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### RESEARCH ARTICLE

## EMPOWERING TRIBAL WOMEN THROUGH UPSKILLING, FINANCIAL INCLUSION AND SUSTAINABLE LIVELIHOODS: EVIDENCE FROM JHARKHAND AND ODISHA

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### Abstract

This study examines how upskilling, financial inclusion, and digital access support the economic empowerment of tribal women in Jharkhand and Odisha. Using a descriptive and exploratory mixed-methods design, the study analyses 332 valid responses from an original dataset of 333 survey records over a period of 24 months. Descriptive statistics and chi-square tests are employed to examine livelihood patterns, technology adoption, and financial inclusion. The findings indicate that while tribal women actively participate in agriculture, handicrafts, forest-based livelihoods, and animal husbandry, sustainable growth is constrained by inadequate market access, limited capital, insufficient technical knowledge, and digital gaps. The study proposes an integrated empowerment framework combining skill development, SHG-led financial inclusion, digital literacy, institutional convergence, and market linkages. The results are interpreted within the limitations of a cross-sectional dataset and are intended to inform policy and future research.

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### Introduction:-

Inclusive development in India requires the meaningful participation of communities that have historically remained at the margins of markets, institutions and public services. Tribal women occupy a particularly important position in this discussion because they contribute substantially to household subsistence, agriculture, forest-based livelihoods and informal enterprise, yet their access to formal skill development, finance, technology and market institutions remains uneven. The present study focuses on tribal women in Jharkhand and Odisha, two states with significant tribal populations and diverse livelihood traditions.

### Rationale of the Study:-

Tribal women's economic inclusion cannot be understood only through income. It also involves access to information, control over productive resources, participation in decision-making, mobility, institutional trust and the ability to convert skills into sustainable livelihood outcomes. In field contexts such as West Singhbhum, Koraput, Nabarangpur, Mayurbhanj, Gumla, Simdega, Malkangiri and Sundargarh, economic inclusion is linked to local resources such as paddy farming, goat rearing, poultry, forest produce, handicrafts and organic farming. Therefore, a

locally grounded framework is required to understand how upskilling and financial inclusion can strengthen tribal women's livelihood agency.

### Objectives of the Study:-

The study pursues four objectives: first, to profile the socio-demographic characteristics of tribal women respondents in Jharkhand and Odisha; second, to identify the major livelihood activities and constraints faced by women engaged in sustainable businesses; third, to examine the status of training, technology access and financial inclusion indicators available in the survey data; and fourth, to suggest an integrated intervention framework for sustainable economic inclusion.

### Review of Literature:-

The literature on women's economic empowerment has shifted from narrow income-based measures to multidimensional approaches that include agency, resources and achievements. Kabeer's empowerment framework is particularly relevant because it explains empowerment as the expansion of the ability to make strategic life choices in contexts where this ability was previously denied. Sen's capability approach similarly emphasizes that development is not merely the growth of income but the expansion of substantive freedoms. In tribal contexts, these freedoms are shaped by education, mobility, access to financial institutions, social norms, market linkages and the availability of culturally appropriate training. Intersectionality further clarifies how gender, tribe, class, geography and educational deprivation overlap to produce distinct forms of exclusion. Sustainable livelihood literature adds that economic improvement depends on the interaction of human, social, financial, physical and natural capital. The National Rural Livelihoods Mission and SHG-bank linkage architecture have played an important role in organizing poor rural women, but the present study indicates that finance alone is insufficient unless linked with skills, market access, digital confidence and infrastructure.

### Research Methodology:-

The article uses a descriptive and exploratory mixed-methods design. The primary dataset contained 333 survey entries, of which 332 valid respondent records were available for statistical analysis over a period of 24 months. The respondents were from Jharkhand and Odisha and represented different districts, educational levels, caste categories and livelihood activities. Because the dataset is cross-sectional, the analysis is limited to descriptive statistics, cross-tabulations and chi-square tests of association. Advanced causal methods such as propensity score matching, difference-in-differences and instrumental variable estimation were not used because the dataset did not contain a panel structure, treatment-control allocation, baseline-follow-up measures or an external instrument.

### Variables and Analysis Plan:-

The analysis covered age, education, caste category, district, state, occupation, type of sustainable business, duration of business engagement, source of business initiation, training support, plans for expansion, technology access and selected financial inclusion indicators. Multi-response questions were summarized by counting the number of respondents selecting each option. For state-wise comparison, chi-square tests were conducted for selected categorical variables. The results are interpreted cautiously because some financial inclusion questions had high non-response and therefore could not be generalized to the entire sample.

### Findings and Analysis:-

The final analytical dataset contained 332 usable records. The average age of respondents was 38.6 years (SD = 12.2), with ages ranging from 18 to 65 years.

**Table 1. State-wise distribution of respondents**

State	Frequency	Percent
Odisha	184	55.4
Jharkhand	148	44.6

**Table 2. Educational profile of respondents**

Education	Frequency	Percent
Primary	100	30.1
Uneducated	91	27.4

12 <sup>th</sup>	66	19.9
10 <sup>th</sup>	55	16.6
Graduate	13	3.9
8 <sup>th</sup>	7	2.1

Table 3. Caste category of respondents

Caste category	Frequency	Percent
ST	268	80.7
SC	64	19.3

Table 4. Major districts represented in the sample

District	Frequency	Percent
West Singhbhum	55	16.6
Koraput	47	14.2
Nabarangpur	36	10.8
Malkangiri	35	10.5
Sundargarh	22	6.6
Mayurbhanj	22	6.6
East Singhbhum	21	6.3
Rayagada	20	6.0
Simdega	17	5.1
Hazaribagh	16	4.8
Gumla	14	4.2
Dhanbad	13	3.9

**Livelihood and Sustainable Business Profile:-**

The occupational pattern reflects strong dependence on local and nature-linked livelihoods. Goat rearing, poultry, daily wage labour, paddy farming and cultivation of pulses were the most frequently reported livelihood activities. Sustainable business involvement was concentrated in handicrafts, forest products, animal husbandry, agriculture and organic farming.

Table 5. Frequently reported livelihood activities

Occupation / activity	Mentions	Percent of valid sample
Goat Rearing	135	40.7
Poultry	132	39.8
Daily Wage Labor	110	33.1
Paddy Farming	106	31.9
Cultivation of pulses	89	26.8
Handicrafts	49	14.8
Forest Products	15	4.5
Agriculture	3	0.9

Table 6. Type of sustainable business

Business type	Frequency	Percent
Handicrafts	76	22.9
Forest Products	72	21.7
Other	59	17.8
Animal Husbandry	42	12.7
Agriculture	42	12.7
Organic Farming	32	9.6
Agriculture and Farming	5	1.5

Rice beer	2	0.6
Agriculture & Farming	1	0.3
Forest based products (Ranu,a herb to male handiya)	1	0.3

**Table 7. Duration of engagement in current business**

Duration	Frequency	Percent
More than 5 years	93	28.0
3-5 years	87	26.2
Less than a year	86	25.9
1-2 years	66	19.9

**Table 8. Source of business initiation**

How business started	Frequency	Percent
Self-started	85	25.6
Inherited	81	24.4
With community support	78	23.5
With government aid	76	22.9
Self-initiated with personal resources	11	3.3
SHG Loan	1	0.3

**Table 9. Training or support received for sustainable business**

Training received	Frequency	Percent
No	172	51.8
Yes	160	48.2

**Table 10. Future plan to expand or diversify business**

Expansion plan	Frequency	Percent
Yes	165	49.7
No	163	49.1
Maybe	4	1.2

**Business Challenges, Outcomes and Support Needs:-**

The leading constraints were market access, raw material availability, lack of technical knowledge and lack of capital. These findings suggest that livelihood support must go beyond short-term training and include value-chain support, input access, working capital and product marketing systems.

**Table 11. Major challenges in running sustainable businesses**

Challenge	Mentions	Percent of valid sample
Market access	124	37.3
Raw material availability	121	36.4
Technical knowledge	117	35.2
Lack of capital	117	35.2
Labor shortage	51	15.4
Climate change and environmental factors	12	3.6
Lack of access to capital	10	3.0
limited market access and market linkages	10	3.0

**Table 12. Reported impact of sustainable businesses**

Reported impact	Mentions	Percent of valid sample
Employment generation	162	48.8
Increased income	153	46.1
Community development	152	45.8
Improved standard of living	145	43.7
Enhanced social status and empowerment	6	1.8
Increased employment opportunities for the community and Improved education and healthcare facilities	6	1.8

**Table 13. Support and resources required by respondents**

Support required	Mentions	Percent of valid sample
Financial support	127	38.3
Infrastructure support	123	37.0
Market linkages	117	35.2
Training and capacity building	112	33.7
Want support to start her own agricultural business	2	0.6
Infrastructure	2	0.6

**Technology Access and Digital Inclusion:-**

The technology-related questions show partial digital exposure. However, missingness was high in some mobile-related variables, and interpretation is therefore restricted to valid responses. Among valid responses, nearly half of the women reported having used a computer or laptop and having access to the internet. Interest in further technology guidance indicates scope for community-based digital literacy interventions.

**Table 14. Technology and digital inclusion indicators**

Indicator	Valid responses	Yes	Yes %	No	Maybe
Computer/laptop use	212	102	48.1%	110	0
Internet access	203	97	47.8%	106	0
Training on technology devices	212	105	49.5%	107	0
Interested in technology guidance	212	106	50.0%	105	1

**Financial Inclusion Indicators:-**

Financial inclusion variables contained substantial non-response. Therefore, the results below are reported only as valid-response indicators and should not be interpreted as representative of all 332 usable records. The limited responses suggest awareness of savings accounts, SHGs, government subsidies and microfinance, but the missingness indicates the need for a revised questionnaire or follow-up field verification before making stronger claims.

Table 15. Financial inclusion indicators with valid responses

Indicator	Valid responses	Yes	Yes %	No	Maybe
Familiar with financial inclusion	12	11	91.7%	0	1
Taken loan from financial institution	12	5	41.7%	7	0
Aware of microfinance services	12	6	50.0%	6	0
Receive subsidies/welfare benefits	12	11	91.7%	1	0

**State-wise Association Tests:-**

Chi-square tests were conducted to examine whether selected variables differed significantly by state. These tests do not establish causality; they only indicate whether distributions differ statistically across Jharkhand and Odisha in this dataset.

Table 16. Chi-square tests by state

Variable	Chi-square	df	p-value	Interpretation
Education	3.177	5	0.6728	Not significant
Which type of sustainable business are you involved in?	16.906	9	0.0502	Not significant
Have you received any support or training related to your sustainable business?	2.275	1	0.1315	Not significant
Do you have any plans to expand or diversify your sustainable business in the future?	6.06	2	0.0483	Significant at 5%
Have you ever used a computer or laptop?	2.111	1	0.1462	Not significant
Do you have access to the internet?	2.587	1	0.1077	Not significant
Have you received any training or guidance on how to use technology devices effectively?	0.015	1	0.9033	Not significant

**Discussion:-**

The revised analysis shows that tribal women's economic inclusion is closely tied to livelihood realities rather than only to formal employment. A large share of respondents are involved in traditional and local economic activities such as animal husbandry, paddy farming, handicrafts and forest-based products. The low education profile reinforces the need for oral, visual and vernacular training methods. The findings also indicate that training support is available to some respondents, but gaps remain in capital, market access, raw material procurement and technical

knowledge. Thus, stand-alone training cannot produce sustainable inclusion unless it is connected with finance, digital support and market institutions.

#### **Integrated Intervention Model Emerging from the Data:-**

The evidence supports an integrated model consisting of six mutually reinforcing components: (a) livelihood-based skill development connected to existing occupations; (b) SHG-led financial literacy, savings and micro-credit support; (c) digital literacy through mobile-based and community-centre-based training; (d) market linkage through producer groups, local branding, packaging and fair pricing; (e) infrastructure support including storage, transport, irrigation and raw material access; and (f) institutional convergence among government departments, banks, NGOs, training agencies and tribal women's collectives. The model places tribal women as active economic participants rather than passive scheme beneficiaries.

#### **Policy Implications:-**

For policy makers, the study suggests that mainstreaming tribal women into the economy requires localized implementation. Financial products must be designed around small enterprises, seasonal income and low collateral capacity. Digital training should be practical and linked to daily needs such as payments, communication, online market information and scheme access. Skill programmes should be scheduled around agricultural seasons and domestic responsibilities. Market linkage support is essential because many respondents identified market access as a core constraint. Government and non-government agencies should also develop district-specific livelihood clusters, especially around forest products, handicrafts, animal husbandry and organic farming.

#### **Conclusion:-**

The study received 333 responses and retained 332 usable records for analysis. The findings demonstrate that tribal women in Jharkhand and Odisha are already economically active, but their businesses remain constrained by limited capital, market access, technical knowledge, infrastructure and uneven digital inclusion. The paper therefore recommends an integrated empowerment ecosystem that combines upskilling, financial inclusion, digital literacy, market linkage and institutional convergence.

#### **Limitations and Scope for Further Research:-**

The study is limited by cross-sectional data, missingness in some financial inclusion variables and the absence of baseline-follow-up measurements. Future research may collect a balanced panel dataset with income, savings, credit, enterprise profit, empowerment scale items and follow-up measures. This would make it possible to conduct reliability analysis, regression, difference-in-differences or impact evaluation. A larger qualitative component may also be used to document life histories and community-specific pathways of empowerment.

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