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**Financial Inclusion as a Path to Equality: Lessons
from India**



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Abstract

Financial inclusion represents a fundamental human rights imperative, linking economic access to dignity and opportunity. India's decade-long journey toward universal financial inclusion offers crucial insights into how digital public infrastructure can overcome traditional barriers to financial access. Through the strategic deployment of the India Stack, comprising digital identity (Aadhaar), universal banking (Jan Dhan Yojana), and interoperable payments (UPI), India has demonstrated that financial inclusion at scale is achievable when governments create foundational infrastructure that reduces transaction costs and enables market innovation. This article examines how complementary interventions in savings, insurance, and credit create synergies exceeding their individual impacts, while acknowledging critical concerns about credit quality, sustainability, and the risk of over-indebtedness. The evidence suggests that while India has made remarkable progress in expanding financial access, questions remain about whether this credit expansion leads to productive investment or consumption, and whether current lending practices are creating sustainable pathways out of poverty or new forms of debt dependency.

1 Introduction: The Economic Imperative of Financial Inclusion

Financial inclusion represents one of the most critical challenges facing developing economies in the 21st century. Despite substantial progress in expanding access to basic savings accounts globally, the path from financial access to genuine financial empowerment remains elusive for millions. Academic literature has long established the fundamental relationship between financial development and economic growth (King and Levine, 1993; Rajan and Zingales, 1998), yet

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translating this macroeconomic insight into tangible improvements in individual lives requires innovative approaches that transcend traditional banking models.

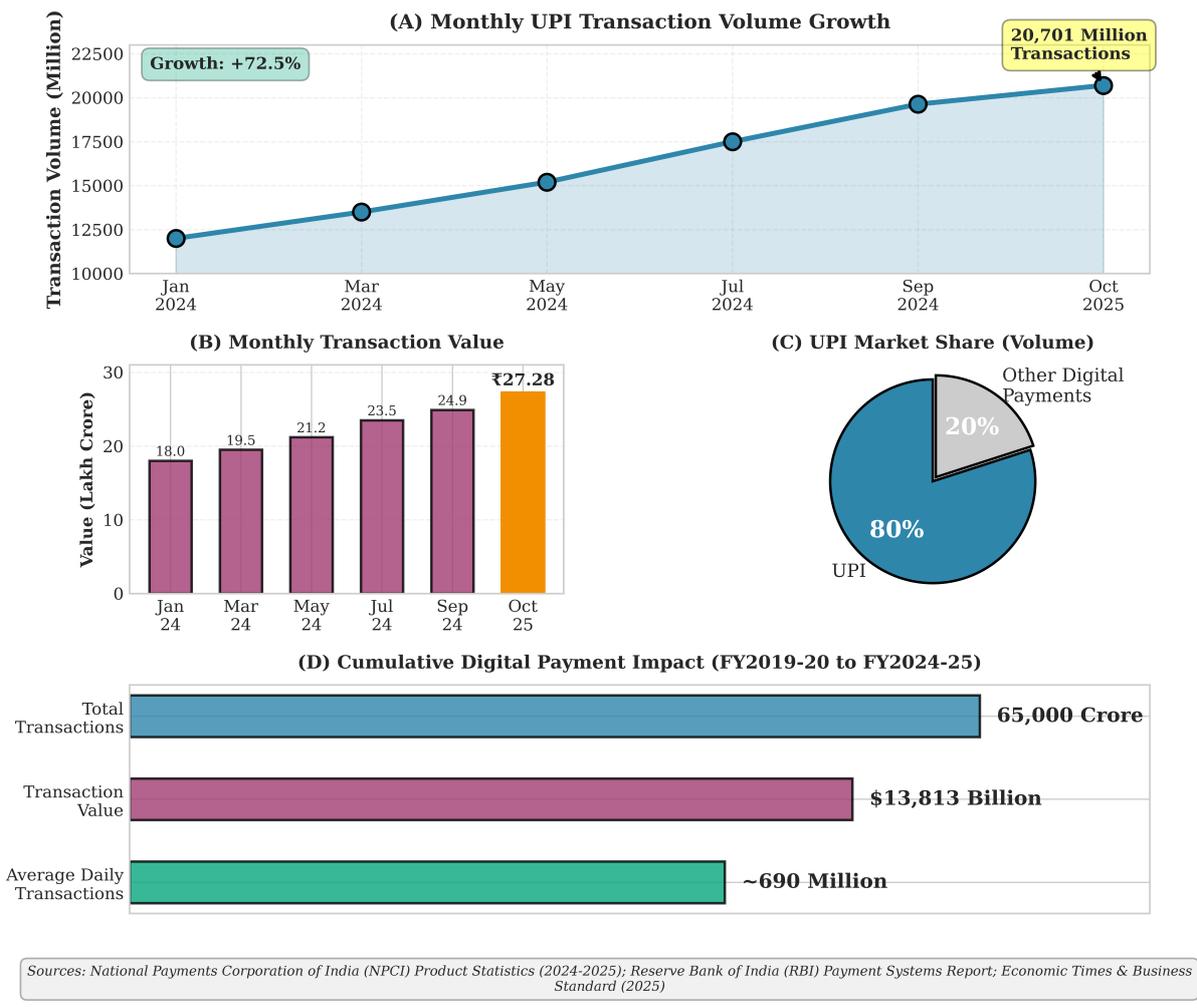
The barriers to achieving financial inclusion at scale are formidable and multifaceted. Transaction costs in traditional banking systems often make serving low-income populations economically unviable. Pre-2010 estimates suggest that the cost of onboarding a customer in India, involving physical collection and verification of paper documents, ranged between \$15 and \$23 per customer (Allen et al., 2020). When a low-income household seeks to open a savings account with a deposit of INR 100 (\$1.20), this cost far exceeds any potential interest margin. Information asymmetries prevent lenders from assessing creditworthiness among those without formal credit histories—the “thin file” problem, where millions of potentially productive entrepreneurs remain invisible to formal lenders. Geographic dispersion, particularly in rural areas, raises the cost of physical infrastructure to prohibitive levels. Moreover, as Cole et al. (2013) demonstrates, non-price barriers such as lack of trust, limited financial literacy, and cultural factors often prove more binding than economic constraints alone.

India’s journey toward financial inclusion offers a compelling case study in how public digital infrastructure can overcome these barriers. Rather than relying solely on market forces or government subsidies, India recognized that digital infrastructure, like physical infrastructure, creates foundational rails that dramatically reduce the costs of doing business. This approach enables a powerful complementarity between the government’s social welfare mandate and the efficiency of competitive market enterprise.

2 The Architecture of Digital Inclusion: India’s Strategic Approach

India’s financial inclusion strategy represents a paradigm shift from traditional approaches. Instead of viewing financial inclusion as a costly social obligation, the government conceptualized it as an investment in economic connectivity with returns manifesting over extended horizons. The central insight was that the state’s role is not to replace markets but to “complete” them, investing in high-risk, low-return infrastructure that private actors could never build due to coordination failures. This vision crystallized through the creation of the “India Stack”—a comprehensive digital infrastructure comprising unique identification (Aadhaar), universal bank accounts (Jan Dhan Yojana), and interoperable payments (Unified Payments Interface).

The economic breakthrough of Aadhaar was not just the identity card, but the e-KYC (Electronic Know Your Customer) API that allowed instant verification. This reduced customer acquisition costs from approximately \$15–23 to \$0.15–0.50—a reduction of over 95% (Allen et al., 2020). This drastic reduction in marginal cost fundamentally altered the supply curve for financial services, making it economically viable for banks to open “zero-balance” accounts.



Note: UPI = Unified Payments Interface. Data as of October 2025 unless otherwise specified.

Figure 1: Digital Payment Revolution - UPI Adoption in India

The Unified Payments Interface (UPI), launched in November 2016, exemplifies this infrastructure first approach. As documented in recent research (Alok et al., 2024), UPI created a zero-cost, cross-platform payment system that fundamentally altered the economics of financial services. UPI’s interoperability enables users to create verifiable digital footprints across institutions—a crucial prerequisite for credit assessment in the absence of traditional credit histories.

The numbers speak to UPI’s transformative impact: from 1 million transactions in October 2016 to nearly 20 billion monthly transactions by October 2025, with UPI accounting for 75%-85% of all retail digital payment volume. This exponential growth wasn’t accidental, but rather resulted from deliberate design choices: zero transaction fees for both consumers and merchants, real-time settlement, and simplified user interfaces accessible to even those with limited digital literacy. Figure 1 below provides aggregate statistics on UPI usage and growth.

Critically, this digital infrastructure doesn’t replace market mechanisms but enhances them. Private firms can innovate and offer services atop these rails when business economics make

sense, given dramatically reduced customer acquisition and service costs. When markets remain incomplete, as they inevitably do when serving less profitable segments—the government can step in with targeted interventions that complete these markets rather than displacing them.

3 Household Financial Resilience: A Household Balance Sheet Approach

Financial inclusion cannot be understood through the narrow lens of credit access alone. Household financial resilience depends on three interconnected pillars: savings mobilization, risk protection through insurance, and productive credit access. India’s approach recognized these interdependencies, designing interventions that create synergies exceeding the sum of their parts.

3.1 Savings: The Foundation

The Pradhan Mantri Jan Dhan Yojana (PMJDY), launched in August 2014, provided the essential foundation by ensuring universal access to bank accounts. Unlike previous village-level banking initiatives, PMJDY explicitly targeted household-level inclusion. Within three years, the program opened over 300 million accounts, bringing previously unbanked populations into the formal financial system ([Agarwal et al., 2017](#)).

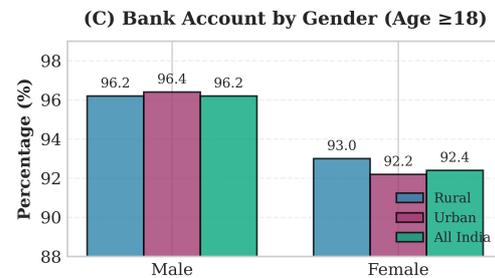
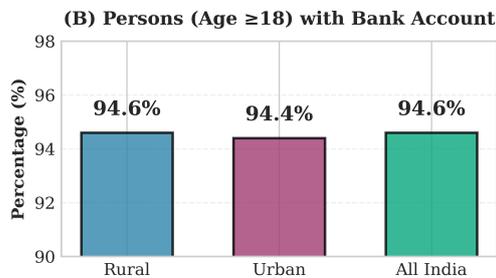
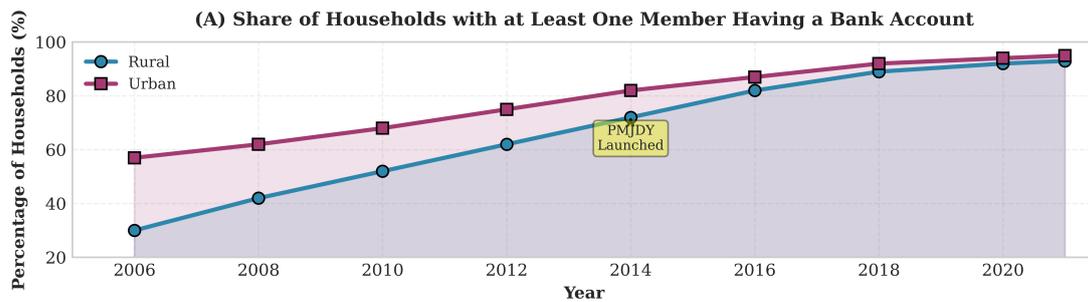
However, account ownership alone doesn’t guarantee usage. Recent government data acknowledges that approximately 13.05 crore accounts (roughly 23%) are classified as inoperative, with no transactions for over two years.¹ Yet this also means that 77% of accounts remain active—a fundamental shift from the pre-2014 era where nearly half the country remained unbanked. Figure 2 below provides aggregate statistics on bank account penetration in India.

The success of India’s approach lay in creating compelling use cases for these accounts. Direct benefit transfers for government subsidies incentivized regular account usage. The “JAM Trinity” (Jan Dhan-Aadhaar-Mobile) became the diversion-proof mechanism for subsidy delivery, saving the exchequer billions in leakages and justifying the initial infrastructure investment. In FY 2024–25 alone, INR 6.9 lakh crore was credited directly to bank accounts under various DBT schemes. More importantly, these accounts became gateways to the UPI ecosystem, enabling even small vendors and informal sector workers to accept digital payments, thereby creating traceable income histories.

3.2 Insurance: Protection Against Volatility

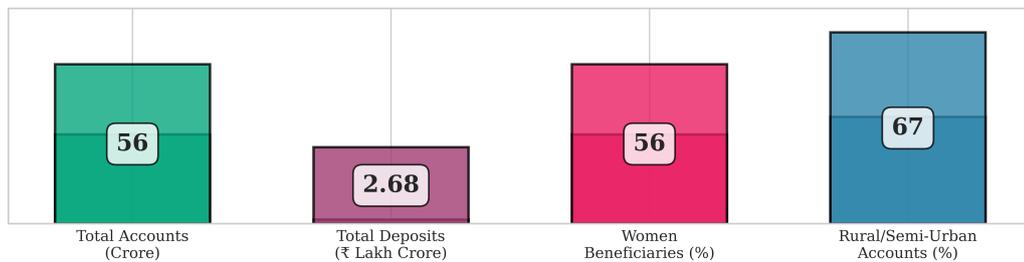
The Ayushman Bharat scheme, launched in 2018, represents the world’s largest publicly funded health insurance program, covering 500 million beneficiaries. Recent research demonstrates

¹See [The Hindu: Inoperative Jan Dhan Accounts](#)



Survey Period: July 2022 - June 2023

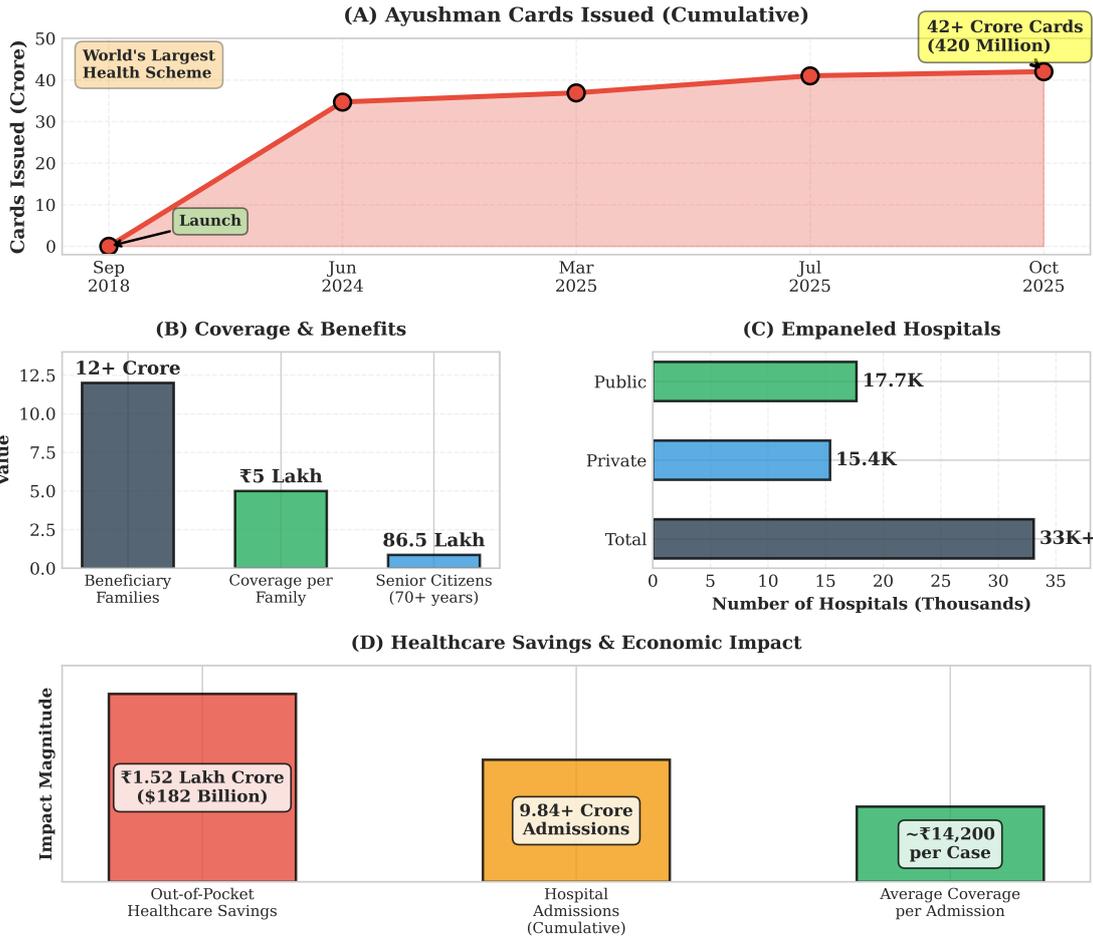
(D) Pradhan Mantri Jan Dhan Yojana (PMJDY) Impact



Sources: National Sample Survey Office (NSSO), Comprehensive Annual Modular Survey (CAMS) 2022-23, NSS Report No. 590; National Family Health Survey (NFHS), International Institute for Population Sciences; PMJDY Official Portal; Press Information Bureau (PIB), Government of India

Note: Panel A shows household-level data from NFHS. Panels B-C show individual-level data (age ≥18 years) from NSSO CAMS 2022-23. Panel D: PMJDY launched August 28, 2014; data as of August 2025. Bank account includes post office account or any account at a financial institution.

Figure 2: Pradhan Mantri Jan Dhan Yojana PM-JDY - Universal Bank Accounts Initiative



Sources: Press Information Bureau (PIB), Government of India (November 2025); National Health Authority (NHA), Ministry of Health & Family Welfare; Economic Survey of India (2024-25); Ayushman Bharat PM-JAY Official Portal

Note: PM-JAY = Pradhan Mantri Jan Arogya Yojana. Data as of October 28, 2025.

Figure 3: Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY) - Universal Health Coverage Initiative

that this program significantly reduced loan delinquencies in implementing districts by protecting households against catastrophic health expenditures that would otherwise force distress borrowing at usurious rates or cause loan defaults (Tantri, 2024).

The program offers coverage of INR 500,000 per household annually, with automatic enrollment for households identified as “deprived” through socioeconomic surveys. By empanelling over 20,000 hospitals, including private facilities, the scheme addressed infrastructural constraints while ensuring quality care. The economic impact extends beyond direct medical benefits—reduced precautionary savings requirements enable households to pursue more productive economic activities and potentially start small businesses, while improved loan repayment rates reflect the stabilizing effect of insurance on household finances. Figure 3 above provides aggregate statistics on Ayushman Bharat Penetration.

3.3 Credit: From Access to Empowerment

The creation of digital payment footprints through UPI fundamentally transformed credit markets. Research shows that UPI adoption substantially increased financial deepening, particularly for subprime and new-to-credit borrowers (Alok et al., 2024). The differential response between banks and fintechs is particularly instructive: while banks primarily increased lending to prime borrowers, fintechs expanded across all segments, uniquely serving new-to-credit customers who previously lacked any pathway into formal credit markets.

Academic literature highlights the promise of these alternative new scoring models. Research by Agarwal et al. (2021) using proprietary data from a large fintech lender in India demonstrates that alternative data captured from mobile phones—including the number and types of apps installed, measures of social connections, and borrowers’ “deep social footprints” based on call logs—can substitute for traditional credit bureau scores. Crucially, for “unscorable” customers with no bureau file, these digital footprints provide robust signals of default probability, enabling lenders to expand credit access to financially excluded individuals without adversely impacting default outcomes.

This credit expansion didn’t come at the cost of increased defaults—at least not initially. Digital footprints enabled lenders to identify underserved but creditworthy borrowers, expanding access without compromising portfolio quality. Back-of-the-envelope calculations suggest that these new loans were economically significant, representing 2.8 times the urban monthly per capita expenditure and 4.7 times the rural monthly per capita expenditure for receiving households (Alok et al., 2024).

4 Policy Evolution: A Decade of Systematic Progress

4.1 2014–2016: Building the Foundation

The period began with PMJDY’s launch, creating the account infrastructure necessary for digital financial inclusion. By 2016, over 255 million accounts had been opened, with rural areas accounting for 60% of new accounts. The simultaneous rollout of Aadhaar biometric identification reached over 1 billion Indians, creating the authentication layer for digital transactions.

The 2016 demonetization episode, while controversial, inadvertently accelerated digital payment adoption. The sudden cash shortage pushed millions toward digital alternatives, with UPI transactions growing 900% by end-2017 compared to pre-demonetization levels.

4.2 2016–2019: The Digital Revolution

UPI’s launch coincided with Reliance Jio’s entry into the telecom market, offering 4G internet at revolutionary prices—INR 5 per GB compared to INR 250–300 charged by competitors. This created powerful complementarities: regions with early Jio tower deployment and high

UPI exposure saw significantly greater credit expansion, particularly to new-to-credit borrowers through fintech channels.

Government schemes multiplied during this period. PM-KISAN provided direct income support to farmers through bank transfers. MUDRA loans offered collateral-free credit to micro-enterprises. The PM Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi) scheme, launched in response to COVID-19, provided working capital loans to street vendors, recognizing them as micro-entrepreneurs deserving formal credit access.

4.3 2020–2024: Consolidation and Expansion

The pandemic accelerated digital adoption across all segments. UPI's monthly transaction volume grew from 1.3 billion in January 2020 to over 10 billion by 2023. The government leveraged this infrastructure for emergency cash transfers, reaching millions within days, a feat impossible under traditional distribution mechanisms.

Credit markets transformed fundamentally during this period. Fintechs using alternative data expanded rapidly, with loan disbursements to new-to-credit segments growing at unprecedented rates. Traditional banks, while slower to adapt, began incorporating UPI transaction data into credit assessments, broadening their reach beyond prime borrowers.

5 Measuring Impact: Evidence of Transformation

The aggregate statistics tell a compelling story. Financial inclusion, measured by formal account ownership, increased from 53% in 2014 to over 94% by 2021 ([CAMS Survey, 2022-23](#)). Credit penetration expanded dramatically, with the number of active loan accounts growing by 77% between 2017 and 2021, at a CAGR of 26%. Perhaps most remarkably, the number of unsecured new loan accounts grew at a CAGR of 49% between 2018-2020, driven largely by a growth in small-ticket loans (loan size < ₹50,000).

Digital payment penetration led by UPI is a significant driver of this credit growth ([Alok et al., 2024](#)). Specifically, [Alok et al. \(2024\)](#) find that districts with high ex-ante exposure to UPI (through early-adopting banks) experienced 22% greater credit growth compared to districts with low exposure. The quality of financial inclusion improved alongside its quantity—initially. Default rates remained stable or declined in the early years of expansion, indicating that new borrowers weren't inherently riskier—they simply lacked opportunities to demonstrate credit-worthiness previously.

Per the Reserve Bank of India (RBI), digital payments grew at a CAGR of 52.5% in terms of volume and 13% in terms of value between 2014-2024. More importantly, rural areas, which have historically been underserved by formal finance, saw particularly dramatic improvements, with digital payment adoption rates gradually converging to urban levels. UPI is the most preferred transaction mode for nearly 38% in rural, 37% in semi-urban, and 43% in India. Rural

and semi-urban regions now account for 60% of UPI transactions ([EY-CII Report, 2024](#)).

5.1 Synergies and Spillovers: The Multiplier Effect

The true innovation of India’s approach lies not in individual programs but in their orchestrated interaction. PMJDY created accounts, but without UPI, these might have remained dormant. UPI generated transaction data, but without Jio’s affordable internet, adoption would have remained urban and elite. Insurance programs like Ayushman Bharat freed household resources, but without credit access, this liquidity might not translate into productive investments.

Consider the journey of a street vendor: PMJDY provides a bank account, UPI enables accepting digital payments from customers, creating a verifiable income stream. This digital trail enables access to formal credit through PM SVANidhi. Ayushman Bharat insurance protects against health shocks that might otherwise force loan defaults. Each component reinforces the others, creating resilience exceeding what any single intervention could achieve.

5.2 Case Study: The Street Vendor’s Renaissance

Perhaps the most vivid illustration of India’s financial inclusion model in action is the PM Street Vendor’s AtmaNirbhar Nidhi (PM SVANidhi) scheme. Launched in June 2020 to support street vendors affected by COVID-19, it offers collateral-free working capital loans using a behavioral design known as “laddering”: first tranche of INR 10,000, second tranche of INR 20,000 upon repayment, and third tranche of INR 50,000.

The scheme incentivizes digital transactions through cashbacks (up to INR 1,200 per year) for accepting payments via QR codes and provides a 7% interest subsidy on timely repayment. This directly links credit to the digital trail creation discussed earlier.

Contrary to skepticism often directed at government loan programs, PM SVANidhi has demonstrated remarkable repayment discipline. While NPAs under the broader Pradhan Mantri Mudra Yojana reached 9.8–13.5% in certain portfolios during 2024–25, PM SVANidhi maintained robust performance. As of July 2024, out of 86.38 lakh loans disbursed, 31.73 lakh loans had been fully repaid to unlock higher tranches. The “laddering” incentive works: vendors prioritize repaying the INR 10,000 loan quickly to access the INR 20,000 capital.

This validates the core thesis: credit can drive digital adoption, which in turn creates data for future credit.

6 Critical Concerns: The Quality and Sustainability of Credit Expansion

While the expansion of credit access represents a remarkable achievement, fundamental questions remain about the nature and sustainability of this lending boom. These concerns strike at

the heart of whether financial inclusion is genuinely empowering or potentially creating new forms of vulnerability.

6.1 The Usage Question: Productive Investment versus Consumption

Perhaps the most critical unknown in India's financial inclusion story is how newly accessed credit is being utilized. The limited available evidence raises concerns. While policymakers hoped that expanded credit would fuel micro-entrepreneurship and productive investments, anecdotal evidence suggests substantial portions flow toward consumption, including discretionary spending on smartphones, motorcycles, and social obligations like weddings.

The absence of systematic data on credit utilization represents a major blind spot in evaluating program success. Without understanding whether loans finance productive assets that generate returns exceeding borrowing costs, we cannot assess whether financial inclusion is creating sustainable pathways out of poverty or temporary consumption smoothing that leaves borrowers worse off in the long term.

6.2 The Price of Inclusion: Interest Rates and Hidden Costs

While digital infrastructure has reduced transaction costs, the actual price of credit for newly included borrowers remains concerningly high. Microfinance institutions continue charging interest rates ranging from 18–26% annually, while digital lenders often charge even more when processing fees and other charges are included. For small-ticket loans with short tenures, annualized rates can exceed 36%.

These high rates may reflect genuine costs and risks inherent in serving new-to-credit populations, but they also raise questions about sustainability. When borrowing costs exceed realistic returns from micro-enterprise investments, credit access may create debt burdens rather than economic opportunities. The lack of transparency in pricing, with complex fee structures obscuring true costs, particularly disadvantages financially unsophisticated borrowers. One key reform needed here is to simplify and increase transparency in loan contract terms, such as highlighting the effective cost of credit, inclusive of all hidden fees, rather than just the APR.

6.3 Debt Trap Dynamics: Early Warning Signs

Emerging evidence suggests concerning patterns of over-indebtedness in some regions. Multiple lending without adequate information sharing between lenders has led to borrowers accessing credit from multiple sources simultaneously. The average number of active loans per borrower in some districts has increased from 1.2 to 2.8 between 2019 and 2023, suggesting either healthy credit deepening or dangerous over-leveraging.

The rapid growth of digital lending apps, many operating in regulatory gray areas, has exacerbated these risks. Reports of aggressive collection practices, hidden charges, and loan

recycling (taking new loans to repay old ones) are becoming more common. While aggregate default rates remain manageable, they may be artificially suppressed by ever-greening and the continuous entry of new borrowers that masks deteriorating portfolio quality among earlier cohorts.

6.4 Information Asymmetry in the Digital Age

While UPI transaction data provides new information for credit assessment, it may create its own distortions. Borrowers increasingly understand that digital transactions influence credit access, potentially leading to artificial transaction creation or manipulation. The gaming of digital footprints represents a new form of information asymmetry that traditional credit scoring models aren't designed to detect.

Moreover, the algorithmic nature of fintech lending, while efficient, may embed biases or make systematic errors that only become apparent during economic stress. The COVID-19 pandemic provided an early stress test, with many digital lenders experiencing higher-than-expected defaults, raising questions about the robustness of alternative credit scoring models.

7 Remaining Challenges: The Unfinished Agenda

Beyond concerns about credit quality and sustainability, other significant challenges persist in achieving truly inclusive finance.

7.1 Gender Inequality

Despite remarkable progress, gender inequality in financial access remains particularly acute. While women account for 55% of PMJDY accounts, the share of credit received by women under 30 remains disproportionately low at approximately 27%, compared to 40% for men ([NITI Aayog, 2025](#)). Cultural barriers, limited asset ownership for collateral, and restricted mobility continue to constrain women's financial empowerment.

More concerningly, when women do access credit, it often comes through joint liability groups or with male family member guarantees, limiting their financial autonomy. The digitalization of finance, while removing some barriers, may create new ones as women have lower smartphone ownership and digital literacy rates than men.

7.2 The Last Mile Problem

The digital divide, while narrowing, hasn't disappeared. Remote areas still lack reliable internet connectivity, with nearly 25,000 villages lacking mobile coverage entirely.² Digital literacy remains limited among older populations and in certain regions. The sophisticated cyber-fraud

²See [Read the Business Today Article](#)

ecosystem preys particularly on new digital users, potentially undermining trust in digital financial systems.

Language barriers compound these challenges. Most fintech applications operate primarily in English and Hindi, excluding millions who speak only regional languages. The complexity of terms and conditions, even when translated, remains beyond the comprehension of many users.

7.3 Regulatory Gaps and Systemic Risks

Regulatory frameworks haven't kept pace with innovation. The rapid proliferation of digital lenders has outstripped regulatory capacity, with hundreds of apps operating without proper oversight. Data privacy concerns grow as financial footprints expand, while data protection legislation and enforcement remain nascent.

The concentration of digital payments through a few large players raises systemic risk concerns. UPI's dominance, while enabling network effects, creates single points of failure. The lack of interoperability with international payment systems hinders remittance flows, a vital source of income for many businesses.

8 Conclusion

8.1 Lessons for Global Development

India's experience offers valuable lessons for other developing economies pursuing financial inclusion, both in terms of successes to emulate and pitfalls to avoid.

First, public digital infrastructure can dramatically alter the economics of financial services, enabling sustainable market-based solutions where none existed previously. However, infrastructure alone is insufficient—complementary interventions in regulation, financial literacy, and consumer protection are essential.

Second, financial inclusion requires a systems approach, as isolated interventions rarely achieve transformative impact. The sequencing matters: foundational infrastructure (identity, accounts, connectivity) must precede more sophisticated services.

Third, the government's role isn't to replace markets but to complete them, intervening where market failures persist while enabling private innovation elsewhere. However, this requires sophisticated regulatory capacity to prevent exploitation of newly included, often vulnerable populations.

Fourth, measuring success requires looking beyond headline numbers of accounts opened or loans disbursed to examine usage patterns, terms of access, and long-term impacts on household welfare. The absence of systematic data on these dimensions represents a critical gap in evidence-based policymaking.

Finally, financial inclusion is not an end but a means—the ultimate goal is economic empowerment and improved livelihoods. Without attention to the productive deployment of credit and the sustainability of borrowing, financial inclusion risks becoming financial entrapment.

8.2 The Promise and Peril

India’s financial inclusion journey demonstrates both the tremendous potential and inherent risks of rapid financial system expansion. The creation of digital public infrastructure has undeniably transformed access to financial services for hundreds of millions. The innovative combination of identity, payments, and account infrastructure created possibilities that neither government programs nor market forces alone could achieve.

Yet, as credit expands into previously unserved populations, fundamental questions about sustainability and impact demand urgent attention. Are we witnessing genuine financial empowerment or the creation of new dependencies? Does expanded credit access facilitate economic mobility or entrench existing inequalities through unsustainable debt?

The answer likely varies across contexts and populations. For some, particularly established micro-entrepreneurs and those with steady income streams, access to formal credit represents genuine opportunity. For others, particularly those using credit for consumption or facing volatile incomes, current lending practices may create more problems than they solve.

Moving forward, India’s financial inclusion agenda must evolve from focusing on access to emphasizing responsible and productive finance. This requires better data on credit utilization and its impact, stronger consumer protection frameworks, and innovative products that align borrowing costs with realistic returns from productive investments, perhaps using payment innovations like the digital rupee (e-rupee) to monitor end-use. Financial literacy and capability building must accompany the expansion of access.

As countries worldwide grapple with inequality and exclusion, India’s experience provides both inspiration and cautionary lessons. Financial inclusion at scale is possible through public digital infrastructure and coordinated policy intervention. However, without careful attention to the terms, uses, and sustainability of financial access, inclusion efforts risk replacing one form of exclusion with another—transforming the unbanked into the indebted without genuine economic advancement.

The ultimate measure of success will not be the number of accounts opened or loans disbursed, but whether financial inclusion enables sustained improvements in livelihoods and genuine pathways out of poverty. This remains an open question, demanding continued research, policy innovation, and honest reckoning with both the promises and perils of financial inclusion.

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