International Scientific Journal of Engineering and Management (ISJEM) ISSN: 2583-6129
Volume: 04 Issue: 07 | July – 2025 DOI: 10.55041/ISJEM04833
An International Scholarly || Multidisciplinary || Open Access || Indexing in all major Database & Metadata

Innovation as a Catalyst for Gender Equality: Analyzing Government Schemes and Technological Interventions in Women Entrepreneurship in India

Sourav Roy

Ph.D. Research Scholar, Department of Management, Techno India University, Kolkata.

Abstract
This study examines the role of innovation and government schemes in promoting women entrepreneurship in India, with a focus on their impact on gender equality and structural barriers in implementation. Utilizing secondary data from government reports, policy documents and Scopus-indexed research, the study analyzes schemes such as Stand-Up India, Mahila e-Haat and Udyam Sakhi. Thematic and statistical analysis reveals that while innovation-led interventions have enhanced women's access to finance, mentorship and digital platforms, their reach is hampered by digital illiteracy, inadequate internet access, cultural constraints and lack of regional customization. The findings indicate a moderate positive correlation between innovation schemes and indicators of women's economic empowerment, particularly in urban settings. However, rural and marginalized women continue to face disproportionate challenges. The study recommends region-specific innovation strategies, vernacular content development and integration of grassroots institutions to enhance the inclusivity and effectiveness of these initiatives.

Keywords: Women entrepreneurship, innovation, government schemes, gender equality, technological intervention, Women empowerment

Introduction

In the contemporary development discourse, innovation has emerged as a critical driver for inclusive growth and gender equity, particularly within entrepreneurial ecosystems. As economies become increasingly knowledge- and technology-driven, women's participation in entrepreneurship has gained strategic importance for achieving Sustainable Development Goals (SDGs), especially SDG 5 on gender equality and SDG 8 on decent work and economic growth. In India, where women constitute nearly half of the population but remain underrepresented in the formal entrepreneurial sector, innovation-led government schemes have been positioned as powerful tools to bridge gender gaps in access to finance, technology, markets and decision-making. The Indian government, recognizing the transformative potential of innovation, has implemented several flagship initiatives such as Stand-Up India**,** Mahila e-Haat**,** Udyam Sakhi and Digital India. These schemes are designed to provide institutional credit, digital marketing platforms, skill development and mentoring support to women entrepreneurs. For instance, Stand-Up India mandates at least one woman borrower per bank branch, while Mahila e-Haat offers an online marketplace for women-led enterprises. Digital India, though not gender-exclusive, seeks to improve digital infrastructure and internet penetration, indirectly enabling women entrepreneurs in remote and underserved areas to access online resources and digital tools.

Despite these promising frameworks, the ground-level impact of such schemes varies significantly across geographies and socio-economic segments. Women from urban and semi-urban regions often benefit from better infrastructure, digital literacy and awareness, while those from rural and marginalized communities continue to face entrenched barriers such as cultural constraints, language limitations, poor internet access and limited awareness of government schemes. A 2023 report by TRAI reveals that only 29% of rural women have regular internet access, limiting their participation in digital platforms like Mahila e-Haat. Moreover, many schemes lack vernacular language interfaces, creating additional hurdles for non-Hindi or non-English speaking women. By critically evaluating the intersection of innovation, public policy and gender equity, this study aims to contribute to the growing body of literature on inclusive entrepreneurship. It seeks not only to highlight best practices and success stories but also to identify the socio-cultural and infrastructural bottlenecks that must be addressed to make innovation truly transformative for India’s women entrepreneurs.

As India envisions a $5 trillion economy, harnessing the full potential of its female workforce through innovation is not just desirable—it is imperative.

Literature Review

Recent academic research has extensively examined the effectiveness and limitations of government policies aimed at empowering women in various sectors. A review of these studies reveals a nuanced picture, highlighting both notable advancements and persistent challenges.

Surana et al. (2020), this study investigated publicly funded science, technology and innovation (STI) incubators in India and their role in achieving SDGs. STI-based incubators' design and effectiveness. Lacks gender-specific analysis linking incubator support to women entrepreneurs.

Renuka Devi S. (2020), this study highlighted various government schemes aimed at rural women-led MSMEs in India, emphasizing empowerment through micro-enterprises. Rural women and MSME scheme impact. Does not assess digital or technological interventions like online marketing platforms.

Biswas (2021), this study focused on firm-level innovation in India, this study found that female-owned firms are significantly more likely to innovate—especially when they have internal funding support, are younger and operate in low-crime areas. Female ownership and innovation outcomes. Doesn't evaluate the influence of external government schemes or technological intervention platforms.

Shanti Priya & Lakshmi (2023), this study provided a policy perspective on government initiatives for developing women entrepreneurship in India, analyzing skill development programs and schemes. Evaluation of national policies and initiatives. Broad overview without empirical linkage to innovation outcomes or tech-enabled platforms.

Bhatt (2024), this study focused women empowerment through e-commerce in India, finding that digital platforms allow broader market access and revenue generation for women entrepreneurs. Role of e-commerce and digital marketing in women's entrepreneurship. Limited to descriptive analysis; doesn't connect specific government innovation schemes like Mahila e-Haat or WEP.

Gochhayat & Rout (2025), this study analyzed business–government collaboration in sustainable development of women entrepreneurs within the Indian manufacturing sector. Role of government in enabling sustainable women-led SMEs. Needs deeper analysis of tech platforms and innovation-specific schemes (e.g., e-commerce portals).

Vats & Malik (2025), this study examined government initiatives in Uttar Pradesh using secondary data to assess women's entrepreneurial empowerment, recommending targeted training and financial accessibility measures. Regional policy evaluation in women entrepreneurship. Focused regionally without linking tech-led innovation schemes at national level.

Objective of the Study

The key objectives of this study are:

1. To examine the role of innovation in promoting women entrepreneurship in India.
2. To analyze the impact of government schemes and technological interventions on gender equality.
3. To identify key challenges in the implementation of innovation-led entrepreneurship policies for women.
4. To propose policy suggestions for enhancing innovation-driven women empowerment.

Research Methodology

This study adopts a qualitative research design based on secondary data analysis to explore the role of innovation as a catalyst for gender equality in women entrepreneurship in India. Guided by the objectives of

examining innovation's role, analyzing the impact of government schemes and identifying implementation challenges, the research synthesizes information from diverse secondary sources. These include official government documents and reports from the Ministry of MSME, NITI Aayog and other relevant institutions, along with policy documents from schemes such as Stand-Up India, Mahila e-Haat, Udyam Sakhi and Startup India. Data from established national sources like NSSO, GEM Reports and RBI bulletins were also reviewed to contextualize entrepreneurship and financial inclusion trends. Additionally, peer-reviewed research articles from Scopus-indexed journals provided critical insights into existing academic discourse on innovation, policy evaluation and gender-based entrepreneurial outcomes. Thematic analysis was applied to this data to identify recurring patterns, policy gaps and implementation challenges within innovation-driven government initiatives. This methodological approach aligns with the study's intent to holistically assess how technological and policy interventions are influencing women-led enterprises and promoting gender equality in India's entrepreneurial landscape.

Data Interpretation and Analysis

Innovation has become a defining force in reshaping the contours of entrepreneurship in India, particularly for women who have historically faced structural, financial and socio-cultural constraints. With a focus on leveraging technology and inclusive policy frameworks, the Indian government has launched several innovation-led schemes such as *Stand-Up India*, *Digital India*, *Mahila e-Haat* and *Udyam Sakhi*. These initiatives have targeted financial inclusion, market accessibility, skill development and digital connectivity as key levers for women's economic empowerment. According to the Ministry of MSME (2024), the *Stand-Up India* scheme alone has facilitated over 1.3 lakh loans to women entrepreneurs, breaking longstanding barriers in access to institutional finance. *Mahila e-Haat*, launched under the Ministry of Women and Child Development, has provided a digital platform for women-led enterprises, enabling them to bypass traditional market entry barriers. However, despite these achievements, the digital divide remains a significant challenge, especially in rural areas. The Telecom Regulatory Authority of India (TRAI, 2023) reports that only 29% of rural women have consistent internet access, illustrating the gap between infrastructure availability and actual utilization by intended beneficiaries.

Thematic analysis from secondary data, policy reports and peer-reviewed literature (Bhatt, 2024; Gochhayat & Rout, 2025) indicates that while innovation-led platforms offer flexibility, scalability and alignment with socio-cultural norms (e.g., work-from-home models), they fail to provide equitable outcomes across different regions. Women in urban and semi-urban areas benefit more due to superior digital infrastructure, better education levels and greater awareness of schemes. Meanwhile, rural women often struggle with infrastructural deficits, language barriers and cultural resistance. For instance, Mahila e-Haat and Udyam Sakhi, though well-designed, are underutilized due to a lack of vernacular content and insufficient outreach mechanisms. Moreover, women remain underrepresented in STEM fields (only 15% of participants), limiting their participation in tech-driven ventures and decision-making roles. Programs like PMKVY and *Skill India* have improved digital and financial literacy but require customization to meet women's socio-economic and cultural contexts.

The following table and chart present a statistical assessment of the major barriers limiting innovation-led women entrepreneurship in India:

Table 1: Barriers to Innovation-Driven Women Entrepreneurship

Barrier	Percentage of Women Affected (%)
Poor Internet Access	71%
Low Awareness of Schemes	70%
Digital Literacy Deficits	65%
Cultural Resistance	61%
Language Limitations	55%
Underrepresentation in STEM	43%

Stand-Up India has emerged as a cornerstone of innovation-led financial inclusion. By December 2022, approximately 1.28 lakh of the total 1.59 lakh loans sanctioned under the scheme were granted to women

ISSN: 2583-6129
DOI: 10.55041/ISJEM04833

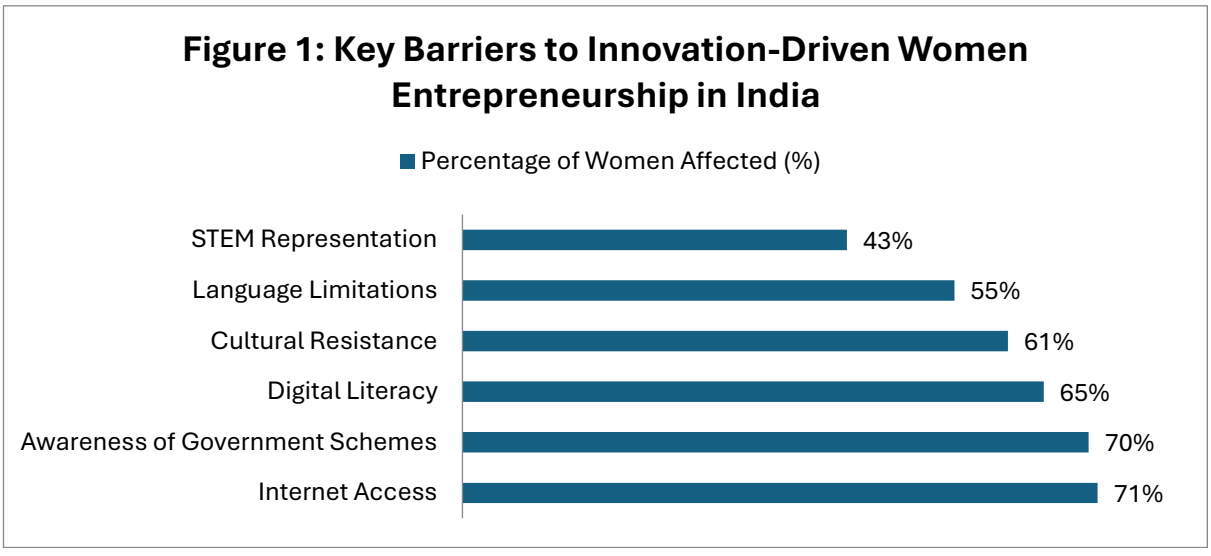
entrepreneurs, indicating 80% female share. By 2023, over 1.75 lakh loans totaling ₹32,161 crore were disbursed to women—comprising 84% of beneficiaries. By March 2025, the scheme cumulatively financed nearly 1.9 lakh women entrepreneurs with ₹44,000 crore in credit. These figures demonstrate substantially expanded financial access and systemic support for women-led enterprises. Mahila e-Haat, designed as India's first dedicated digital marketing platform for women-led micro-enterprises, aims to democratize market access. However, adoption remains weak due to persistent digital literacy gaps and absence of regional language interfaces, particularly among rural women with low internet penetration. Under Digital India, rural broadband expansion has improved infrastructure; yet as of 2023, only 29% of rural women reported consistent internet usage, revealing a stark gender digital divide. Meanwhile, Udyam Sakhi—launched to provide information and guidance on MSME schemes—benefited just 1,136 women across two states and one Union Territory in 2023 (580 in Maharashtra, 553 in Tamil Nadu, 3 in Andaman & Nicobar). This low uptake illustrates systemic limitations in outreach and localization.

The success of these innovation platforms is mediated by regional, cultural and educational disparities. Women in urban areas disproportionately benefit from schemes—owing to higher digital literacy and better infrastructure—while rural and non-Hindi-speaking women remain excluded due to language gaps, poor internet access and limited awareness of available schemes. Furthermore, women remain underrepresented in STEM and tech entrepreneurship (~15%)—curtailing their participation in innovation ecosystems . Despite national skill development efforts like PMKVY and Skill India, the structural uptake remains uneven without context-driven customization.

A quantitative synthesis of key barriers (Table 1) reveals that internet access (71%), scheme awareness (70%) and digital literacy (65%) are dominant constraints. Cultural resistance (61%), language limitations (55%) and underrepresentation in STEM (43%) further restrict inclusive reach. These insights highlight that innovation policies, while essential, need to be supplemented with local-language digital training, region-specific outreach and inclusive monitoring frameworks to ensure grassroots impact and sustained women's empowerment.

Table 1: Adoption & Barriers for Key Innovation Platforms (2022–2024)

Scheme/Platform	2022 Beneficiaries	2023–24 Statistics	Key Challenges
Stand-Up India	~1.28 lakh women (80%)	1.75 lakh women, ₹32,000–44,000 crore	Rural awareness, margin gaps
Mahila e-Haat	Launched; low-scale usage	Limited rural adoption; low usage data	Digital literacy, lack of language support
Digital India (rural)	–	Only 29% rural women access internet	Infrastructure and gender digital divide
Udyam Sakhi	Pilot state-level launch	1,136 women across states	Low outreach, lacks localization



While innovation-led platforms such as Stand-Up India and Digital India have successfully expanded access to credit and infrastructure, their transformative potential is constrained by digital exclusion, awareness gaps and cultural barriers—especially in rural, non-Hindi-speaking regions. Platforms like Mahila e-Haat and Udyam Sakhi remain underutilized due to inadequate localization and capacity-building. To ensure innovation serves as a true catalyst for gender equality**,** policy design must incorporate region-sensitive strategies, vernacular interfaces, digital and entrepreneurial training and gender-specific monitoring mechanisms that bridge the gap between policy intent and community reality.

The findings illustrate that internet connectivity and awareness of schemes are the most pressing constraints. These are followed by gaps in digital skills and persistent socio-cultural norms that marginalize women's economic roles. In particular, language limitations are a critical but often overlooked challenge; many platforms operate only in English or Hindi, excluding millions of women who speak regional languages. The intersection of these barriers creates a compounded disadvantage for women in rural and marginalized communities, highlighting the urgent need for inclusive, localized and intersectional policy interventions.

The study concludes that while innovation is a vital catalyst for promoting women entrepreneurship in India, its transformative potential remains constrained by uneven access and systemic inequities. To bridge these gaps, it recommends the development of region-specific innovation strategies that integrate vernacular support and grassroots outreach, the inclusion of digital and entrepreneurial training in women's vocational education, stronger collaboration with NGOs and local organizations for last-mile delivery and the establishment of robust monitoring frameworks with gender-disaggregated indicators. Only through such a multifaceted and inclusive approach can India unlock the full potential of innovation to drive gender equality and sustainable economic growth.

Conclusion

This study underscores the transformative potential of innovation and technology in fostering gender equality through women's entrepreneurship in India, highlighting the significant roles played by government schemes such as Stand-Up India, Mahila e-Haat, Udyam Sakhi and Digital India in expanding access to finance, markets, mentorship and digital infrastructure. These programs have created flexible, tech-enabled entrepreneurial pathways for women, particularly aligning with socio-cultural contexts; however, their impact is often limited by persistent structural challenges such as inadequate internet access (71%), low digital literacy (65%), limited scheme awareness, language barriers and cultural resistance. Urban women continue to benefit more than their rural counterparts due to better infrastructure and educational access, while women's underrepresentation in STEM and technology leadership restricts broader inclusion in innovation ecosystems. The findings suggest that innovation alone cannot deliver inclusive empowerment unless accompanied by region-specific strategies, vernacular content, digital education and community-based outreach. Moreover, robust, gender-disaggregated monitoring frameworks are essential to measure real-time impacts and refine interventions. Ultimately, the success of innovation-led women's empowerment in India hinges on inclusive, intersectional policy design and context-sensitive implementation that bridges the gap between top-down schemes and grassroots realities.

References

Ancillai, C., Bartoloni, S., Filipovic, J., & Temperini, V. (2025). The role of online communities in shaping the society 5.0 paradigm: A Social Capital Perspective. *European Journal of Innovation Management*. https://doi.org/10.1108/ejim-02-2024-0168

Banerjee, R. (2020). Empowering through entrepreneurship. *GENDER EQUALITY AND WOMEN EMPOWERMENT IN CONTEMPORARY INDIA*. https://doi.org/10.25215/9358092033.07

Gochhayat, N., & Rout, S. (2025). Business-government relationship for Sustainable Development of Women Entrepreneurship: An Analysis of the Indian Manufacturing Sector. *Discover Sustainability*, *6*(1). https://doi.org/10.1007/s43621-025-01130-y

Ikpeh, C., & Federico Awi, I. (2025). “I am because we are”: Ubuntu as a framework for social capital building among black women in the Academy. *Frontiers in Sociology*, *10*. https://doi.org/10.3389/fsoc.2025.1555236

Melkamu, G., Wondimu, H., Kassaw, E., & Dejene, K. (2025). The role of Idir as social capital in Ethiopia with a focus on contributions, challenges and changing dynamics in Addis Ababa. *Discover Sustainability*, *6*(1). https://doi.org/10.1007/s43621-025-01506-0

Sharma, S., & Behera, M. R. (2024). Women entrepreneurship: Driving economic empowerment in ATMANIRBHAR bharat. *International Journal for Research Publication and Seminar*, *15*(3), 443–461. https://doi.org/10.36676/jrps.v15.i3.1536

Surana, K., Singh, A., & Sagar, A. D. (2020). Strengthening science, technology, and Innovation-based incubators to help achieve Sustainable Development Goals: Lessons from India. *Technological Forecasting and Social Change*, *157*, 120057. https://doi.org/10.1016/j.techfore.2020.120057