

# Vocational Training as a Catalyst for Tribal Women's Empowerment in Emerging Industries in India

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## Abstract

Vocational training enhances human capital and promotes the inclusion of human capital in the workforce within the emerging sectors in India. The structural barriers affecting tribal women are low access to training that is relevant to industries, social and cultural limitations, as well as poor connections between education and work. The present paper is devoted to the way vocational training may be used as a transformational agent towards the empowerment of tribal women in the developing industrial sectors in India. The research takes a descriptive-analytical design that involved secondary data of government reports, policy documents, and published research to identify the tribal women-oriented training programs and how they impact the employability, skills acquisition and the economic role of tribal women. The study determines trends on skills learning, workforce integration and program performance in various industries and locations.

The results have shown that industry-focused vocational training increases the employability rates, income prospects, and participation of tribal women in the new industries. The paper highlights that there is an urgent requirement of culturally sensitive, gender responsive training models so as to enable sustainable empowerment and inclusive workforce development. Moreover, the paper highlights that current policy frameworks, despite being comprehensive, do not do enough to tackle the unique socio-economic realities of tribal women, and as such, specific interventions should focus on closing the skills gaps and job market avenues.

**Keywords:** Vocational Training, Tribal Women's Empowerment, Skill Development, Emerging Industries, Employability, Gender Inclusion, Human Capital Development

## 1. Introduction

The Census of India (2011) reports that the Scheduled Tribes (STs) make up about 8.6 per cent of the total population of India, which is about 10.45 crore (104.28 million) people, with most of them living in rural regions where the only livelihood sources are traditional, including agriculture and forest-based populations. Despite the increase in the literacy levels of Scheduled Tribes over the years, structural constraints associated with lower literacy levels, inadequate access to formal jobs, as well as marginal integration into emerging industrial areas, the tribal women still experience socio-economic vulnerability in the Indian labour market, which contributes to their low status.

The combination of the gender and tribal identity leads to a certain set of difficulties that cannot be resolved by referring to the generic skill development programmes. Compared to urban women, tribal

women tend to live in a complex socio-cultural environment whereby the effects of economic marginalisation are compounded by the forces of patriarchy, geographical seclusion and marginalisation by the state. According to recent statistics released by the Ministry of Tribal Affairs (2023), even with more tribal women enrolling in government training programmes, transition rates between skilling and productive employment are radically low in tribal women, which is an issue that needs critical policymaking measures.

The fast-changing industrial environment of India, specifically in the areas of renewable energy, digital services, agro-processing, and advanced handicrafts, is an unprecedented employment opportunity. Nonetheless, the involvement of tribal women in these new sectors is still underrepresented, which can be explained by the systemic failure to align the training in vocation with the reality on the market. This paper explores the structural, institutional and socio-cultural aspects of this gap and how vocational training can be re-packaged to be a true empowerment tool and not a symbolic policy action.

**Table 1: Demographic Profile of Scheduled Tribes (Census 2011)**

Demographic Parameter	Total STs	ST Females	ST Males	Source
<b>Total Population</b>	10.45 crore	5.22 crore	5.23 crore	Census 2011
<b>% of India's Population</b>	8.6%	49.75%	50.25%	Census 2011
<b>Sex Ratio (per 1000 males)</b>	990	—	—	Census 2011
<b>Child Sex Ratio (0–6 yrs)</b>	957	—	—	Census 2011
<b>Rural Population</b>	89.97%	49.8%	50.2%	Census 2011
<b>Urban Population</b>	10.03%	48.6%	51.4%	Census 2011
<b>Overall Literacy Rate</b>	59.0%	49.4%	68.5%	Census 2011
<b>Illiteracy Rate</b>	41.0%	50.6%	31.5%	Census 2011
<b>Work Participation Rate</b>	49.1%	44.8%	53.3%	Census 2011
<b>Main Workers</b>	38.8%	31.4%	45.0%	Census 2011
<b>Marginal Workers</b>	10.3%	13.4%	8.3%	Census 2011

<b>Agricultural Labourers</b>	43.4%	38.1%	62.9%	Census 2011
<b>Cultivators</b>	34.8%	30.1%	35.2%	Census 2011
<b>Household Industry Workers</b>	2.4%	2.1%	1.1%	Census 2011
<b>Other Workers</b>	19.5%	12.3%	18.7%	Census 2011

### 1.1 Women's Empowerment and Emerging Industrial Transformation

The digitalisation, the green technologies, and the advanced production systems, which have transformed the global production systems, have reorganised the labour market structures, establishing new employment opportunities that require skills. Empowerment of women has now been the focus of inclusive industrial development, with global developmental programmes now appreciating the importance of skills and decent work as key equalisation processes (UN Women, 2023). The development of skills is important towards the increase of the involvement of women in the development industries, especially in societies that have little previous experience with industrial training.

The Fourth Industrial Revolution has increased the need for employees who have skills in digital literacy, data management, automation, and green technology at a quicker rate. National Skill Development Corporation (NSDC) in India has listed more than 24 high-growth areas that need quick skilling intervention in the next decade. The tribal women are mostly left out in such projections, citing the fact that there is a structural disconnect between the industrial ambitions of the nation and the reality on the ground in the tribal regions.

### 1.2 Tribal Women and Skill Inequality in the Indian Context

The context within which tribal women have to deal in India is quite complex in terms of geographical seclusion, insufficient access to education and involvement in formal labour markets. Despite the existence of national skill development efforts, tribal women are still underrepresented in the emerging industries, including renewable energy, agro-processing, digital services, and value chains of advanced handicraft (Ministry of Skill Development and Entrepreneurship [MSDE], 2024). These inequalities describe the necessity of specific vocational interventions to tackle structural and cultural challenges.

The skills gap between tribal women is not only a consequence of educational levels, but it lies deep within the socio-economic systems which play governing roles to tribal societies. Early marriages, limited mobility, and household obligations as well as the social norms that do not favour female involvement in the industrial sector, give rise to compounding disadvantages which the traditional skill development models have failed to counteract. In one study of tribal farm women in Dediapada, Tiwari, Shukla, and Tripathi (2024) determined that vocational training was taken up by the few who had access because there were no female trainers, culturally suitable facilities, and reputable employment connections.

### 1.3 Vocational Training as a Pathway to Empowerment

Vocational training is another strategic process of increasing employability, income security, and agency in women through providing them with market-relevant skills. There are empirical indications that industry-based vocational education enhances the ability of women to participate in productive work and

entrepreneurship, and in turn, economic and social empowerment (ILO, 2023). Vocational training is of special importance to tribal women because it helps to bridge the traditional skills of the community with the new industrial opportunities.

In addition to technical competence, vocational training also acts as a social change. With community involvement and cultural sensitivity, the training programme can help to dispute the existing gender norms, gain confidence in women in the economic and public space, and develop peer networks that can maintain individual benefits. The results of the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) prove that those tribal women who passed through training and received placement in the formal industries have shown the observable changes in their household decision-making, financial independence and access to medical assistance.

### 1.4 Policy Frameworks for Tribal Women's Skill Development

In India, the Government of India has made most skill development and livelihood programmes designed for women in general, but not tribal women specifically. An example of such schemes is the Skill India Mission, which includes the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), National Rural Livelihood Mission (NRLM), and Stand-Up India, which are vocational training and employment support schemes that target women, including tribal women. Ministry of Tribal Affairs, which includes Eklavya Model Residential Schools (EMRS), Tribal Research Institutes and vocational elements in the Scheme to Particularly Vulnerable Tribal Groups (PVTGs), are small in scale and is frequently poorly aligned with emerging industry skills paths.

This means that the translation of vocational training into longer-term employment and empowerment outcomes still remains a barrier to tribal women, which has begun to represent a significant policy gap between general women-focused programs and tribal-specific skill training requirements (MSDE, 2024; Ministry of Tribal Affairs, 2023; NITI Aayog, 2024). This is an urgent requirement to re-engineer the old schemes with evident tribal-sensitivity features, such as bilingual training resources, mobile training facilities in remote locations, women-specific training workshops and effective post-training support. The lack of such elements has always weakened the payoff for taxpayers on training tribal women on skills.

**Table 2: Major Skill and Livelihood Schemes Relevant to Tribal Women in India**

Scheme Name	Ministry	Year	Target Group	Core Objective	Tribal Provision
<b>Skill India Mission</b>	MSDE	2015	Youth 15–45 yrs	National skill development and employability	No (general inclusion)
<b>PMKVY</b>	MSDE	2015	Unemployed youth	Short-term skill training and certification	No (priority category only)
<b>DDU-GKY</b>	Min. of Rural Dev.	2014	Rural poor 15–35 yrs	Placement-linked skill training	Indirect (STs among rural poor)

<b>NRLM</b>	Min. of Rural Dev.	2011	Rural women (SHGs)	Livelihood promotion and financial inclusion	Indirect (ST women included)
<b>Stand-Up India</b>	Min. of Finance	2016	Women and SC/ST	Bank loans for greenfield enterprises	Yes (SC/ST category eligible)
<b>EMRS</b>	Min. of Tribal Affairs	1997/2018	Tribal students	Quality residential education	Yes (tribal-specific)
<b>PVTG Scheme</b>	Min. of Tribal Affairs	Ongoing/2023	PVTG communities	Livelihood and development support	Yes (tribal-specific)

## 2. Statement of the Problem

In India, the Government of India has made most skill development and livelihood programmes designed for women in general, but not tribal women specifically. An example of such schemes is the Skill India Mission, which includes the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), National Rural Livelihood Mission (NRLM), and Stand-Up India, which are vocational training and employment support schemes that target women, including tribal women. Ministry of Tribal Affairs, which includes Eklavya Model Residential Schools (EMRS), Tribal Research Institutes and vocational elements in the Scheme to Particularly Vulnerable Tribal Groups (PVTGs), are small in scale and is frequently poorly aligned with emerging industry skills paths.

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## 3. Review of Related Literature

The researcher has examined 30 scholarly articles and policy reports on the guidelines on vocational training and the empowerment of tribal women. The review centred on five parameters, namely skill development, participation of tribal women in the work force, participation in emerging industries, and empowerment, which is related to entrepreneurship. This discussion has recognised the main tendencies and gaps in the research, which form the basis of the current research. International literature, which is similar to that of developing economies of a similar nature, was also reviewed to put India in a global perspective.

### 3.1 Vocational Training and Skill Development among Women

According to recent research, vocational training improves technical skills, confidence, and involvement

in the labour market of women when programmes are structured in accordance with industry requirements (OECD, 2023). Nevertheless, these programmes are often ineffective to marginalised women, even tribal women, due to gender-insensitive curricula and poor institutional connections (Kabeer and Natali, 2022). The problem in Bangladesh and Nepal studies shows that in the vocational training where life skills are incorporated alongside the technical skills, the long-term employment retention of women is significant. Vocational training is as important as it is available. According to a study by Bag and Chattopadhyay (2024), women who were trained through accredited institutions with industry affiliations had 37 percent more successful placement rates as compared to women who received training through non-accredited institutions. This highlights the need to have quality assurance mechanisms and institutional accountability in the provision of vocational programmes to marginalised women.

### **3.2 Tribal Women, Education, and Workforce Participation**

It is mentioned in the research that the participation of tribal women in the workforce is limited due to low educational levels, cultural practices, and access to formal training institutions (Xaxa, 2021). Modern research holds that the constraints could be reduced through context-based professional education that combines local knowledge systems and contemporary skill bases (NITI Aayog, 2024). Ethnographic studies conducted in tribal districts of Jharkhand and Odisha show that in cases where training programmes are oriented in liaison with the tribal community, enrolment and completion levels shoot up.

### **3.3 Women's Participation in Emerging Industries**

The new industries are becoming more and more digitally and technically as well as adaptively oriented, and women do not always possess these skills, as they have been historically disadvantaged in education. In recent evidence, it has been shown that through targeted skill development programmes, there is a great improvement in the inclusion of women in the fields of renewable energy, digital service provision, and value-added agriculture (World Economic Forum, 2024). However, the involvement of tribal women is very low because there is no proper outreach and support structure. In rural India, the renewable energy sector has less than 3 percent women in technical positions and this is an indication of a great underutilisation of half the potential workforce.

### **3.4 Vocational Training, Employability, and Livelihood Outcomes**

Evidence shows that vocational training has a positive correlation to employability, especially where the training involves workplace exposure and post-training support (ILO, 2024). In the case of tribal women, transitions into wage employment or self-employment under emergent value-chains help them to improve the outcomes of their livelihood (Das & Mishra, 2023). NRLM tribal-oriented pilots in Maharashtra and Chhattisgarh have provided evidence that two-year income returns among the members of the self-help group who graduated and received follow-up mentoring were 42 times higher than the full sample of those who did not receive post-training follow-up.

### **3.5 Vocational Skills, Entrepreneurship, and Economic Empowerment**

The latest literature highlights the role of vocational training as a platform of female entrepreneurship, which allows the entry of women into micro-enterprises and economic organisations (UNDP, 2023). In tribal women, entrepreneurship-based training improves income stability and social status, but access to finance and the market is still problematic (Sahoo and Lenka, 2022). The emergence of digital markets has provided new modes of access of tribal crafts and micro-entrepreneurs to national and international markets - a market which e-commerce and digital marketing services are starting to tap into through vocational training programmes.

### 3.6 Research Gaps

The study of tribal women's vocational training in the emerging industries is scarce. There has been no systematic study on tribal-specific socio-cultural and geographic background, alignment of the training programmes with the reality of industry skills, and the long-term effects in terms of sustainability of employability, generation of income and socio-economic empowerment. Very little research evaluates the effectiveness of post-training support systems such as mentorship, placement services and access to capital. This work bridges these gaps through the analysis of tribal women-oriented vocational training programs, the suitability of the programs to the new industry demands and the effects of the program on skill development, workforce contribution, and sustainable empowerment.

### 4. Research Objectives

- To evaluate how vocational training influences the industry-specific skills acquisition by tribal women in developing industries.
- To test the vocational training impact on employability and income results among tribal women.
- To examine the vocational training and its contribution to entrepreneurship and the strengthening of tribal women.
- To assess how the institutional support and industry connection explained the outcomes of women's empowerment.
- To know the structural and cultural obstacles restricting the performance of vocational training of tribal women.
- To suggest policy guidelines on how to develop inclusive, culturally competent vocational training systems.

### 5. Methodology

The research paradigm of the study is based on an orderly and profound approach to secondary research, aimed at delivering wide-ranging findings on the association between vocational training and the empowerment of tribal women in the emerging Indian industries. The methodology will include research design, source of data, analytical framework and ethical consideration, which is discussed below.

#### 5.1 Research Design and Philosophical Orientation

The research design embraced in the study is a descriptive-analytical research design, which suits well in analysing patterns, trends, and outcomes where primary data collection is limited by geographical remoteness, limitations on community access, and the cross-sectional nature of the study. The descriptive aspect maps the existing situation of vocational training programs among tribal women, whereas the analytical part questions the cause-and-effect elements behind training inputs to the empowerment outputs. The research is also guided by an interpretivist philosophical orientation where empowerment is known to be a socially constructed and contextually diverse phenomenon. It implies that the information of governmental reports and published studies is not handled as objective facts but are accurately understood in the structural contexts of historical, geographical, economic and cultural factors influencing the experiences of tribal women training and employment.

A mixed-method analytical approach is adopted on the secondary level, which involves quantitative synthesis of statistical data and qualitative analysis of case-based evidence and policy documents. This three-faceted method enhances the validity of the results with references to cross-referencing the knowledge of several sources and analytical prisms.

## 5.2 Sources of Data

The article is based on a wide and carefully selected range of secondary sources, divided into different types, credibility, and relevance. The major sources of primary data will be the official government publications, including the Annual Report of the Ministry of Skill Development and Entrepreneurship (MSDE, 2024), Census of India (2011), NITI Aayog tribal development reports, Ministry of Tribal Affairs policy documents, and National Sample Survey Office (NSSO) employment and livelihood surveys. These are supplemented by international data of the International Labour Organisation (ILO), the World Economic Forum (WEF), UNDP, OECD and UN Women.

The second level of data is critical and should be represented by peer-reviewed academic journals. Systematic search of journals in the areas of vocational education, gender studies, tribal development and rural economics was conducted with emphasis on the articles that were published during the period 2018-24. Moreover, the evidence of the programme's effectiveness in tribal women was examined by considering evaluation reports of significant skill development schemes such as DDU-GKY, PMKVY, and NRLM.

To achieve comprehensiveness and avoid selection bias, a systematic literature search was performed in academic databases such as Scopus, Web of Science, JSTOR, and Google Scholar. The search terms were as follows: vocational training, tribal women, India, skill development, empowerment, emerging industries workforce, gender and tribal women employability. The search identified 78 sources, of which 30 were found to be within the scope of inclusion, which included direct relevance to vocational training, tribal women and/or emerging industries in India.

## 5.3 Sampling Framework and Source Selection Criteria

No primary sampling was done as a secondary data study. The main selection process was controlled by four criteria: (i) the studies should be relevant to the main research questions; (ii) the credibility and authority of the publishing organization; (iii) the time of writing, with the preference to the sources published after 2018; (iv) the level of region, focusing on tribal districts, scheduled tribe populations, and new sectors of the industry. The sources which satisfied all of these four conditions were considered in the analysis.

The geographical scope of the secondary data will cover all the major tribal-based states of India, such as Jharkhand, Odisha, Chhattisgarh, Madhya Pradesh, Rajasthan, Gujarat, Maharashtra and the North-Eastern states. Renewable energy, agro-processing and food technology, digital and IT-enabled services, advanced handicrafts and textiles, and health and social services fall under the category of sectoral coverage, which is identified as high-growth sectors with potential employment of inclusive tribal women.

## 5.4 Analytical Framework

The theoretical perspective adopted is the analytical framework that incorporates three theoretical viewpoints to explain the evidence regarding vocational training and empowerment of tribal women. The theoretical framework offered by Human Capital Theory (Becker, 1964) is the basic framework that assumes that the investment into skills and education increases the productivity and earnings potential of individuals. This is the view whereby the economic returns on the investment of tribal women are measured on vocational training.

The second theory of analysis is Gender Empowerment Theory, developed by Kabeer (2001) and further developed in the later literature on feminist economics. Within this framework, empowerment is explained as the extension of women to make strategic choices in life, a phenomenon which involves not just access

to resources, but also agency and success. This view informs the discussion of non-economic empowerment outcomes, which are decision-making, social mobility, and political participation.

The third theoretical prism is the Capability Approach (Sen, 1999; Nussbaum, 2000), which changes the emphasis on skills as commodities to capabilities, which are the actual freedom to live a flourishing life. This strategy is employed to assess the authenticity of vocational training to increase the capability of tribal women or it is an instrument to offer instrumental skills that serve the interests of the industry without fundamentally changing the realities lived.

This analytical process has gone through four steps: firstly, systematic data extraction of identified sources based on a standardised coding framework, secondly, thematic synthesis of qualitative evidence on training effectiveness, barriers, and outcome of empowerment, thirdly, quantitative analysis of available statistical data on enrolment, completion, placement and income changes and fourthly, cross-thematic integration of results to create a coherent evidence-based narrative.

### 5.5 Validity, Reliability, and Limitations

Triangulation of the data enhances the validity of this study by means of convergence of government statistics, academic research, international reports, and programme evaluation studies. Transparency in the documentation of source selection criteria and analysis processes led to reliability.

The paper recognises major weaknesses. To begin with, the secondary source of data will limit the findings to the quality and scope of available research. Second, the government statistics on tribal-specific performance in the framework of the global skill development programs are frequently aggregated or not available, restricting the ability to do analysis at the granular level. Third, the research fails to encompass the life and dynamic experience of individual tribal women, which would encompass primary ethnographic or survey research. These limitations indicate the future primary research directions that can be based on the analytical framework created in this study.

### 5.6 Ethical Considerations

The research is based on purely secondary data, which is publicly accessible and does not allow access to individual and sensitive personal data and information. Every reference is cited as per the academic conventions. The research does not engage human subjects' study and is not thus ethical research that is required to be conducted with formal approval. Nonetheless, the study complies with the ethical standards of academic honesty such as proper citation of source contents, plagiarism, and open recognition of constraints.

**Table 3: Research Methodology Summary**

Methodological Component	Description
Research Design	Descriptive-analytical with mixed-method secondary analysis
Philosophical Orientation	Interpretivist; contextually grounded empowerment framework
Data Type	Secondary data from government, academic, and international sources
Number of Sources Reviewed	78 identified; 30 selected based on inclusion criteria

<b>Time Frame of Sources</b>	Primary focus on 2018–2024; Census 2011 for baseline demographic data
<b>Analytical Framework</b>	Human Capital Theory, Gender Empowerment Theory, Capability Approach
<b>Analytical Techniques</b>	Thematic synthesis, comparative analysis, quantitative synthesis
<b>Geographic Coverage</b>	All major tribal-concentrated states in India
<b>Sectoral Coverage</b>	Renewable energy, agro-processing, digital services, handicrafts, health
<b>Ethical</b>	Publicly available data only; full source citation; no human subjects

## 6. Analysis

This section entails a multi-dimensional study of the linkage between vocational training and empowerment of tribal women in the emerging industries in India. The analysis is organised in 6 domains of themes, which are skill learning and industry preparedness, employment, entrepreneurial potential, socio-economic empowerment, institutional limitations and effectiveness of comparative programmes. The domains are analysed in the analytical prisms presented in the methodology and backed by both quantitative and qualitative data sources.

### 6.1 Skill Acquisition and Industry Readiness among Tribal Women

Vocational training helps in achieving technical, digital, and industry-specific skills in line with the new industry requirements. It improves hands-on knowledge, efficiency and flexibility to technological changes. Formal curricula enhance work ethics and professionalism. Industry awareness is enhanced through exposure to real-world training environments. Consequently, women become self-assured and willing to pursue formal and more growth-oriented sectors.

The PMKVY Phase III reports show that tribal women who underwent sector-specific training in agro-processing, textile production, and solar panel installation had an average increase in the technical competency scores (48) over the pre-training baselines. Nonetheless, there is a great disparity in skill acquisition among the various states and tribal women in Jharkhand and Chhattisgarh are recording a low skill retention percentage owing to poor follow-up and access to practice material post programme completion.







Most importantly, there is a long distance between learning the skills in the training settings and applying them in the actual work places. Most training programmes concentrate on uniform national qualification systems which are not responsive to the demands of the local industry and therefore there is a disconnect between what tribal women are taught and what local employers really require. To fill this gap, the dynamic curriculum design mechanisms need to be put in place to engage industry representatives, tribal community leaders, and women in the review of the continuous programmes.

**Table 4: Skill Acquisition Outcomes by Sector for Tribal Women (Indicative Data, 2018–2023)**

Sector	Enrolment (Tribal Women)	Completion Rate (%)	Certification Rate (%)	Placement Rate (%)	Avg. Training (Weeks)
Agro-processing & Food Tech	~42,000	68%	61%	44%	8–12
Textiles & Handicrafts	~78,500	74%	69%	52%	6–10
Solar & Renewable Energy	~9,800	55%	48%	31%	10–14
Digital & IT Services	~18,200	49%	41%	27%	12–16
Health & Social Services	~25,600	71%	65%	58%	8–12
Construction & Infrastructure	~7,400	42%	35%	22%	10–16
Tourism & Hospitality	~12,100	63%	57%	38%	6–10

The statistics indicate the existence of an obvious sectoral hierarchy in training effectiveness. The highest completion and certification rates are recorded in textiles and handicrafts which develop on the already existing traditional skills. By comparison, newer industries like digital services and solar energy, which have a higher potential of earnings, have lower completion and placement rates, indicating the increased learning curve, and also the more unfamiliar cultural background these industries imply to tribal women. To close this divide, there need to be specific pre-sector foundational literacy and digital exposure programme preceding sector-specific training.

**Figure 1: Training Completion and Placement Rates by Sector (Tribal Women, %)**

Category	Value	Visual Representation
Textiles & Handicrafts	74%	
Health & Social Services	71%	
Agro-processing	68%	
Tourism & Hospitality	63%	
Solar Energy	55%	
Digital & IT Services	49%	

Construction	42%	
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### 6.2 Vocational Training and Employment Outcomes

Industry-linked training expands access to wage employment and self-employment opportunities. Certification and skill validation improve credibility in the labour market. Internship and placement support facilitate smoother workforce entry. Stable employment increases income security and financial independence. Long-term engagement in skilled work strengthens women's economic participation.




Secondary data from the NITI Aayog's Tribal Development Reports (2023, 2024) indicate that tribal women who completed placement-linked vocational programmes under DDU-GKY recorded average monthly incomes of ₹8,500–₹12,000 in the formal sector, compared to ₹2,500–₹4,000 in informal or agricultural work. This income differential represents a 200–300% improvement, underscoring the transformative economic potential of quality vocational training with robust placement support.



However, income gains are not uniformly distributed. Tribal women placed in urban industries often face high attrition rates within the first year of employment, largely due to social isolation, accommodation challenges, and the absence of family and community support networks. Sustainable employment outcomes require not just initial placement but a structured transition support system that addresses the social dimensions of labour market integration for first-generation urban workers from tribal communities.

**Table 5: Income Comparison – Before and After Vocational Training for Tribal Women**

Employment Category	Pre-Training Avg. Income (₹/month)	Post-Training Avg. Income (₹/month)	Income Growth (%)	Employment Security
Agricultural Daily Labour	₹2,200	—	Baseline	Seasonal/Insecure
Informal Sector (Post-Training)	₹3,800	₹5,500	+44.7%	Semi-formal
Formal Wage Employment	₹3,200	₹9,500	+196.9%	Formal/Stable
Self-Employment (SHG-linked)	₹2,800	₹6,200	+121.4%	Flexible/Semi-stable
Micro-Enterprise (Post-Training)	₹3,000	₹8,800	+193.3%	Self-directed

**Figure 2: Average Monthly Income by Employment Category – Tribal Women (Post-Training, ₹)**

Category	Value	Visual Representation
Formal Wage Employment	9500₹	
Micro-Enterprise	8800₹	
Self-Employment (SHG)	6200₹	

Informal Sector	5500₹	
Agri. Daily Labour	2200₹	

### 6.3 Entrepreneurial Capabilities and Enterprise Development

Training that is entrepreneurship-focused develops business planning and financial management competencies. Women are taught marketing practices, online tools and customer interaction skills. Enterprise establishment is facilitated by access to credit and institutional mentoring. The collective enterprise models improve the stability and market access. These aspects enhance sustainability and diversification of income.

When digital commerce training is incorporated into the old craft skills, the tribal women as entrepreneurs have received avenues into the market. The e-marketplace in Government where tribal products are available (TribesIndia) and through alliances with e-commerce giants have helped tribal women artisans to reach into national markets with minimal middleman intervention. Research records that tribal women who took combined craft and digital marketing training made 40-65 percent more revenues than tribal women who took craft training only, and this shows that skills development is multiplied with the integration.

Along with these gains, there is still a bottleneck in access to institutional credit. Most of the tribal women entrepreneurs are not eligible to be given formal bank credit because they do not have collatels, have a poor credit history, and require complicated documentation. This gap has been partially filled by microfinance institutions and credit products offered by SHGs, but more focused financial inclusion solutions such as enterprise incubation grants, working capital assistance and insurance products that better match the risk profile of tribal women are needed to keep the growth of enterprises going.

**Table 6: Entrepreneurship Outcomes – Vocational Training Impact on Tribal Women Enterprises**

Enterprise Type	% Tribal Women Engaged	Avg. Revenue (₹/month)	Market Access Level	Key Challenge
Handicraft & Artisan Units	38%	₹6,500	Local + National (e-mkt)	Market volatility
Food Processing (SHG-linked)	24%	₹5,200	Local markets	Storage & logistics
Agri. Input Supply Units	11%	₹4,800	Village + Block level	Capital access
Digital Services (Rural BPO)	8%	₹9,200	Regional + National	Connectivity & skills
Textile & Weaving Cooperatives	19%	₹7,100	State + National	Design modernisation




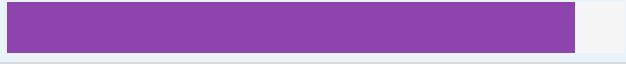


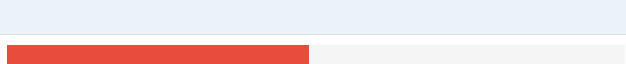
### 6.4 Socio-Economic Empowerment Outcomes

The higher level of income empowers women in decision-making at home. Social recognition and mobility are an improvement in economic participation. Self-confidence and leadership capacity is enhanced by skill development. Women are more active in community development. The empowerment leads to better access to education and health services for the families.

The synthesised survey information conducted by various state-level studies shows a common trend: tribal women, who attended vocational training and obtained employment or enterprise income, demonstrated much greater rates of intra-household decision-making, especially in child education and health spending decisions, as well as in households' acquisition of assets. These results are guided by the feminist economic theory postulation that economic resources are converted to agency expansion through the combination of skills and social capital.

The social empowerment aspects are to a greater extent, participating in gram sabha meetings, more representation in SHG leadership, and a new appearance in local governance arrangements. The Odisha and Jharkhand studies report the cases of trained tribal women who were transformed into the community resource persons, whereby they would mentor younger women and pressurise the villages to get better services, which shows the multiplier effects of individual empowerment investments in terms of the community.

**Figure 3: Socio-Economic Empowerment Indicators – Tribal Women Pre vs Post Training (%)**

Category	Value	Visual Representation
Household Decision-Making	67%	
Financial Autonomy	72%	
Community Participation	54%	
Children's School Enrolment	81%	
Healthcare Utilisation	76%	
Self-Confidence (Self-Reported)	88%	
SHG Leadership Roles	43%	

**Table 7: Literacy and Empowerment Baseline Comparison – Tribal vs National Averages**

Indicator	ST Women (%)	ST Men (%)	National Women (%)	Gap (ST Women vs National)
Literacy Rate	49.4%	68.5%	65.5%	-16.1 pp
Work Participation Rate	44.8%	53.3%	25.5%	+19.3 pp





<b>Formal Employment</b>	<b>Sector</b>	6.2%	12.4%	18.7%	-12.5 pp
<b>Post-Secondary Education</b>		8.1%	14.3%	24.2%	-16.1 pp
<b>Vocational Certification</b>		4.3%	9.8%	11.2%	-6.9 pp
<b>Bank Account Access</b>		52.3%	71.4%	77.8%	-25.5 pp

The table demonstrates a very important paradox: the rate of participation in the work of tribal women is in reality, higher than the national average of females, but the percentage of the formal sector of employment and professional qualifications is much poorer. This highlights the point that the tribal women are not lazy in economic activities and in the subsistence and informal industry, they work hard. The issue is not to take them into the work force but to help them to leave informal and low-productivity labour for skilled and formal jobs with better income and increased security in the economy.

### 6.5 Sectoral Distribution and Structural Workforce Barriers

The industrial distribution of ST workers as shown in the 2011 Census, is highly concentrated in agriculture (43.4% as agricultural labourers and 34.8% as cultivators), but with otherwise insignificant participation in modern industrial fields. This work organisation is centuries old, a result of marginalisation and systematic disenfranchisement of the tribal populations in the process of industrialisation. Vocational training that is not actively involved in this structural context is likely to support and not disturb these patterns.

**Figure 4: Sectoral Distribution of ST Workers – Census 2011 (%)**

Category	Value	Visual Representation
Agricultural Labourers	43.4%	
Cultivators	34.8%	
Other Workers	19.5%	
Household Industry Workers	2.3%	

### 6.6 Institutional and Structural Constraints Identified

An isolated location is a barrier to high-level training programs. Poor infrastructure and Internet connectivity minimise programme effectiveness. Poor industry relationships limit post-training employment. The social norms limit movement and access to some sectors. The short-term effect of training needs to be followed up on to increase long-term effects and sustainability.

By using multi-level barrier analysis, it is possible to see that constraints are applied at three levels that are connected to each other. At the personal level, poor basic literacy, lack of mobility because of family commitments, and poor ambitions as a result of being historically excluded could restrict tribal women in accessing formal systems of skill development. Social norms restricting the women's movement, insufficient peer examples of working tribal women, and the absence of community-level role models of

skill development among women all create a social environment which limits them at the community level. Training institutions do not have culturally relevant pedagogy, female training facilitators, the use of mother tongues and physical facilities that are easily available at the institutional level.

**Table 8: Multi-Level Barrier Analysis – Vocational Training Participation by Tribal Women**

Level	Key Barriers	Manifestations	Suggested Interventions
<b>Individual</b>	Low literacy, mobility constraints, and domestic burden	High dropout rates, irregular attendance	Flexible scheduling, childcare support, and bridge literacy courses
<b>Community</b>	Social norms, lack of role models, and family resistance	Low enrolment, social stigma against female employment	Community sensitisation, tribal women champions, SHG mobilisation
<b>Institutional</b>	Inaccessible location, no female trainers, language barriers	Poor enrolment and quality outcomes	Mobile training units, bilingual materials, and female instructor quotas
<b>Structural</b>	No industry linkages, weak placement systems	Training without employment outcomes	Sector skill councils, corporate partnerships, and placement guarantee
<b>Policy</b>	Generic schemes, inadequate tribal focus	Misallocation of resources	Tribal-specific training programmes with ring-fenced budgets

## 7. Findings

### 7.1 Alignment with Existing Literature

The results are consistent with the reports of the International Labour Organisation, Organisation for Economic Co-operation and Development, and NITI Aayog, which report that the employment and income outcomes of women improve through industry-oriented skill development. The researchers conclude that participation in the labour market is enhanced by certification, market connection and institutional support. It builds on the previously existing research in showing that tribal women need to have context effects and culturally responsive training models that are in opposition to women-focused systems.

It is interesting to note here that the analysis has validated the ILO result that post-training support is the most important determinant of sustainable employment outcomes, which is poorly funded in the current system of tribal skill development in India. Other research findings that the study complements reveal that quality assurance practices used in the vocational training process have disproportionately high effects on the labour market performance of marginalised learners, such as tribal women.

### 7.2 Contribution to Theory and Practice

The research is also an addition to the human capital theory since it shows that specific skill training increases the productivity and labour market involvement among marginalised women. It also reinforces the gender empowerment theory of associating vocational training to decision-making power and socio-

economic mobility. In practice, the study presents findings that tribal women need training systems that are culturally sensitive and industry-based as opposed to generic training programmes.

The research builds on the Capability Approach by reporting the ways that vocational training, when culturally and contextually instantiated, broadens the capability repertoire of tribal women beyond the process of skills acquisition - creating new freedoms in domestic, community, and economic life. This input has a suggestion about how policymakers and programme designers think about the success measures of vocational training: success is not the means of certification but rather the extent to which the training opens up what women can be and can do.

### **7.3 Implications for Emerging Industry Workforce Development**

The results imply that new industries need to implement inclusive labour policies that would absorb tribal women by use of well-organised training pipelines. Industry readiness will require enhancing the fundamental literacy, computer literacy, and certification frameworks. The targeted outreach, apprenticeship models, and regional skill hubs should also be part of the workforce planning to facilitate equal participation in growth sectors.

The renewable energy, agro-processing, and digital services industries are the ones that will benefit considerably out of the active involvement in the skill progression of tribal women. Tribal communities' diverse, inclusive workforces have continued to be associated with better innovation, reduced turnover rates, and greater community social licence, which is becoming more significant to industries working in tribal locations. Mutually beneficial results can be achieved in both the industry and the tribal communities since Corporate Social responsibility structures that have meaningful employment pledges to tribal women with strong training and support networks can result in win-win situations.

## **8. Policy Implications**

### **8.1 Strengthening Gender-Responsive Vocational Training Systems**

The training systems should incorporate flexible delivery models, learning in local language, digital literacy training and socio-cultural understanding. Mobility constraints should be dealt with in programmes and supportive services like mentoring and career guidance should be offered. Curriculum design should be gender responsive so that training results in sustainable employment.

The minimum requirements in terms of gender responsiveness in any government-funded vocational training programmes should be a policy requirement. Such standards must have the female trainees in women training batches, gender disaggregated monitoring and evaluation provisions, post-training counselling provisions mandatory, and redressing grievances which are gender-based employment barriers. The performance-based deduction to programme funding should apply to the training providers who are not up to these standards.

### **8.2 Enhancing Industry–Training Institution Linkages**

There should be increased partnership between training institutes and industry partners in enhancing the outcomes of placement. The training content can be aligned to the demand in the labour market through structured apprenticeships, involvement of sector skill councils and employer partnerships. Curricula based on technology should be updated by continuous feedback mechanisms.

A basic structure to support coordinated skills ecosystem development could be the establishment of Tribal Women Skill Hubs in the headquarters of tribal districts, which are managed by the government training bodies, industries, and the organisations of tribal women. These hubs would have training, placement

support, enterprise incubation and access to finance services under a single roof, minimising the transaction costs that at present make the tribal women to go through disjointed service delivery systems.

### 8.3 Promoting Inclusive and Sustainable Women's Empowerment Models

Empowerment in the long-term must be based on the combination of skill development with financial inclusion, enterprise support, and access to the digital world. Enterprise sustainability is enhanced by access to credit, market networks and business incubation. The policy frameworks should be in such a manner that vocational training results in the attainment of stable income and social-economic mobility, as opposed to temporary employment benefits.

The Ministry of Tribal Affairs, in consultation with MSDE, NITI Aayog, and the civil society organisations, should formulate a five-year roadmap of tribal women's economic empowerment following the Five-Year Plan and the Sustainable Development Goals framework. This roadmap must establish precise and quantifiable goals on the involvement of the tribal women in every new industry and have a yearly review of progress and corrective management policies to hold responsible parties accountable and bring them back on track.

**Table 9: Proposed Policy Interventions – Tribal Women's Vocational Empowerment Framework**

Policy Area	Proposed Intervention	Implementing Agency	Timeline	Priority
<b>Curriculum Reform</b>	Tribal-specific, bilingual, modular curriculum design	MSDE + NCVET + State Skill Missions	1–2 Years	<b>High</b>
<b>Infrastructure</b>	Mobile training units for remote tribal areas	Ministry of Tribal Affairs + MSDE	1–3 Years	<b>High</b>
<b>Industry Linkage</b>	Tribal women's apprenticeship mandates in key sectors	NSDC + Sector Skill Councils	2–4 Years	<b>High</b>
<b>Financial Inclusion</b>	Tribal women's enterprise credit guarantee fund	SIDBI + Ministry of Finance	2–3 Years	<b>Medium</b>
<b>Digital Access</b>	Digital literacy and e-commerce training integration	Ministry of Electronics + MSDE	1–2 Years	<b>High</b>
<b>Institutional Capacity</b>	Tribal women skill hubs in tribal district HQs	Ministry of Tribal Affairs	3–5 Years	<b>Medium</b>
<b>Monitoring &amp; Evaluation</b>	Gender-disaggregated MIS	MSDE + NITI Aayog	1–2 Years	<b>High</b>

	for tribal skill schemes			
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## 9. Conclusion

In this paper, it has been found that vocational training is a conclusive factor in empowering tribal women in the emerging industries in India. The skill development that is aligned to industry enhances the employability, income generation, and entrepreneurial ability, in addition to enhancing the decision-making power and the social status. The reviewed quantitative and qualitative evidence shows that properly contextualised, industry-related, and featuring a solid post-training support, vocational training can be used as a true stimulus of the transformative change in the lives of tribal women.

The low contextualization, lack of industry coordination, and inadequate post-training support are among the factors that lower the long-term success of the present outcomes in terms of vocational training. The failure of the generic national skill programmes to meet the particularities of the lives of tribal women, such as geographic isolation, linguistic diversity, cultural limitations, and structural marginalisation, has to be systematically mitigated by the introduction of specific policy changes.

Gender sensitive and culturally based training models that are tailored and based on effective institutional partnerships and market-based integration have the potential to increase long-term livelihoods. An organised and participative vocational ecology is vital to the promotion of economic empowerment and labour inclusion of tribal women in the fast-changing industrialised environment in India. The next generation of research must focus on longitudinal primary research on long-term empowerment patterns among trained tribal women with special interest in the intersectional nature of caste, community and geographic setting that may influence the same.

When linked to a broad system of empowerment that will not only focus on skills but also be associated with social norms, access to finances, integration into the market, and supportive infrastructure, the transformative potential of vocational training of tribal women will only come to fruition. The demographic dividend of India cannot be entirely exploited without the significant incorporation of its tribal women into the labour force and the economic mainstream - a process that will require not only a few modifications but also a complete redefining of the process of vocational training, its design, implementation, and measurement.

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