.1%
Advanced service: Investing (stocks/mutual funds)	—	29	27.6%
Top adoption reason	Real-time money transfer	36	34.3%
Top attraction factor	Easy to use	42	40.0%
Merchants never refuse mobile payments	Never	44	41.9%
Rural inclusion via mobile banking	Yes	43	41.0%
Survey Question / Variable	**Response**	**Frequency**	**%**
24x7 availability drives mobile banking rise	Yes	88	83.8%

Survey Question / Variable	Response	Frequency	%
Mobile banking reduces dependency on physical banks	Yes	81	77.1%
Preference for mobile over cash/cheque (> ₹10,000)	Yes	74	70.5%
Mobile banking provides real-time transaction tracking	Yes	83	79.0%
India is ahead of US/UK in daily digital payments	Yes	60	57.1%
Advanced service: Investing (stocks/mutual funds)	—	29	27.6%
Top adoption reason	Real-time money transfer	36	34.3%
Top attraction factor	Easy to use	42	40.0%
Merchants never refuse mobile payments	Never	44	41.9%
Rural inclusion via mobile banking	Yes	43	41.0%

4.3 The Rural Inclusion Paradox

One area of notable ambiguity is rural financial inclusion. Opinions are nearly equally divided: 41.0% believe mobile banking has successfully brought rural India into the formal banking system, while 40.0% disagree and 19.0% feel it has done so only partially. This dichotomy reveals a critical infrastructural and digital literacy gap: while the technology infrastructure (UPI, Jan Dhan accounts) has physically reached rural India, the human capital prerequisites—digital literacy, trust in technology, and reliable smartphone access—remain unevenly distributed. This finding is consistent with literature suggesting that technological availability alone is insufficient for deep financial inclusion [15].

4.4 Comparison with Developed Economies

The Indian mobile banking experience diverges from that of developed economies in three fundamental ways. First, the adoption catalyst: while Western adoption was market-driven and voluntary, India's was policy-mandated and shock-induced [14]. Second, the fee structure: the Zero-MDR environment of UPI fundamentally differs from the fee-based MDR models in the US and UK, enabling ubiquitous merchant adoption at the grassroots level [17]. Third, the infrastructure model: unlike the privatised, siloed payment gateways (Visa, Mastercard, Apple Pay) dominant in developed markets, India's UPI is a public interoperable utility that eliminates network exclusivity [3]. These structural differences have allowed India to achieve transaction volumes and speeds that have drawn global admiration, with several countries exploring the UPI model for their own digital payment infrastructure [21].

V. CONCLUSION

This empirical study affirms that mobile banking in India has transcended its origins as a crisis-response mechanism to become a mature, high-trust, and comprehensive financial ecosystem. The research conclusively demonstrates four major outcomes. First, the 'Always-On' model has eliminated time-bound barriers of traditional banking, with 83.8% of users identifying 24x7 availability as the primary adoption driver and 77.1% reporting a significant reduction in physical bank dependency, thereby supporting H1. Second, the establishment of high-

value transaction trust—with 70.5% preferring mobile banking for amounts exceeding ₹10,000—proves that the Indian consumer has developed the psychological security profile necessary for comprehensive digital banking, supporting H2. Third, the 'Cautious Adoption' model reveals a pragmatically digital consumer base that employs rational risk-mitigation strategies (keeping small balances, accepting societal inevitability) to justify continuous usage, supporting H3. Fourth, the broad-based adoption of advanced financial services (investments, loans, FDs) via mobile platforms indicates that India's mobile banking ecosystem has matured into a financial super-app, supporting H4. The majority perception that India leads developed nations in daily digital payments (H5) reflects a justified sense of fintech national confidence.

Limitations include geographic and gender skew toward urban male respondents, a relatively modest sample of 105 (suitable for indicative trends but not absolute national benchmarks), and reliance on self-reported data. Future research should employ longitudinal designs, larger nationally representative samples, and qualitative interviews to capture deeper nuances of digital trust formation, particularly in deep-rural and female demographics.

The insights from this study hold significant implications for policymakers, financial institutions, and global economies. As the UPI model garners international interest, understanding the behavioural prerequisites—beyond mere technological infrastructure—will be crucial for other developing nations seeking to replicate India's digital payment revolution.

ACKNOWLEDGMENT

The author expresses sincere gratitude to Prof. Shrikant Jagtap (HOD & Project Guide), Dhole Patil College of Engineering, Pune, for invaluable guidance; to Principal Dr. Abhijit Dandavate for institutional support; and to all 105 respondents whose participation made this empirical research possible. The survey was conducted in accordance with ethical research norms, with complete participant anonymity maintained throughout.

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