International Journal for Multidisciplinary Research (IJFMR)

E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Financial Inclusion and Women's Empowerment across Social Groups in India: Evidence from NFHS-5

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Abstract

Comprehensive financial inclusion is the foundation of India's economic strategy to empower women. This objective is being pursued through state-sponsored mechanisms, including the Pradhan Mantri Jan-Dhan Yojana (PMJDY) and the rapid expansion of digital mobile-banking infrastructures like the Unified Payments Interface (UPI). While aggregated national data derived from the National Family Health Survey-5 (NFHS-5) show a broad success, indicating that 78.6% of Indian women possess functional bank accounts and 53.9% own independent mobile phones. This study examines the equitable distribution of these developmental gains across historical fault lines. By systematically analyzing NFHS-5 unit-level data across constitutional social categories, the analysis reveals deep structural disparities that challenge the narrative of universal inclusion. Scheduled Tribe (ST) women consistently show the lowest levels of formal financial integration nationally, with basic bank account ownership stagnating at 75.0% and independent mobile phone ownership at merely 39.9%. Paradoxically, data demonstrates that these same marginalized groups register the highest national rates of traditional, physical asset ownership, including house (47.0%) and agricultural land (39.0%) ownership. This socio-economic divergence suggests that customary land tenure, particularly land protected under the Forest Rights Act (FRA 2006), does not translate into modern financial liquidity or digital autonomy. Traditional land provides shelter but lacks the collateral utility required for commercial banking. Furthermore, this study analyzes the infrastructural and biometric barriers, such as Aadhaar authentication failure for manual laborers and telecom network limitations in Scheduled Areas, that restrict Adivasi women from accessing the digital economy. To provide a comprehensive sociological critique, this paper examines modern challenges through the lens of India's banking history. It also contrasts the current domestic landscape with global models, such as Kenya's M-Pesa, and the aggressive strategies used by private Microfinance Institutions (MFIs). The paper concludes that addressing this digital and financial divide requires targeted, localized infrastructure investments, algorithmic non-collateralized lending, and FinTech innovations like offline digital payments, moving away from reliance on generic national policies.

Keywords: Financial Inclusion, Digital Divide, Scheduled Tribes, Women's Empowerment, NFHS-5, Asset Ownership, Forest Rights Act, Intersectionality, FinTech, Microfinance Institutions.

1. Introduction

Within the field of developmental economics, robust financial inclusion is recognized as the foundational structure required for sustainable poverty alleviation and gender equity. Meaningful inclusion must move beyond the possession of a dormant bank account; it requires dynamic, unhindered access to credit facilities, secure savings instruments, and the digital payment infrastructure that increasingly governs modern economic life. For marginalized women, especially those living in patriarchal societies, holding independent, accessible savings is crucial for increasing their decision-making power at home and building long-term economic resilience. Access to formal banking allows these women to manage household consumption during difficult agricultural seasons and invest in education and healthcare without resorting to predatory informal lenders.

The Government of India has organized a massive, state-led macroeconomic mobilization designed to democratize access to the formal banking sector. Initiatives such as the Pradhan Mantri Jan-Dhan Yojana (PMJDY), combined with the grassroots growth of millions of Self-Help Groups (SHGs) under the National Rural Livelihoods Mission, were designed to eliminate historic financial exclusion. To facilitate this, regulations around Know Your Customer (KYC) norms were relaxed, allowing millions to open accounts with minimal documentation, largely tied to the Aadhaar biometric system. At an aggregated macroeconomic glance, this multidimensional strategy appears successful, integrating tens of millions of previously unbanked rural women into the formal economic fold. The sheer volume of digital transactions via the Unified Payments Interface (UPI) further underscores the rapid modernization of the rural economy, projecting an image of a seamlessly digitizing nation.

However, relying solely on broad national statistics frequently hides entrenched structural divides. India’s socio-demographic landscape is highly stratified by historic caste and tribal identities, which persistently dictate an individual's access to public infrastructure, institutional resources, and socio-economic mobility. A superficial celebration of national averages risks ignoring the ongoing marginalization of specific vulnerable groups. This is particularly true for indigenous tribal populations situated in remote, underdeveloped geographic areas where the physical presence of banking infrastructure remains scarce. In these regions, the transition from cash-based, informal economies to digitized, formal financial systems is hindered by both severe structural deficits and cultural barriers. Consequently, treating 'women' as a monolithic category in economic literature fails to capture the intersectional realities of those at the very bottom of the social hierarchy.

2. Historical Context of Banking in India

To understand the current disparities in financial inclusion, it is essential to contextualize the historical evolution of banking in India. The nationalization of major commercial banks in 1969 was a watershed moment, theoretically designed to redirect credit away from elite urban industrialists and toward rural agriculture and marginalized sectors. While this policy dramatically expanded the rural branch network in agrarian plains, it systematically failed to penetrate the densely forested, hilly terrains inhabited by Scheduled Tribes. The commercial logic of banking, requiring high population density and secure collateral made expansion into Scheduled Areas unprofitable and administratively difficult.

For decades, the state's response to this failure was the promotion of Cooperative Credit Societies. However, as documented by numerous economic historians, these cooperatives were frequently captured by dominant local agrarian castes who utilized their political influence to secure subsidized credit for themselves, leaving landless Dalit (SC) and forest-dwelling Adivasi (ST) populations excluded. Therefore, the modern push for financial inclusion, spearheaded by the PMJDY in 2014, inherited a deeply skewed geographical and social infrastructure. While the PMJDY successfully addressed the 'bureaucratic exclusion' by mandating zero-balance accounts, it could not instantly erase the geographical isolation that had been cementing itself for half a century. The physical absence of branches in tribal districts meant that while Adivasi women now possessed bank passbooks, the actual utility of those books was severely limited by distance and lack of digital literacy.

3. Review of Literature

The theoretical foundation of this analysis is anchored in Naila Kabeer's (1999) 'Resources, Agency, and Achievements' sociological framework. Kabeer emphasizes that genuine empowerment is based on unhindered access to vital 'resources'. However, the precise nature, liquidity, and social utility of those resources determine their empowering potential. For indigenous tribal populations, customary land ownership has historically served as a culturally significant resource. Yet, in a modernizing, digitized macroeconomic ecosystem, illiquid customary assets do not readily confer the transactional ease or formalized creditworthiness required to engage with modern financial institutions.

To understand why these resources fail to translate into financial power, we must turn to the sociological theory of intersectionality. Crenshaw (1989) posited that social categories such as race, class, and gender intersect to create overlapping and interdependent systems of discrimination or disadvantage. In the Indian context, Deshpande (2011) translates this to the intersection of caste, tribe, and gender. A Dalit (SC) or Adivasi (ST) woman does not merely experience the patriarchy of being a woman plus the marginalization of being tribal; the intersection creates a unique, compounded form of exclusion. Mainstream financial systems are implicitly designed for the literate, urban, and property-owning castes. When an Adivasi woman interacts with a formal bank, she faces a triad of prejudices: she is a woman (often deemed uncreditworthy without a male guarantor), she is tribal (often stereotyped as economically backward), and she is rural (facing severe infrastructural deficits).

Furthermore, recent scholarship in digital anthropology critiques the rapid digitization of Indian welfare. Drèze and Khera (2017) highlighted the exclusionary potential of making welfare and financial services contingent on Aadhaar biometrics. They documented how manual laborers, particularly those from SC and ST communities engaged in heavy agricultural or construction work, frequently face fingerprint authentication failures. When a banking system mandates biometric proof that a laborer cannot provide due to worn fingerprints, the technology itself becomes an instrument of exclusion. Similarly, Morawczynski (2020) argues that the design of mobile banking interfaces (often entirely text-based and in English or mainstream regional languages) actively alienates tribal populations who rely on distinct oral vernaculars.

While numerous studies evaluate national financial inclusion through generic urban-rural or gender comparisons, there is a concerning lack of rigorous literature that systematically intersects these financial metrics with specific, constitutionally defined social categories. Furthermore, the paradoxical contrast between traditional physical asset ownership and modern financial liquidity among tribal populations remains severely under-analyzed. The recent UNFPA (2023) synthesis of NFHS-5 demographic data provides a detailed empirical foundation necessary to address this analytical gap, allowing for a precise evaluation of how different social groups are navigating the digital financial transition.

4. Problem Statement

Policy discussions about financial inclusion in India often point to national survey statistics as proof of

success. However, we must critically examine the methods used in large datasets like the NFHS-5 before accepting them as fact. While the sample size is vast, demographic surveys often rely on self-reported data. In deeply patriarchal settings, a woman might report 'owning' a bank account, but she may possess absolutely no operational control over the debit card or the PIN. Therefore, while the NFHS-5 accurately captures bureaucratic 'inclusion' (the existence of an account), it likely overestimates genuine financial 'empowerment' (the autonomous control of that account).
Furthermore, the metric of measuring 'household' assets is inherently problematic when analyzing gender empowerment. Large-scale surveys often categorize a smartphone as a household asset. However, in low-income tribal or rural households, a single smartphone is almost exclusively controlled by the male head of the household. Therefore, equating household digital access with female digital autonomy is a methodological fallacy. In addition to this, deeply nomadic Particularly Vulnerable Tribal Groups (PVTGs) often fall completely outside the sampling frames of standard household surveys, suggesting the realities of the most marginalized are even worse than the published data indicates.
The fundamental developmental question is whether the integration of digital finance serves to equalize society, or whether it replicates and reinforces deep-seated historic inequalities. If the digital transition disproportionately benefits already privileged groups while leaving marginalized communities behind due to infrastructural and biometric barriers, it actively widens the economic gap between mainstream society and vulnerable tribal populations.

5. Objectives of the Study

1. To document and compare women's bank account and mobile phone ownership metrics across the four major constitutional social categories utilizing NFHS-5 datasets.
2. To analyze the systemic disparities in digital access, isolating the specific marginalization of Scheduled Tribe women through an intersectional lens.
3. To compare modern financial integration indicators directly against traditional physical asset ownership metrics (house and agricultural land) across the same demographic subsets.
4. To analyze the legal constraints of the Forest Rights Act (FRA 2006) to explain the paradox of land-rich but cash-poor tribal households.
5. To contextualize these findings within the broader history of Indian banking and the role of private Microfinance Institutions (MFIs).
6. To formulate FinTech and policy recommendations designed to bridge the specific digital and financial access deficits afflicting remote tribal populations.

7. Research Methodology

This research employs an analytical secondary data synthesis methodology predicated on the National Family Health Survey-5 (NFHS-5), conducted across India between 2019 and 2021. The NFHS-5 is a large-scale, multi-round survey conducted in a representative sample of households throughout India, making it a highly reliable source for demographic and health data.
Data Source: The socio-economic breakdown utilized in this analysis is derived from an analytical synthesis of the raw NFHS-5 unit-level data published by the United Nations Population Fund (UNFPA) India in late 2023. This document reports women's specific asset and financial ownership explicitly separated by self-reported historic social categories. The massive sample size of the NFHS-5 ensures that the findings regarding minority groups like Scheduled Tribes hold high statistical significance.

Analytical Framework: The study measures the concept of 'modern financial inclusion' primarily through two metrics: the possession of an active bank account, and independent mobile phone ownership. Independent mobile ownership represents a non-negotiable prerequisite for engaging with modern digital finance, receiving SMS banking alerts, and utilizing UPI. Simultaneously, traditional physical asset ownership (land and housing) is utilized as a comparative baseline metric denoting historic economic security.

8. Data Analysis and Results

A. Stratification in Modern Financial and Digital Inclusion

An examination of the detailed data questions the narrative of uniform national success, revealing profound structural inequalities regarding basic access to modern financial architecture.

Constitutional Social Category	Active Bank Account Ownership	Independent Mobile Phone Ownership
Scheduled Tribe (ST)	75.0%	39.9%
Scheduled Caste (SC)	79.4%	48.3%
Other Backward Class (OBC)	79.7%	54.6%
General Category	78.1%	65.0%
National Aggregate Average	78.6%	53.9%

UNFPA Analysis of NFHS-5 Data (2023)

Table 1 illustrates a concerning digital and financial divide. While the national bank account ownership sits at 78.6%, marginalized Scheduled Tribe women trail behind all other groups at 75.0%. The opening of Jan-Dhan accounts has narrowed the gap in basic account holding, but usage remains an issue due to the severe distance to physical bank branches in forested areas. However, the most critical disparity is evident in vital mobile phone ownership. A mere 39.9% of ST women own an independent mobile device, standing in stark contrast to the 65.0% ownership rate recorded among General category women. This 25-percentage-point deficit effectively locks the vast majority of indigenous tribal women out of the rapidly expanding ecosystem of digital banking. Without a phone, they cannot receive OTPs for secure transactions, check balances remotely, or utilize digital wallets, restricting them entirely to exploitative cash economies.

B. The Paradox of Traditional Physical Asset Ownership

In stark contrast to their severe exclusion from digital and modern financial liquidity, the data regarding traditional physical asset ownership reveals an inverted socio-economic hierarchy.

Constitutional Social Category	House Ownership (Sole or Joint)	Agricultural Land Ownership (Sole or Joint)
Scheduled Tribe (ST)	47.0%	39.0%
Scheduled Caste (SC)	43.3%	30.2%
Other Backward Class (OBC)	44.9%	33.8%

General Category	36.2%	27.9%
National Aggregate Average	42.3%	31.7%

UNFPA Analysis of NFHS-5 Data (2023)

Table 2 presents a striking empirical puzzle. Scheduled Tribe women register the highest rates of both house ownership (47.0%) and agricultural land ownership (39.0%) in the nation, vastly surpassing the historically wealthy General category. This structural difference proves that ST women are uniquely 'asset-rich' in terms of traditional, physical property, yet simultaneously remain completely 'finance-poor' regarding access to modern macroeconomic instruments. This ownership is often tied to progressive land titling under protective tribal laws. However, as the next section will explore, this specific type of land tenure comes with severe financial restrictions.

9. The Legal Paradox of the Forest Rights Act (FRA)

To understand why 39% agricultural land ownership does not translate into wealth for ST women, one must analyze the legal mechanics of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA). The FRA was a historic piece of legislation designed to correct historic injustices by formally recognizing the rights of forest-dwelling communities who had been treating the forests as their ancestral home for generations but lacked formal paperwork.

The FRA issues two primary types of titles: Individual Forest Rights (IFR) and Community Forest Rights (CFR). These titles grant the right to hold and live in the forest land, the right to cultivate for livelihood, and the right to gather minor forest produce. Crucially, Section 4(4) of the FRA explicitly states that the rights conferred under the Act are 'heritable but not alienable or transferable.' This was intentionally designed as a protective mechanism. The state recognized that if tribal land could be easily bought and sold, wealthy corporations or local elites would quickly purchase or coerce the land away from impoverished tribes, leading to massive displacement.

However, this protective 'inalienability' creates a massive paradox within a capitalist banking system. Commercial banks operate on risk mitigation; they require physical collateral (assets that can be seized and sold) to issue large commercial or agricultural loans. Because FRA land cannot be legally transferred or sold by a bank in the event of a loan default, banks outright refuse to accept FRA titles as valid collateral. Therefore, a tribal woman may legally 'own' twenty acres of productive forest land under the FRA, but she cannot use that immense physical wealth to secure a ₹50,000 loan from the State Bank of India to buy a tractor or set up a processing unit. She is land-rich, but structurally locked out of capital. This legal friction is why traditional asset ownership (as shown in Table 2) fails to bridge the modern financial gap (as shown in Table 1).

10. The Threat of Predatory Microfinance Institutions (MFIs)

When public sector banks refuse to lend due to a lack of alienable collateral (caused by the FRA), private Microfinance Institutions (MFIs) and Non-Banking Financial Companies (NBFCs) quickly step in to meet the demand. Unlike traditional banks, MFIs operate on the principle of 'social collateral', issuing small, uncollateralized cash loans to joint-liability groups of women at significantly higher interest rates, often ranging from 18% to 26%.

While MFIs provide essential, immediate liquidity to tribal women excluded by mainstream banks, they introduce a severe risk of debt traps. Because tribal incomes derived from agriculture or forest gathering are highly volatile and dependent on erratic monsoons, women often find themselves unable to meet the rigid, weekly repayment schedules demanded by private MFIs. This leads to a dangerous phenomenon known as 'multiple borrowing' or 'loan stacking,' where a woman takes a loan from MFI 'B' to pay off the interest owed to MFI 'A'.

The Andhra Pradesh microfinance crisis of 2010 serves as a grim historical cautionary tale. Aggressive, coercive recovery tactics by private MFIs led to widespread distress among rural women borrowers. This historical context proves that mere 'access to credit' is not synonymous with 'empowerment.' If financial inclusion simply means integrating Adivasi women into predatory, high-interest debt cycles governed by private corporations rather than subsidized state banking, it fundamentally degrades their socio-economic resilience.

11. Infrastructural and Biometric Barriers

Beyond legal constraints and predatory lending, the daily physical reality of banking in Scheduled Areas is plagued by infrastructural failures. The push for digital financial inclusion relies heavily on the 'JAM trinity' (Jan Dhan-Aadhaar-Mobile). For an ST woman to withdraw cash or receive state subsidies, she must often authenticate her identity using her Aadhaar biometric fingerprint at a micro-ATM or a local Business Correspondent (BC) point.

This system regularly fails the most marginalized. Anthropological fieldwork reveals that women engaged in heavy manual labor such as stone crushing, agricultural weeding, or NTFP gathering often suffer from worn or calloused fingerprints. This leads to high rates of biometric authentication failure. When the machine rejects her fingerprint, the bank rejects her transaction, effectively denying her access to her own money. Furthermore, the BC model is commercially unviable in sparsely populated, remote tribal hamlets. BCs operate on commission. If there aren't enough daily transactions, they abandon the area. Along with severe telecommunication 'blackspots' where mobile internet does not exist, the technological infrastructure required for modern banking physically disintegrates in tribal geographies.

12. Discussion and Implications

The empirical evidence confirms that aggregated national metrics obscure the deep vulnerabilities faced by marginalized indigenous women. The difference between their high rates of customary physical asset ownership and their severe exclusion from modern digital finance highlights a complex developmental challenge. They have achieved a level of security in traditional terms but are being systematically left behind in the rapidly digitizing economy.

This paradox perfectly illustrates Crenshaw's theory of intersectionality. The financial exclusion of ST women is not an accident, but the compounding result of protective but restrictive legal frameworks (FRA), geographic isolation causing infrastructural deficits (no cell towers), technological designs that ignore their physical realities (biometric failures), and a history of banking that prioritized urban elites over forest dwellers.

Global Comparisons: To fully appreciate the scale of this issue, one must look at successful international models. In Kenya, the M-Pesa mobile money system achieved near-universal financial inclusion without requiring users to own smartphones or rely on biometric fingerprinting. M-Pesa utilized basic SMS technology on feature phones, supported by an immense network of localized agents. India's UPI system is globally renowned for its sophistication, but it is implicitly designed for smartphone users with stable 4G connections. The Kenyan model proves that financial inclusion for the rural poor requires prioritizing robust, low-tech accessibility over high-tech complexity.

13. Policy Implications and Suggestions

To rectify these deep-seated structural inequalities, the government and the financial sector must pivot toward targeted, localized innovations:

1. Non-Collateralized Algorithmic Lending: Public sector banks must develop alternative credit scoring models that do not rely on alienable land collateral. By analyzing a woman's SHG savings history, her repayment discipline, and her historical NTFP procurement records, banks can algorithmically determine creditworthiness and issue affordable loans without requiring FRA land as a mortgage.
2. Offline Digital Payments (FinTech Innovation): Given the network blackspots in Scheduled Areas, the Reserve Bank of India (RBI) must aggressively push for the adoption of offline digital payment solutions. Technologies utilizing near-field communication (NFC) or localized Bluetooth meshes can allow tribal women to conduct secure, cashless transactions for daily goods without requiring an active 4G internet connection.
3. Voice-Assisted Vernacular Banking: To combat both illiteracy and digital alienation, banking applications must move beyond text-based English or Hindi interfaces. FinTech companies should be subsidized to develop voice-assisted, AI-driven banking interfaces that operate in specific tribal vernaculars (e.g., Gondi or Koya), allowing women to verbally instruct transactions.
4. State-Subsidized Hardware and Infrastructure: The government must abandon reliance on profit-driven private telecom corporations for achieving rural connectivity. The Universal Service Obligation Fund (USOF) must be utilized to physically build state-owned high-speed mobile network towers directly within remote regions. Furthermore, subsidized or free smart devices must be distributed through SHG networks to close the 25-percentage-point mobile ownership gap.
5. Alternative Authentication Mechanisms: To solve the biometric exclusion caused by worn fingerprints, banking correspondents must be equipped with localized iris scanners, or the RBI must approve secure, OTP-based localized community-vouching systems for low-value transactions in tribal hamlets.

14. Conclusion

The exhaustive breakdown of the NFHS-5 dataset decisively proves that the national narrative of widespread financial inclusion hides deeply embedded, intersectional socio-economic divisions. Marginalized Scheduled Tribe women exist within a highly complex developmental paradox: they possess vastly superior traditional asset wealth through legally protected historic land and housing, yet they suffer from severe exclusion from the fundamental tools of the modern digital economy, specifically vital mobile phones and active bank accounts.

This difference powerfully highlights that traditional asset security (governed by protective laws like the FRA) and modern financial liquidity (governed by commercial banking norms) operate on entirely separate, often conflicting tracks. To achieve genuine, equitable economic inclusion, future Indian macroeconomic plans must not be limited to generic national approaches. The state must urgently prioritize targeted investments in digital infrastructure, embrace offline FinTech innovations, and develop non-collateralized credit models. Only by dismantling the specific biometric, legal, and geographic barriers facing indigenous populations can India ensure that its digital revolution does not become an engine of further marginalization.

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