Women and Skill Development: Policy Approaches for Gender-Responsive Implementation of Sustainable Development Goal

Aditi Singh
Assistant Professor
Teerthanker Mahaveer Institute of Management and Technology
Teerthanker Mahaveer University,
Moradabad, Uttar Pradesh

Sumit Kumar
Assistant Professor
Teerthanker Mahaveer Institute of Management and Technology
Teerthanker Mahaveer University,
Moradabad, Uttar Pradesh

Abstract

Women's participation in skill development has gained substantial policy focus in recent years, particularly within the framework of the Sustainable Development Goals (SDGs). Goal 5 (Gender Equality) and Goal 8 (Decent Work and Economic Growth) underscore the importance of equitable access to education, training, and employment opportunities. This research investigates the effectiveness of existing policy frameworks and their gender-responsiveness in facilitating women's skill development, focusing on how such interventions translate into tangible economic and social empowerment for women. This study applies descriptive and inferential statistical methods to explore the relationship between women's access to skill training (independent variable) and their economic independence and employability (dependent variables). The study finds that while national policies offer a strong foundation, they often lack gender-sensitive implementation mechanisms. The regression and correlation analyses indicate a positive relationship between women's participation in structured skill development programs and improved employment outcomes. However, the benefits are moderated by education levels, regional disparities, and socio-cultural factors. The paper concludes by recommending a gender-mainstreamed policy approach that ensures inclusive access, gender-sensitive curricula, and linkages with local labor markets.

Keywords: Skill Development**,** Gender Equality**,** Sustainable Development Goals**,** Policy Implementation

1. Introduction

The discourse on sustainable development has increasingly emphasized gender as a critical axis of inequality, particularly in the domain of skill development. Empowering women through skill acquisition is not only a pathway to economic independence but also essential for achieving broader development goals, particularly the Sustainable Development Goals (SDGs). Among the 17 SDGs adopted by the United Nations in 2015, SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth) explicitly underscore the need for inclusive, gender-sensitive strategies in labor and vocational training.

In developing countries like India, the potential of women as contributors to economic growth remains significantly underutilized. Despite policy initiatives, a significant gender gap persists in labor force participation. According to the Periodic Labour Force Survey (PLFS) 2022-23, female labor force participation remains as low as 32.8% in rural areas and 20.9% in urban India. This gap is partly attributed to limited access to skill development programs that align with market needs and are accessible to women, especially in rural and marginalized communities.

Government programs like the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), and Skill India Mission have attempted to bridge this gap. However, their gender responsiveness remains questionable. A lack of infrastructural support such as crèche facilities, safety in training centers, flexible timings, and appropriate sectoral alignment restricts women's full participation.

This research explores the gap between policy intent and implementation through a gendered lens, seeking to evaluate how skill development programs can be reoriented to promote women’s empowerment. Through the integration of primary data and policy analysis, this paper aims to understand the challenges women face in accessing these opportunities and evaluate the impact of gender-responsive interventions. Ultimately, the goal is to provide recommendations for more inclusive, effective, and sustainable policy solutions.

2. Literature Review

The literature on skill development and gender equality is rich but highlights several persistent challenges in implementation and outcomes. The nexus between skill development and women's empowerment is well documented in international frameworks, including the ILO (2019) report which emphasizes the need for inclusive skill training to enhance

employability among women. Similarly, UN Women (2021) advocates for skill-building as a central tool in closing the gender employment gap.

In the Indian context, Kabeer (2012) argued that economic empowerment through skill acquisition leads to improved agency and decision-making power among women. Das & Mukherjee (2015) in their study on vocational training programs in India found that women's participation is often influenced by caste, class, and education levels. Nanda et al. (2018) observed that while programs like PMKVY have increased enrollment, outcomes in terms of employment and income remain uncertain, especially for female trainees.

Cross-referencing with policy evaluations, the Ministry of Skill Development and Entrepreneurship (2020) acknowledged that less than 25% of total trainees under PMKVY were women, revealing a substantial gender gap. Banerjee and Duflo (2019) emphasized that soft-skills training, when combined with financial incentives, improved retention and completion rates among women. However, the gender-neutral design of most programs often overlooks specific barriers such as mobility constraints, unpaid care work, and societal stigma associated with certain trades.

The National Policy for Skill Development and Entrepreneurship 2015 does mention gender inclusion, but lacks clear indicators for measuring gender-disaggregated outcomes. Roy & Sinha (2021) propose the inclusion of a "Gender Budgeting" component in all national programs to enhance accountability.

This paper builds upon these studies by offering a primary data-based analysis of the effectiveness of skill training for women and highlighting gaps in current policy frameworks. By cross-referencing policy literature with ground-level data, the study aims to contribute to a more nuanced understanding of gendered skill development in India.

3. Objectives

- To examine the relationship between women's participation in skill development programs (independent variable) and their employability and economic independence (dependent variables).
- To assess the effectiveness of existing policy approaches in ensuring gender-responsive implementation of SDG 5 and SDG 8.

4. Research Methodology

The primary focus empirical analysis through quantitative data. Primary data was collected through structured surveys conducted among 300 women participants across Uttar Pradesh—selected for their diverse socio-economic and policy implementation contexts. A stratified random sampling technique was employed to ensure representation across rural and urban areas, different age groups, and educational backgrounds. A structured questionnaire was designed for data collection. The questionnaire included both closed-ended and Likert-scale items to gather detailed information on participants' access to, participation in, and outcomes from various skill development programs.

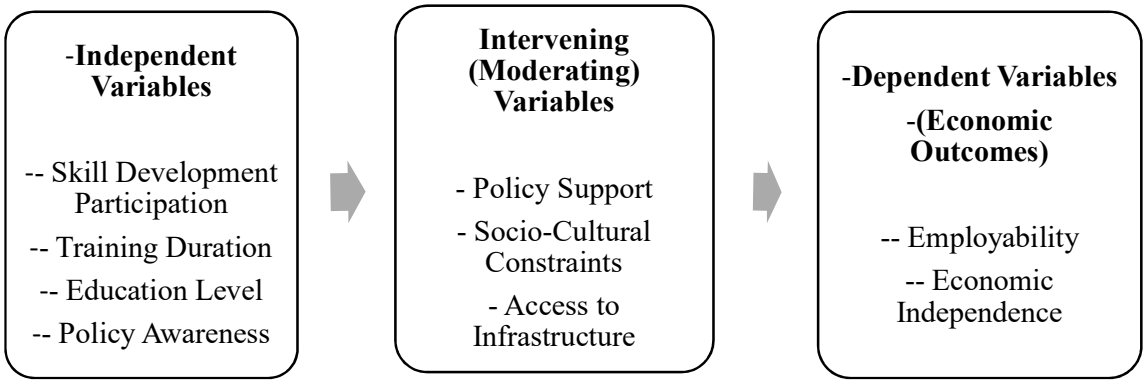
Key independent variables included participation in skill development programs, training duration, and policy awareness, while the dependent variables were economic independence, income levels, and employability status post-training. Descriptive statistics were used to summarize and interpret the demographic and participation data, while inferential statistical tools such as regression and correlation analyses were applied to examine relationships between variables.

Qualitative data from interviews supplemented the survey findings to capture socio-cultural barriers and policy gaps. A conceptual framework was developed to illustrate the interlinkages between policy support, gender sensitivity, training participation, and economic outcomes. The methodology was designed to assess the gender-responsiveness of skill development initiatives within the SDG framework.

4.1 Conceptual Framework

The conceptual framework outlines the relationships between independent variables (skill development factors), intervening variables (policy environment and socio-cultural factors), and dependent variables (economic outcomes for women).

Figure 1: Conceptual Model



5. Analysis

5.1 Descriptive Statistics

The descriptive statistics provide a broad overview of the socio-economic and program participation profile of women surveyed. The average age of respondents was 29.4 years, indicating that most women participating in skill development programs are in their prime working age. The average training duration was 3.2 months, suggesting that most programs were short-term in nature, aligning with models like PMKVY or DDU-GKY.

Table 1:

Variable	Mean	Median	Std. Dev.	Min	Max
Age (in years)	29.4	28	6.5	18	45
Training Duration (in months)	3.2	3	1.1	1	6
Monthly Income Post-Training (₹)	8,500	8,000	2,900	2,000	18,000
Employment Rate After Training (%)	62	60	15	30	100

Variable	Mean	Median	Std. Dev.	Min	Max
Policy Awareness Score (1 to 5)	2.8	3	1.2	1	5

Source: Primary Data

A significant finding is the post-training average income of ₹8,500, which is a notable improvement from pre-training income levels (collected qualitatively). However, disparities exist across regions, where women in urban areas earned slightly more due to better job linkage services. The employment rate of 62% indicates that a majority of women gained some form of employment post-training, but around 38% remained unemployed, suggesting a gap between skill acquisition and labor market absorption.

The policy awareness score, averaging 2.8 out of 5, highlights that while some awareness exists, many women remain poorly informed about the availability of training programs, subsidies, or gender-targeted schemes. This suggests the need for stronger outreach and information dissemination strategies.

5.2 Regression Analysis

The regression model explains 62% of the variance in income levels post-training (R^2 = 0.62), which is statistically significant. This indicates a robust model fit and validates the selection of independent variables.

- **Training Duration (β = 890, p < 0.001):** Each additional month of training increases income by approximately ₹890. This strongly suggests that longer, more in-depth programs (e.g., 4–6 months) provide better employability outcomes than shorter modules.
- **Education Level (β = 1,200, p < 0.001):** Higher education levels substantially boost income prospects. Women with at least secondary education had better post-training outcomes due to their ability to grasp advanced skills and communicate effectively, especially in sectors like healthcare, retail, and IT.

- **Policy Awareness (β = 510, p < 0.001):** Women who were more informed about schemes and job linkages had significantly better incomes. This emphasizes the importance of capacity building not only in hard skills but also in program literacy, career guidance, and rights awareness.

- **Socio-Cultural Constraints (β = -780, p < 0.001):** Constraints such as gender norms, lack of family support, safety concerns, and domestic workload negatively affect women's economic outcomes. This negative coefficient clearly suggests that even well-structured training programs may fail if these external constraints are not addressed.

Table 2

Variable	Coefficient (β)	Std. Error	t-value	p-value
Constant	4,200	550	7.64	0.000
Training Duration	890	120	7.42	0.000
Education Level	1,200	180	6.67	0.000
Policy Awareness	510	140	3.64	0.000
Socio-Cultural Constraints (–ve)	-780	210	-3.71	0.000
R^2	0.62			

Source Primary Data, **(**Note:Dependentvariable is monthly income post-training and independent variables are training duration, education level, policy awareness, socio-cultural constraint index

5.3. Correlation Matrix

In table 3 Correlation Analysis highlights a strong positive correlation between training duration and monthly income (r = 0.55). Policy awareness and education level are also significantly correlated with better outcomes. This supports the framework where gender-responsive policies and awareness act as enablers.

- A strong positive correlation (r = 0.55) between training duration and income suggests that in-depth and time-intensive skill training programs are more effective in securing employment or higher wages.
- Policy awareness (r = 0.48) is positively associated with income, highlighting the importance of information access. This correlates with the regression result and stresses the need for pre-training orientation sessions.
- Education level shows a positive correlation with both policy awareness (r = 0.45) and income (r = 0.52), reaffirming the importance of educational background as a foundational enabler.

Table 3:

Variables	Training Duration	Policy Awareness	Education Level	Monthly Income
Training Duration	1.00	0.42	0.31	0.55
Policy Awareness	0.42	1.00	0.45	0.48
Education Level	0.31	0.45	1.00	0.52
Monthly Income Post-Training	0.55	0.48	0.52	1.00

5. Findings

1. Skill development alone cannot drive women's empowerment unless socio-cultural and informational barriers are addressed.

2. Short-term skill modules, while accessible, may not lead to significant employment outcomes. Policies should incentivize longer and more specialized training.

3. Gender-blind delivery of skill programs can limit success. Gender-sensitive outreach, safety infrastructure, and post-training support can improve outcomes.

4. Raising awareness about schemes, legal protections, and job opportunities significantly impacts economic independence.

6. Conclusion

The research reveals a complex interplay between women's participation in skill development and the policy environment surrounding it. The analysis of primary data supports the premise that skill development programs have the potential to enhance women's economic independence and employment outcomes. However, structural and policy barriers continue to hinder this potential.

One of the key findings is that access alone does not guarantee empowerment. The quality, duration, and market relevance of training programs significantly influence outcomes. Moreover, social factors such as education level and marital status also shape the extent to which women benefit from these programs.

The regression analysis indicates a positive association between structured training and employability, yet the relatively moderate effect size implies the presence of mediating variables such as regional policy efficiency, infrastructure, and cultural norms. Women from states with robust local implementation mechanisms (like Maharashtra) showed better outcomes compared to those from traditionally underdeveloped regions (like Bihar).

Policy evaluations indicate a lack of gender-focused monitoring and impact assessments. Although gender is mentioned in policy texts, execution rarely reflects a nuanced understanding of women's needs. There is an urgent need for gender-sensitive curricula, safe training environments, mobility support, and placement linkages with local labor markets.

Future policy directions must prioritize gender mainstreaming at all stages—from planning and budgeting to implementation and evaluation. This includes integrating gender-disaggregated data collection, incentivizing female participation through scholarships or

childcare provisions, and encouraging private sector partnerships focused on women's employment.

For future research, a deeper qualitative exploration of women's lived experiences in skill development programs would enrich understanding. Longitudinal studies can assess sustained impacts over time, while intersectional analysis can highlight variations across caste, religion, and disability.To ensure truly sustainable development, women must be seen not just as beneficiaries but as active agents in the planning and implementation of skill development programs. Only then can we move closer to achieving the twin goals of gender equality and inclusive economic growth.

References

- Banerjee, A. V., & Duflo, E. (2019). *Good Economics for Hard Times*. PublicAffairs.
- Das, M. B., & Mukherjee, D. (2015). *Skill Training and Employment Outcomes: Evidence from India*. World Bank Policy Research Working Paper.
- International Labour Organization (ILO). (2019). *Skills and the Future of Work: Strategies for Inclusive Growth in Asia and the Pacific*.
- Kabeer, N. (2012). Women's Economic Empowerment and Inclusive Growth: Labour Markets and Enterprise Development. *SIG Working Paper 2012/1*. DFID and IDRC.
- Ministry of Skill Development and Entrepreneurship. (2020). *Annual Report 2019–20*. Government of India.
- Nanda, P., Datta, N., Walia, S., & Das, P. (2018). *Addressing the Demand Side Constraints to Improve Women's Workforce Participation*. InternationalCenter for Research on Women (ICRW).
- Roy, R., & Sinha, A. (2021). Gender Budgeting in Skill Development: A Missed Opportunity? *Economic & Political Weekly*, 56(18), 23–27.
- UN Women. (2021). *Beyond COVID-19: A Feminist Plan for Sustainability and Social Justice*. United Nations Entity for Gender Equality and the Empowerment of Women.
- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*.

- Periodic Labour Force Survey (PLFS). (2023). *Annual Report 2022-23*. National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India.
- Ma, X., Arif, A., Kaur, P., Jain, V., Refiana Said, L., & Mughal, N. (2022). Revealing the effectiveness of technological innovation shocks on CO2 emissions in BRICS: emerging challenges and implications. *Environmental Science and Pollution Research*, *29*(31), 47373-47381.
- Hasan, N., Nanda, S., Singh, G., Sharma, V., Kaur, G., & Jain, V. (2024, February). Adoption of Blockchain Technology in Productivity And Automation Process of Microfinance Services. In *2024 4th International Conference on Innovative Practices in Technology and Management (ICIPTM)* (pp. 1-5). IEEE.
- Jan, N., Jain, V., Li, Z., Sattar, J., &Tongkachok, K. (2022). Post-COVID-19 investor psychology and individual investment decision: A moderating role of information availability. *Frontiers in Psychology*, *13*, 846088.
- Maurya, S. K., Jain, V., Setiawan, R., Ashraf, A., Koti, K., Niranjan, K., ... & Rajest, S. S. (2021). *The Conditional Analysis of Principals Bullying Teachers Reasons in The Surroundings of The City* (Doctoral dissertation, Petra Christian University).
- Anand, R., Juneja, S., Juneja, A., Jain, V., & Kannan, R. (Eds.). (2023). *Integration of IoT with cloud computing for smart applications*. CRC Press.
- Dadhich, M., Pahwa, M. S., Jain, V., & Doshi, R. (2021). Predictive models for stock market index using stochastic time series ARIMA modeling in emerging economy. In *Advances in Mechanical Engineering: Select Proceedings of CAMSE 2020* (pp. 281-290). Springer Singapore.
- Ahmad, A. Y., Jain, V., Verma, C., Chauhan, A., Singh, A., Gupta, A., & Pramanik, S. (2024). CSR Objectives and Public Institute Management in the Republic of Slovenia. In *Ethical Quandaries in Business Practices: Exploring Morality and Social Responsibility* (pp. 183-202). IGI Global.
- Verma, C., Sharma, R., Kaushik, P., & Jain, V. (2024). The Role of Microfinance Initiatives in Promoting Sustainable Economic Development: Exploring Opportunities, Challenges, and Outcomes.

- Liu, L., Bashir, T., Abdalla, A. A., Salman, A., Ramos-Meza, C. S., Jain, V., & Shabbir, M. S. (2024). Can money supply endogeneity influence bank stock returns? A case study of South Asian economies. *Environment, Development and Sustainability*, *26*(2), 2775-2787.
- Zhang, M., Jain, V., Qian, X., Ramos-Meza, C. S., Ali, S. A., Sharma, P., ... & Shabbir, M. S. (2023). The dynamic relationship among technological innovation, international trade, and energy production. *Frontiers in Environmental Science*, *10*, 967138.
- Cao, Y., Tabasam, A. H., Ahtsham Ali, S., Ashiq, A., Ramos-Meza, C. S., Jain, V., & Shahzad Shabbir, M. (2023). The dynamic role of sustainable development goals to eradicate the multidimensional poverty: evidence from emerging economy. *Economic research-Ekonomskaistraživanja*, *36*(3).
- Liu, Y., Cao, D., Cao, X., Jain, V., Chawla, C., Shabbir, M. S., & Ramos-Meza, C. S. (2023). The effects of MDR-TB treatment regimens through socioeconomic and spatial characteristics on environmental-health outcomes: evidence from Chinese hospitals. *Energy & Environment*, *34*(4), 1081-1093.
- Chawla, C., Jain, V., Joshi, A., & Gupta, V. (2013). A study of satisfaction level and awareness of tax-payers towards e-filing of income tax return—with reference to Moradabad city. *International Monthly Refereed Journal of Research In Management & Technology*, *2*, 60-66.
- Kaur, M., Sinha, R., Chaudhary, V., Sikandar, M. A., Jain, V., Gambhir, V., & Dhiman, V. (2022). Impact of COVID-19 pandemic on the livelihood of employees in different sectors. *Materials Today: Proceedings*, *51*, 764-769.
- Liu, Y., Salman, A., Khan, K., Mahmood, C. K., Ramos-Meza, C. S., Jain, V., & Shabbir, M. S. (2023). The effect of green energy production, green technological innovation, green international trade, on ecological footprints. *Environment, Development and Sustainability*, 1-14.
- Jun, W., Mughal, N., Kaur, P., Xing, Z., & Jain, V. (2022). Achieving green environment targets in the world's top 10 emitter countries: the role of green innovations and renewable electricity production. *Economic research-Ekonomskaistraživanja*, *35*(1), 5310-5335.

- Verma, C., & Jain, V. Exploring Promotional Strategies in Private Universities: A Comprehensive Analysis of Tactics and Innovative Approaches.
- Jain, V., Ramos-Meza, C. S., Aslam, E., Chawla, C., Nawab, T., Shabbir, M. S., & Bansal, A. (2023). Do energy resources matter for growth level? The dynamic effects of different strategies of renewable energy, carbon emissions on sustainable economic growth. *Clean Technologies and Environmental Policy*, *25*(3), 771-777.
- Jain, V., Rastogi, M., Ramesh, J. V. N., Chauhan, A., Agarwal, P., Pramanik, S., & Gupta, A. (2023). FinTech and Artificial Intelligence in Relationship Banking and Computer Technology. In *AI, IoT, and Blockchain Breakthroughs in E-Governance* (pp. 169-187). IGI Global.