



Evaluating the effectiveness of inclusive education policies on higher education participation of tribal women in Rayagada District

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Abstract

This study evaluates the effectiveness of inclusive education policies in enhancing higher education participation among tribal women in Rayagada district of Odisha, India. The tribal women have continued to face significant barriers to access and participation despite several policy measures, including reservations, scholarships, and digital education programs. The quantitative cross-sectional design was used to gather data on 300 tribal women students using a structured questionnaire. The results indicate that participation is positively affected by inclusive education policies, with a significant effect ($\beta = 0.45$), especially regarding enrolment. Nonetheless, these policies are mediated by factors like awareness and institutional support and moderated by socio-economic status, cultural norms, and access to digital facilities. The research cites that economic limitations, oppressive cultural patterns, and inadequate digital facilities still impede retention and completion rates. On the whole, the study emphasizes that although inclusive policies enhance access, they can be successful only in the case of supportive institutional mechanisms and socio-economic conditions. The research offers valuable information to policymakers and educational institutions to enhance inclusive models and advance equitable higher education access to tribal women.

Keywords: Inclusive education, tribal women, higher education participation, educational policy effectiveness, socio-economic factors, cultural barriers, digital divide, Rayagada District

Introduction

Inclusive higher education has become an important tool towards social justice, equity, and sustainable development in modern societies ^[1]. The provision of equal access to higher education to marginalized communities in a heterogeneous and socio-economically stratified nation such as India is a developmental requirement as well as a constitutional obligation. Tribal women constitute one of the most vulnerable and underrepresented groups of these communities, facing several layers of marginalization due to gender inequality, socio-economic deprivation, exclusion based on culture, and geographical isolation ^[2, 3]. The problem is even more serious in such regions as Rayagada district of Odisha, represented by a high population density of tribals, poor infrastructure, and the lack of developmental issues.

1. Background of the Study

Education is universally recognized as a basic human right and a key driver of socio-economic change, empowerment, and nation-building. The idea of higher education has over the years evolved beyond knowledge dissemination to a wider concept that focuses on inclusivity, accessibility, and equal opportunity to all sections of society ^[4]. Inclusive policies of education are concerned with eradicating inequities and making sure that disadvantaged communities such as Scheduled tribes can access, be part of, and enjoy the higher education systems.

India has created various policy programs like reservation policies, scholarships, hostels, and special welfare schemes to promote the educational participation of the tribal communities. In more recent years, such frameworks as the National Education Policy (2020) have also placed

additional focus on inclusivity, equity, and digital integration. Even with these initiatives, tribal communities are still grossly underrepresented in higher education ^[5, 7]. In this context, tribal women have compounded disadvantages because of the interplay of limited factors like poverty, gender discrimination practices, early marriages, cultural emphasis, and absence of educational facilities in the remote regions.

The case of Rayagada district is a crucial one to explore these problems since it is mainly composed of tribal groups and is characterized by poor connectivity, inadequate access to high-quality institutions, and a low level of literacy ^[8]. Despite some improvement in enrollment as a result of policy measures, retention, academic achievement, and completion rates reveal systemic gaps that persist. Therefore, there exists a necessity to critically analyze how effective inclusive education policies can be in solving the challenges.

2. The Policy-Participation Gap

Even with increased focus on inclusive education and the introduction of multiple supportive policies, there still exists a huge disparity between the policy provisions and educational participation among tribal women. This is what we can describe as the policy-participation gap, in which we have access mechanisms but they are not fully utilized ^[9].

On the one hand, the government has implemented several programs, including financial aid, reserved places, and online learning platforms, to make higher education more accessible. Conversely, tribal women still experience significant impediments that deter their involvement and achievement. Financial limitations usually urge families to focus on short-term livelihood requirements at the expense

of education. Traditional gender roles and cultural norms further limit educational goals, and the rates of dropouts increase.

These challenges are aggravated by geographical isolation in districts such as Rayagada, which creates a barrier to accessing institutions, means of transport, and education ^[10]. Moreover, the rising trend of digital education has also created new disparities where numerous tribal women have no access to digital tools, the internet, or digital literacy. Subsequently, although inclusive policies offer a structural framework of access, enabling socio-economic and technological conditions are lacking, which inhibits their full fulfilment.

3. Research Gaps and Problem Statement

Despite the literature that has been published on the topic of educational inclusion and gender disparities, there are still several gaps in the context of higher education of tribal women, especially from a regional perspective. First, a considerable number of studies use a generalized approach to marginalized communities, and they do not properly concentrate on the intersectional challenges of tribal women. This restricts a subtle insight into their individual socio-cultural and economic limitations ^[11].

Second, past studies have been predominantly focused on enrollment figures, and little attention has been given to retention, academic success, and outcomes over time. This limited scope does not reflect the wider aspects of inclusion, including institutional support mechanisms, cultural assimilation, and educational quality. Third, new elements like online education, access to technology, and learning opportunities based on skills are underrepresented in tribal settings, particularly in underdeveloped districts such as Rayagada.

Fourth, empirical research that brings together quantitative and qualitative research designs to examine the effectiveness of inclusive education policies is lacking ^[12]. The regional inequalities also point to the necessity of local research depicting the realities on the ground instead of national tendencies.

Considering this, the current research is working on the following research problem:

To what extent are inclusive education policies effective in enhancing higher education participation among tribal women in Rayagada district, and what socio-economic, cultural, institutional, and technological factors influence their educational outcomes?

4. Objectives and Significance of the Study

Objectives of the Study

The specific objectives of this study are:

1. To investigate the extent of involvement of tribal women in higher education in the Rayagada district.
2. To determine the socio-economic, cultural, and institutional barriers to their access and retention.
3. To assess the efficacy of the inclusive education policy and government measures.
4. To examine how digital access and technological aspects influence educational participation.
5. To recommend policy actions to enhance inclusion and education outcomes.

Significance of the Study

This research is threefold. In theory, it contributes to the literature as it presents an intersectional approach to inclusive education, with a particular emphasis on tribal

women in a geographically and socio-economically disadvantaged area. It increases awareness of the interaction between the various aspects of marginalization in shaping educational participation ^[13].

The study methodologically uses a mixed-method approach, which incorporates both quantitative and qualitative data to give a holistic and comprehensive analysis. This method enhances the validity and richness of the results.

In practice, the research can provide evidence-based information to policymakers, educational organizations, and development organizations to develop specific interventions that would enhance access, retention, and success of tribal women in higher education ^[14]. All these are especially applicable to the current changes in education reform and the growing emphasis on equity and inclusivity within the Indian higher education system.

Theoretical Framework and Hypotheses

1. Theoretical Framework

Inclusive education is premised on concepts of equity, accessibility, and social justice, and seeks to have marginalized groups equally participate in higher education ^[15]. This paper is based on four theories:

- Human Capital Theory Interpretation: Education increases skills and socio-economic mobility, and policy interventions such as scholarships and reservations are vital to tribal women.
- Capability Approach stresses the fact that access is not enough; people have to have the capacity and encouragement to use learning opportunities.
- Social Exclusion Theory emphasizes that tribal women are systemically marginalized because of their gender, culture, and geography ^[16].
- Digital Divide Theory also deals with disparities in technology access, which plays a great role in being included in the contemporary education systems.

Such views indicate that even though inclusive education policies open opportunities, their success levels are influenced by the socio-economic, cultural, and institutional factors.

2. Hypotheses

H1: Inclusive education policies significantly influence higher education participation among tribal women.

H2: Socio-economic status moderates the relationship between policies and participation.

H3: Cultural norms negatively moderate participation.

H4: Digital access positively moderates participation.

H5: Awareness and institutional support mediate the relationship between policies and participation.

3. Conceptual Framework

In the study, the conceptualization of the inclusive education policies (reservations, scholarships, digital initiatives) is understood as a major contributor to the increased participation of tribal women in higher education ^[17]. The mechanism of this relationship includes mediating factors, which in the first place are the awareness of policies and institutional support, which help to gain access and persist in the educational process. Simultaneously, socio-economic status, cultural norms, and access to digital resources are moderating variables, which determine the intensity of this relationship.

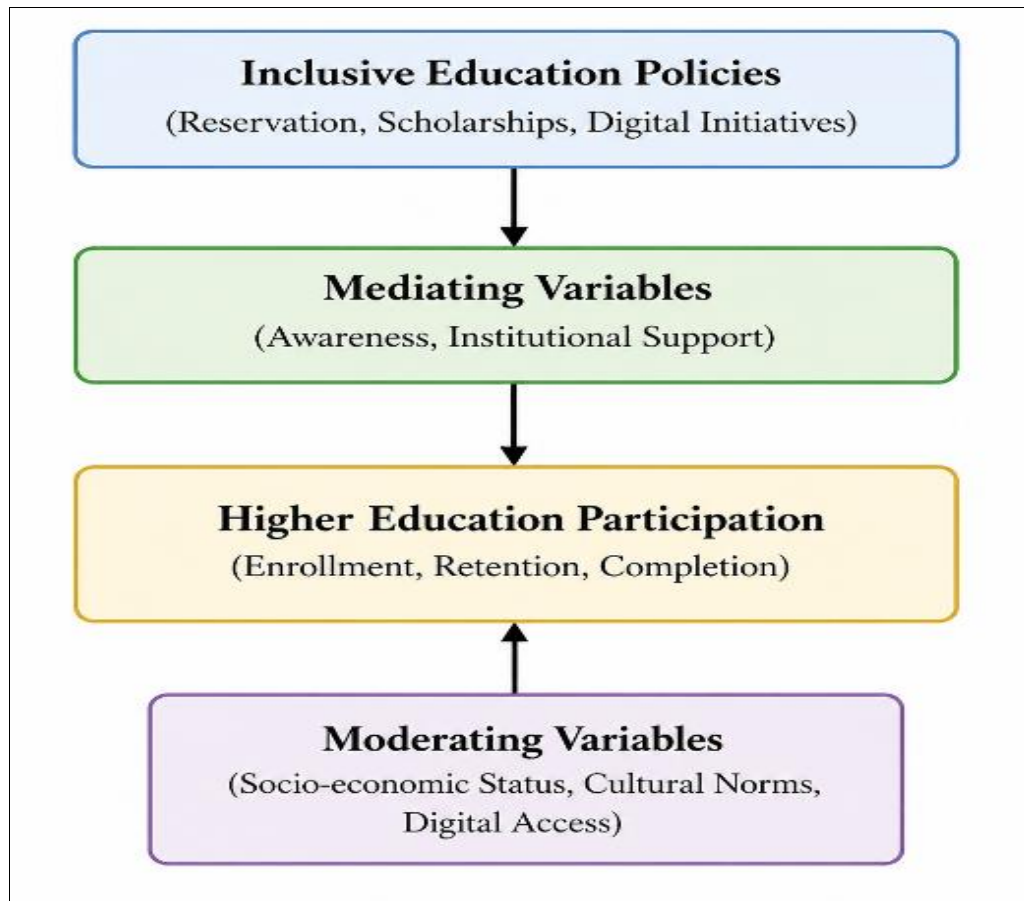


Fig 1: Conceptual Model of the Study

Methodology

1. Research Design and Sample

The quantitative cross-sectional research design was utilized, whereby a structured survey was used. The data were gathered between January and March 2026, and it involved tribal women pursuing higher education in the district of Rayagada in Odisha state in India.

Stratified random sampling was used to get a final valid sample of 300 respondents to represent various socio-economic backgrounds and institutions. Sufficient statistical representation was ensured using standard sampling techniques to determine that the sample size was adequate and the response rate was about 75.

2. Measurement Instruments

Structured items based on previous research on inclusive education and participation were used to measure all constructs:

- **Inclusive Education Policies (8 items):** Scholarships, reservations, digital initiatives.
- **Higher Education Participation (9 items):** Enrollment, retention, completion.
- **Awareness and Institutional Support (6 items):** Policy awareness, institutional facilities.
- **Socio-economic Status (5 items):** Income, family background.
- **Cultural Norms (4 items):** Gender roles, social beliefs.
- **Digital Access (4 items):** Internet access, availability of device.

The Likert Scale was employed (1 being strongly disagree, 5 strongly agree). Cronbach's Alpha (0.87) was used to establish the overall reliability of the instrument, which is good internal consistency.

Table 1: Demographic Characteristics of the Sample (N = 300)

Characteristic	Category	Frequency	Percentage (%)
Age	18–20 years	90	30.00
	21–23 years	135	45.00
	24–26 years	55	18.30
	Above 26 years	20	6.70
Education Level	Undergraduate	180	60.00
	Postgraduate	95	31.70
	Others	25	8.30
Family Income	Low	160	53.30
	Medium	105	35.00
	High	35	11.70
Digital Access	Yes	140	46.70
	No	160	53.30

Results

The collected data were analyzed using statistical techniques in SPSS to examine the effectiveness of inclusive education policies on higher education participation among tribal women in

Rayagada district.

1. Descriptive Statistics

Descriptive analysis was conducted to understand the general perception of respondents regarding key variables.

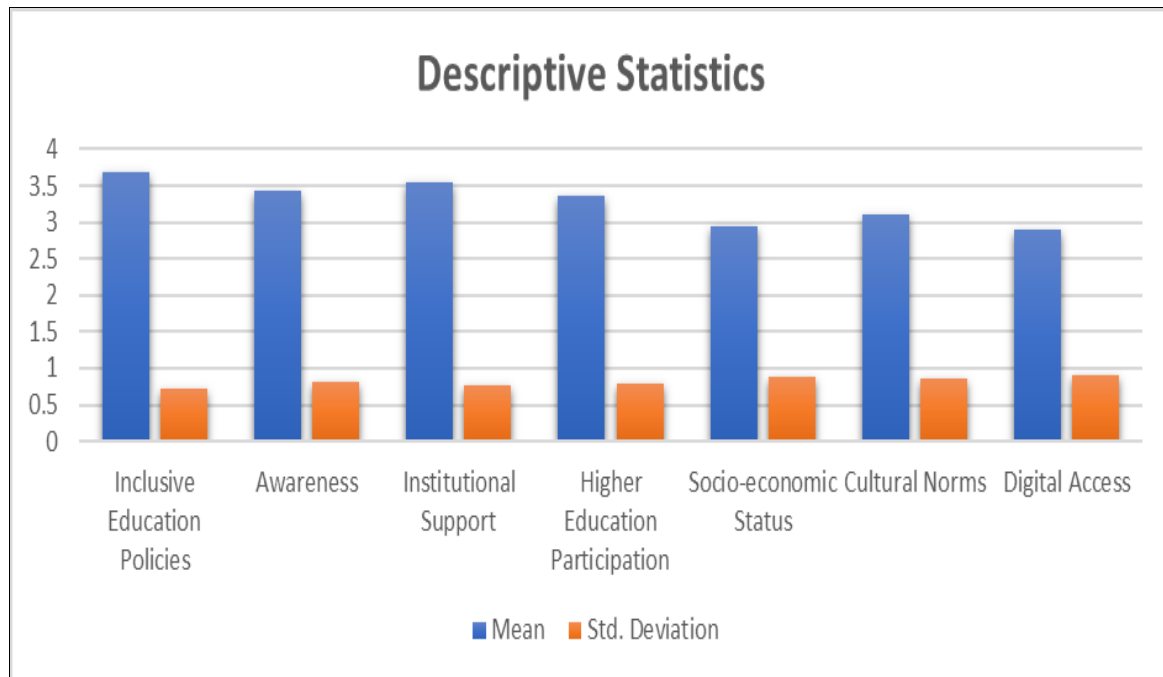


Fig 2: Descriptive Statistics of Study Variables (N = 300)

The results indicate a moderate level of agreement among respondents regarding the availability of inclusive education policies (Mean = 3.68). However, relatively lower mean values for digital access and socio-economic status suggest existing barriers that

may limit effective participation.

2. Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships between variables.

Table 2: Correlation Matrix

Variables	1	2	3	4	5	6	7
1. Policies	1						
2. Awareness	0.52**	1					
3. Institutional Support	0.48**	0.55**	1				
4. Participation	0.57**	0.49**	0.53**	1			
5. Socio-economic Status	0.34*	0.30*	0.28*	0.41**	1		
6. Cultural Norms	-0.29*	-0.25*	-0.22*	-0.38**	-0.20*	1	
7. Digital Access	0.46**	0.42**	0.39**	0.51**	0.36**	-0.18*	1

Note: * $p < 0.05$, ** $p < 0.01$

Inclusive education policies show a strong positive correlation with higher education participation ($r = 0.57$, $p < 0.01$), supporting the proposed relationship. Cultural norms exhibit a negative correlation with participation, indicating them

restrictive influence.

3. Regression Analysis and Hypothesis Testing

Multiple regression analysis was conducted to test the hypotheses.

Table 3: Regression Results

Independent Variable	Beta (β)	t-value	p-value	Result
Inclusive Education Policies	0.45	7.82	<0.001	Supported (H1)
Awareness	0.28	5.10	<0.001	Supported (H5 - Mediation)
Institutional Support	0.31	5.64	<0.001	Supported (H5 - Mediation)
Socio-economic Status	0.22	3.96	<0.01	Supported (H2)
Cultural Norms	-0.26	-4.21	<0.01	Supported (H3)
Digital Access	0.33	6.02	<0.001	Supported (H4)

- $R^2 = 0.62$
- Adjusted $R^2 = 0.60$
- F-value = 78.45 ($p < 0.001$)

The regression model explains 62% of the variance in higher education participation. Inclusive education policies have a significant positive impact ($\beta = 0.45$, $p < 0.001$), confirming H1. Awareness and institutional support act as significant mediators, while socio-economic status and digital access strengthen participation. Cultural norms negatively affect participation, supporting H3.

Discussion

1. Theoretical Contributions

- **The paper adds to the literature in the following ways:** The policy- participation gap: The results prove that inclusive education policies have a positive effect on higher education participation ($\beta = 0.45$); however, due to socio-economic and structural constraints, they are not effective enough ^[18]. This emphasizes that access to policy does not necessarily guarantee participation.
 - **Influence of Socio-economic and Cultural Factors:** Socio-economic status is positively related to participation, whereas cultural norms have a negative impact. This substantiates the argument that there are various structural and social limitations to higher education among tribal women ^[19].
 - **Digital Access as an Enabler:** Digital access has a significant positive effect ($\beta = 0.33$), meaning that technological availability is a major factor behind the enhancement of participation, particularly in remote locations.
 - **Mediating Role of Awareness and Institutional Support:** Awareness and institutional support have a significant mediating effect, and this implies that policies can only work when people are aware and supported by institutions.
- ### 2. Managerial and Practical Implications
- **To policymakers:** Enhance policy implementation by raising awareness and providing special support to tribal areas ^[20].
 - **In the case of educational institutions:** Improve infrastructure, guidance, and inclusive practices to assist tribal women.
 - **To government agencies:** Prioritize digital access and connectivity in rural places.
 - **To communities:** Educate society about the importance of educating women and lessen cultural barriers.

Conclusion and Future Research

This Research concludes that the policies of inclusive education have a positive impact on the participation of tribal women in higher education in Rayagada district, especially in enhancing access and enrollment. Nonetheless, their usefulness is limited by socio-economic issues, cultural obstacles, and inaccessibility to digital resources. The results indicate that institutional support and awareness are critical in transferring policy provisions into participation.

Limitations: The study is limited to a cross-sectional design and a sample from one district, which may affect generalizability.

Future Research: Future studies may use longitudinal and comparative approaches to examine long-term impacts and regional variations, and explore the role of digital and skill-based interventions in improving participation outcomes.

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