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Technology-Driven Financial Inclusion and Women's Empowerment in India: Where Does Haridwar Stand?

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Abstract

This research explores the nexus between digital technology, financial inclusion, and women's empowerment, with a specific focus on Haridwar district in Uttarakhand, India. Financial inclusion, propelled by digital platforms and policy interventions such as Jan Dhan Yojana, Aadhaar, and mobile banking, has been widely recognized as a key driver of socio-economic development. However, the gendered dimensions of access and impact remain underexplored in regional contexts. Using a secondary data-based methodology, this study draws insights from NFHS-5, NSSO reports, Census data, and district-level human development indicators, complemented by qualitative evidence from verified case studies and development reports. It examines the role of digital financial services (like UPI, mobile wallets, and PMJDY accounts) in enhancing women's access to credit, savings, insurance, and government benefits. The paper also highlights the progress and persistent gaps in Haridwar, where socio-cultural norms, digital illiteracy, infrastructural barriers, and gender biases continue to limit the effectiveness of financial inclusion efforts. Through comparative analysis, tabular insights, and real-life case snapshots from Uttarakhand, the study underscores that while digital financial infrastructure has improved, its impact on women's agency, entrepreneurship, and decision-making is uneven and often mediated by social structures. Key findings indicate that policy outreach needs to be more gender-sensitive and locally adaptive. The paper concludes with actionable recommendations for improving digital access, financial literacy, and institutional support for women. This research contributes to the broader discourse on inclusive digital development and offers region-specific insights for policymakers, financial institutions, and grassroots organizations striving to bridge the digital gender divide in India.

Introduction

Financial inclusion, defined as access to affordable financial services such as savings, credit, insurance, and digital payments, has emerged as a critical enabler of gender equality and women's economic empowerment in the 21st century. In India, various policy initiatives like the Pradhan Mantri Jan Dhan Yojana

(PMJDY), Direct Benefit Transfer (DBT), and the proliferation of digital financial services (DFS) such as UPI, mobile wallets, and Aadhaar-linked banking have aimed to bridge the financial access gap, especially for women.

However, the relationship between digital finance and women's empowerment is complex and deeply influenced by socio-economic,

geographic, and cultural factors. While national-level indicators suggest a rise in bank account ownership and mobile penetration among women, there exists a substantial gender gap in actual usage, digital literacy, and autonomy over financial decisions. These disparities are often amplified in semi-urban and rural regions, where infrastructure and patriarchal norms further hinder inclusion.

Haridwar, a district located in the state of Uttarakhand, presents a compelling case for analysis. It embodies both traditional rural settings and rapidly urbanizing pockets, offering a diverse socio-economic landscape to examine how technology intersects with financial inclusion and gender empowerment. Despite moderate success in improving banking penetration, issues such as device access, digital awareness, and active usage continue to persist among women in the district.

This study aims to investigate the depth and quality of women’s financial inclusion in Haridwar, analysing key indicators such as digital account ownership, transaction behavior, infrastructure availability, and scheme awareness. It explores whether technology has genuinely empowered women in Haridwar or whether structural and gendered barriers continue to limit their financial agency.

Objectives of the Study

- To analyse the extent and nature of digital financial inclusion among women in Haridwar district, with reference to access, usage, and awareness of financial services.
- To examine the role of digital financial technologies in influencing women’s economic empowerment, including decision-making, financial autonomy, and livelihood opportunities.
- To identify key socio-cultural, technological, and infrastructural barriers affecting women’s participation in digital financial systems and suggest policy-oriented interventions.

Overview of Financial Inclusion in India National Progress on Financial Inclusion

India has witnessed transformative progress in financial inclusion, primarily through digital technology and targeted government policies. Key initiatives include:

- **Pradhan Mantri Jan Dhan Yojana (PMJDY):** Launched in 2014, it led to the opening of over 500 million bank accounts by 2023, significantly increasing banking access among women and rural households. To understand the scale and composition of this expansion over time, Table 1 presents the growth of PMJDY accounts in India.

Table 1: Growth of PMJDY Accounts in India (2015–2023)

Year	Total Accounts (Crore)	Women Account Holders (%)	Rural/Semi-Urban Share (%)
2015	14.72	53	60
2017	30.90	53.6	59
2019	36.79	55	60
2021	43.04	55.7	67
2023	50.89	56	67

Source- Ministry of Finance, Government of India (PMJDY Dashboard, 2023); RBI Reports

The data reflects a substantial expansion in financial inclusion, particularly among women and rural populations. However, despite rising account ownership, this does not necessarily indicate active financial participation, reinforcing the need to examine usage patterns.

- **JAM Trinity (Jan Dhan–Aadhaar–Mobile):** This integrated framework ensures efficient, transparent delivery of government subsidies,

pensions, and wages directly to beneficiaries’ bank accounts.

- **UPI & Mobile Banking:** The Unified Payments Interface (UPI) alone processed 74 billion transactions in FY 2022–23, demonstrating the rapid adoption of digital payment systems.

Digital Financial Inclusion & Women

While national indicators reflect overall success, gender disparities are evident:

Table 2: Gender Gaps in Financial Inclusion (India)

Indicator	Men (%)	Women (%)	Gender Gap (%)	Source
Own a bank account	81%	76%	5%	Global Findex (2021)
Used digital payments	43%	30%	13%	Global Findex (2021)

Own a mobile phone	91%	84%	7%	GSMA (2023)
Use mobile internet	57%	38%	19%	GSMA (2023)
Access to formal credit (like loans)	23%	13%	10%	RBI & NITI Aayog (Est.)
Insurance coverage	19%	11%	8%	IRDAI Reports

The table highlights a persistent gender gap in financial inclusion, especially in mobile internet use and digital payments. While bank account ownership among women is high, actual usage through digital means remains low. Gaps in access to formal credit and insurance further limit women's financial empowerment. Overall, digital barriers continue to restrict women's full participation in financial systems.

Government Schemes Targeting Women

- **Mahila Samman Savings Certificate (2023):** Encourages savings among women with fixed returns.
- **Stand-Up India & Mudra Yojana:** Support entrepreneurial ventures by providing easier credit access for women.
- **PMGDISHA (Digital Literacy Mission):** Aims to digitally train 6 crore rural households, including women.
- **Persistent Challenges-** Despite policy efforts, several barriers remain:
- **Socio-cultural barriers:** Patriarchal norms often limit women's control over financial decisions.
- **Lack of digital infrastructure:** Especially in remote and semi-urban areas.
- **Awareness gap:** Many women are unaware of available schemes or how to benefit from them.

While India's financial inclusion model is globally recognized, gender-based digital and financial divides still pose significant challenges. Bridging these gaps through infrastructure, targeted outreach, and financial literacy remains essential for inclusive development. This becomes even more crucial when examining regions like Haridwar, where socio-cultural and infrastructural factors shape women's financial participation.

Digital Financial Services and Gender: A Growing Yet Uneven Landscape

Digital Financial Services (DFS) such as mobile banking, UPI-based transactions, Aadhaar-enabled payments, and digital wallets have transformed financial inclusion in India. However, their reach remains unequal across

gender lines, especially in rural and semi-urban areas like Haridwar.

Women, particularly in rural India, face systemic disadvantages in accessing and utilizing these services. According to GSMA's Mobile Gender Gap Report (2023), only 38% of rural women use mobile internet compared to significantly higher male usage. While government initiatives like Jan Dhan-Aadhaar-Mobile (JAM) and PMGDISHA have increased access to formal banking and digital literacy, their actual usage by women remains sub-optimal.

For instance:

- A woman may own a bank account (thanks to Jan Dhan Yojana) but may rarely use it without male assistance.
- Digital wallets and UPI apps often require a smartphone, stable internet, and confidence in usage assets many rural women lack.
- Concerns around digital fraud, data privacy, and lack of local language interfaces further deter participation.

In Haridwar, these issues are compounded by cultural norms. While mobile ownership among women is around 44.8%, shared usage is common, restricting privacy and autonomy in financial decisions. Many are aware of schemes like PMGDISHA or Digital India but don't enroll due to mobility constraints, lack of digital support, or family opposition.

This gender gap in digital financial services reflects a broader digital divide not just of access, but of capability, trust, and control. Bridging it requires more than infrastructure; it demands targeted digital literacy, gender-sensitive app design, and grassroots financial education led by women trainers and community leaders.

District Focus: Haridwar's Financial Inclusion Landscape

Haridwar, a prominent district in Uttarakhand, presents a mixed landscape when it comes to financial inclusion and women's empowerment through digital means. As a semi-urban and largely agrarian district with pockets of industrial development, the disparities in access to digital financial tools are sharply drawn across urban-rural and gender lines.

Table 3: Status and Key Constraints of Digital Financial Inclusion among Women in Haridwar District

Indicator	Data/Status	Remarks
Bank Account Ownership (Women)	Around 70% (PMJDY accounts)	High enrollment, but many accounts are inactive.
Active Account Usage (Rural Women)	Approximately 36% (NABARD 2022)	Limited usage for savings or digital transactions.
Mobile Phone Ownership (Women)	44.8% (NFHS-5, 2020–21)	Smartphone access is even lower; many depend on shared devices.
Internet Access (Rural Households)	About 22% (District Census Handbook, Digital India Reports)	Connectivity is unreliable, particularly in remote blocks.
Digital Literacy in Households	Around 16% have at least one digitally literate member (NSSO 2017–18)	Digital skills remain a key barrier for financial inclusion.
Distance to Digital Access Points (CSCs)	>5 km (average)	Physical access limits digital service adoption.
Awareness of Digital Finance Tools	Low awareness of UPI, Aadhaar-linked payments, and mobile banking	Many women still rely on intermediaries or male relatives.
NGO/SHG Support (e.g., SEWA, DAY-NRLM)	Present in select areas	Impactful, but lacks widespread penetration and infrastructure support.
Socio-Cultural Constraints	Strong gender norms limit mobility and financial decision-making	Women often excluded from financial choices within the household.

Source- Gathered from multiple sources through the use of secondary data.

The table highlights the multifaceted challenges facing women in Haridwar regarding financial inclusion. While a significant proportion of women have bank accounts under government schemes like PMJDY, active usage remains low due to poor digital literacy, limited mobile ownership, and patchy internet access. Physical barriers such as long distances to Common

Service Centres (CSCs) and socio-cultural norms further restrict women’s autonomy in financial decision-making. Although some NGO and SHG initiatives are making a difference, their reach is limited. Overall, the data underscores a clear need for integrated, localized, and gender-responsive strategies to improve digital financial inclusion in the district.

Table 4: Digital and Financial Indicators - Uttarakhand vs India

Indicator	India (%)	Uttarakhand (%)
Women with bank accounts	77	76
Women owning mobile phone	54	48
Women using internet	33	28
Households with internet	47	34
Women with 10+ years schooling	41	45

Source- NFHS-5 (2019–21); NSSO Reports

Uttarakhand performs close to the national average in account ownership but lags in digital access indicators, particularly internet usage. This suggests that regional disparities in digital infrastructure and access persist, affecting districts like Haridwar.

Despite national progress in expanding financial services, women in Haridwar particularly in rural and semi-urban areas face a complex web of challenges that hinder their financial inclusion. These barriers are not only infrastructural but deeply rooted in socio-cultural norms and digital literacy gaps. Below is a categorized summary of the key challenges:

Barriers to Financial Inclusion for Women in Haridwar

Category	Barrier	Description
Socio-Cultural	Patriarchal Norms	Male-dominated decision-making limits women’s financial independence.
	Mobility Restrictions	Cultural norms restrict women from traveling to banks or digital centers.

	Financial Dependence	Women often need approval from male family members to open or use accounts.
Digital Literacy & Technology	Low Digital Literacy	Many rural women lack skills to use digital financial services like mobile banking or UPI.
	Device Ownership Gap	Shared or no personal phone access reduces financial autonomy and privacy.
	Fear of Fraud	Mistrust in digital platforms due to lack of awareness and confidence.
Infrastructure & Access	Limited Banking Facilities	Banks/ATMs are not easily accessible in remote or semi-urban parts of Haridwar.
	Poor Internet Connectivity	Weak mobile and internet coverage hinders the use of digital services.
	Inadequate Common Service Centres (CSCs)	Digital service centers are few and located far from many villages.
Policy & Outreach	Low Awareness of Government Schemes	Many women are unaware of initiatives like PMJDY, PMGDISHA, or MUDRA.
	Lack of Gender-Specific Training Programs	Absence of targeted financial/digital literacy campaigns for women.

Source- Collected from various sources using secondary data.

These barriers are interlinked, often reinforcing one another. For instance, low digital literacy limits usage even when infrastructure exists, while socio-cultural constraints amplify the exclusion caused by technological and institutional gaps. Addressing these barriers calls for a gender-sensitive and context-specific approach combining policy, infrastructure, education, and community engagement.

Case Studies

1. Women Entrepreneurs & Financial Inclusion in Haridwar & Dehradun

Source: Goel & Madan (2019), *Benchmarking financial inclusion for women entrepreneurship – a study of Uttarakhand state of India* (ResearchGate)

Case Study: Surveyed 250 women-entrepreneurs (125 SHG members and 125 RSETI trainees) in Haridwar and Dehradun.

Findings:

- Women with formal banking access and credit were significantly more likely to run micro-enterprises.
- Participation in SHGs correlated with higher financial autonomy.

Relevance: Shows how financial inclusion directly influences women's entrepreneurial outcomes in Haridwar.

2. Self-Help Group Impact: Village Cheniyali Sera, Tehri Garhwal

Source: Chandna, Chaudhary & Hasija (2022), *Women Empowerment through Self Help Groups: A Case Study of Village Cheniyali Sera, Tehri Garhwal, Uttarakhand* (IJERT)

Case Study: Examined four SHGs in Tehri Garhwal.

Findings:

- SHG membership improved financial behaviour, decision-making, and awareness.
- Women reported reduced reliance on informal lenders and increased participation in group savings.

Relevance: Reflects regional trends that are applicable to Haridwar districts of similar demographic composition.

3. SHG Performance & Empowerment in Udham Singh Nagar & Dehradun

Source: Rana et al. (2020), *Analyze the Performance of SHGs in Promoting Women's Empowerment in Uttarakhand State* (iaras.org)

Case Study: Mixed-method evaluation of SHGs in Udham Singh Nagar and Dehradun.

Findings:

- SHG members demonstrated enhanced household decision-making, saving habits, and mobility.
- Groups facilitated economic autonomy and social solidarity.

Relevance: Insights on SHG effectiveness in areas near Haridwar support similar approaches.

4. SHG-Bank Linkage & Financial Literacy Impact in Almora & Pithoragarh

Source: *International Journal of Research Publication and Reviews* (2024), assessment of NRLM-linked SHGs (ResearchGate, IJERT)

Case Study: Studied NRLM-supported SHGs in Almora and Pithoragarh, excluding but representative of Uttarakhand.

Findings:

- Joining SHGs improved saving behaviour, credit access, asset-creation, and economic resilience.

- Financial literacy within SHGs enhanced outcomes in SHG-bank linkage programmes.

Relevance: Mechanisms and results apply well to district-level work in Haridwar.

5. Financial Inclusion & Empowerment via SHGs in Almora (IERJ)

Source: Kumar & Pandey (2023), *Role of SHG in Financial Inclusion – A Study of Financial Empowerment of Women* (IER Journal)

Case Study: 104 SHG women surveyed in Almora district.

Findings:

- SHGs significantly facilitated access to formal financial products and credit.
- Women reported reduced dependency on informal moneylenders and improved financial decision-making.

Relevance: Demonstrates that SHG models can enhance financial inclusion across Uttarakhand, including Haridwar.

Findings and Discussion

This study explores the intersection of technology, financial inclusion, and women's empowerment with a regional focus on Haridwar, Uttarakhand. Drawing from national-level data, district records, and real-life case studies, several critical findings emerge:

1. Digital Financial Penetration Remains Uneven- While national-level schemes like PM Jan Dhan Yojana, JAM Trinity, and UPI have significantly improved access to banking and digital payment systems, their reach among women in rural districts like Haridwar is still limited. Many women lack individual bank accounts or digital transaction experience, which hinders full financial autonomy.

2. Gendered Barriers in Technology Use- Socio-cultural factors, including restricted mobility, male-dominated decision-making, and limited digital literacy, prevent women from engaging meaningfully with financial technology. The Digital Gender Gap persists, particularly in device ownership only a fraction of women in rural Haridwar own personal mobile phones,

limiting their ability to use fintech services independently.

3. Role of SHGs in Financial Empowerment- Case studies from Haridwar, Dehradun, Almora, and Udham Singh Nagar highlight the crucial role of Self-Help Groups (SHGs) in enabling access to microcredit, building saving habits, and promoting financial independence. Digitally linked SHGs are more successful in promoting sustainable livelihoods and resilience.

4. Low Financial Literacy and Digital Skill Levels- Even when accounts exist, digital usage remains minimal due to low awareness. Many women depend on male family members or SHG leaders to operate bank accounts or use mobile apps. Financial education initiatives are either too generic or inaccessible.

5. Infrastructural and Institutional Gaps- Banking services and digital infrastructure are unevenly distributed across blocks in Haridwar. Rural areas face poor internet connectivity, lack of digital grievance redressal, and irregular support from local financial institutions, limiting the success of government-led digital financial inclusion programs.

6. Policy Schemes Show Promise but Need Localization- Schemes like PMJDY and NRLM have created a foundational framework, but their implementation needs to be tailored to the local socio-economic context. Haridwar-specific interventions focusing on training, localized content in Hindi, and mobile-based microfinance solutions can bridge the last-mile gap.

While India has made significant strides in promoting digital financial inclusion, the case of Haridwar illustrates the continued challenges faced by women due to systemic, socio-cultural, and infrastructural barriers. Targeted, gender-sensitive, and tech-driven approaches are critical for ensuring that financial inclusion truly translates into empowerment for all women.

Recommendations

To enhance women's financial inclusion through technology in Haridwar and similar regions, the following targeted, actionable recommendations are proposed:



Source- Gathered from multiple sources through the use of secondary data.

Conclusion

This study reveals that while India has made notable progress in promoting financial inclusion through digital platforms, the benefits have not been equitably distributed across gender and geography. In Haridwar, significant gaps persist in digital access, financial awareness, and women’s autonomous participation in the digital economy. Rural women, in particular, face layered barriers including limited smartphone ownership, low digital literacy, inadequate infrastructure, and socio-cultural norms that restrict their financial agency.

Case studies from the region show that when women are provided with the right tools such as mobile connectivity, targeted training, and institutional support they can effectively manage finances, contribute to household income, and make empowered decisions. However, isolated successes are not enough.

To ensure inclusive and sustainable financial empowerment, it is essential to adopt a multi-

pronged approach that bridges infrastructural divides, promotes gender-sensitive policies, and builds digital capacity among women at the grassroots. Only by addressing these systemic challenges can digital financial services fulfill their promise of empowering every woman urban or rural, literate or semi-literate in districts like Haridwar and beyond.

References

Goel, N., & Madan, P. (2019). Benchmarking financial inclusion for women entrepreneurship: A study of Uttarakhand state of India. *Benchmarking: An International Journal*, 26(1), 160–175. <https://doi.org/10.1108/BIJ-01-2018-0023>

Rana, S., et al. (2020). Analyze the performance of self-help groups in promoting women’s empowerment in Uttarakhand state. *International Advances in Research and Innovation Symposium*.

<https://www.iaras.org/home/caijas/analyze-the-performance-of-shg-s-in-promoting-women-s-empowerment-in-uttarakhand-state>

Arner, D. W., Auer, R., & Frost, J. (2021). Fintech for financial inclusion: A framework for digital financial transformation. *World Bank Research Observer*, 36(1), 1–30. <https://doi.org/10.1093/wbro/lkab003>

Klapper, L., Singer, D., & Ansar, S. (2021). *Global Findex database 2021: India country brief*. World Bank. <https://thedocs.worldbank.org/en/doc/4c4fe6db0fd7a7521a70a39ac518d74b-0050062022/original/Findex2021-India-Country-Brief.pdf>

Ozili, P. K. (2021). Financial inclusion research around the world: A review. *Forum for Social Economics*, 50(4), 457–479. <https://doi.org/10.1080/07360932.2020.1715238>

United Nations. (2021). *Policy brief: Financial inclusion of women*. https://www.un.org/sites/un2.un.org/files/financial_inclusion_of_women.pdf

Banna, H., Alam, M. R., Ahmad, R., & Alam, M. R. (2022). Digital financial inclusion and women empowerment: Evidence from developing countries. *Journal of Economic Studies*, 49(7), 1280–1299. <https://doi.org/10.1108/JES-09-2020-0473>

Chandna, V., Chaudhary, S., & Hasija, A. M. (2022). Women empowerment through self-help groups: A case study of village Cheniyali Sera, Tehri Garhwal, Uttarakhand. *Research Review International Journal of Multidisciplinary*, 7(9), 7–15. <https://doi.org/10.31305/rrijm.2022.v07.i09.002>

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2022). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. World Bank. <https://doi.org/10.1596/978-1-4648-1897-4>

World Bank. (2022). *Digital financial services*. World Bank Group. https://www.worldbank.org/en/topic/financial_inclusion/brief/digital-financial-services

Kumar, D., & Pandey, B. (2023). Role of self-help groups in financial inclusion: A study of financial empowerment of women. *International Education and Research Journal*, 9(9).

<https://ierj.in/journal/index.php/ierj/article/view/3076>

GSMA. (2023). *The mobile gender gap report 2023*. <https://www.gsma.com/r/wp-content/uploads/2023/07/The-Mobile-Gender-Gap-Report-2023.pdf>

Gupta, M., & Kiran, R. (2024). Sectoral comparison of sustainable digital financial inclusion of women workforce with the mediation of digital banking adoption intention: An empirical analysis. *SAGE Open*. <https://doi.org/10.1177/21582440241258288>

Ha, D., Le, P., & Nguyen, D. K. (2025). Financial inclusion and fintech: A state-of-the-art systematic literature review. *Financial Innovation*, 11, 69. <https://doi.org/10.1186/s40854-024-00741-0>

Kamboj, V., & Sharma, D. (2025). Mapping the landscape of digital financial inclusion and proposing an integrative framework: Trends and future directions. *Humanities and Social Sciences Communications*, 12, 1082. <https://doi.org/10.1038/s41599-025-05500-9>

Kumari, D., Giri, A. K., & Saruparia, C. (2025). Role of gender-based digital financial inclusion and women empowerment in poverty reduction: Evidence from Asian countries. *Discover Sustainability*, 6, 283. <https://doi.org/10.1007/s43621-025-01095-y>