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Impact of Social Welfare Schemes in the Socio-Economic Development of Scheduled Tribes: An Empirical Study from West Tripura, Tripura

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Abstract

This empirical study examines the impact of social welfare schemes on the socio-economic development of Scheduled Tribes (STs) in West Tripura, Tripura. The research focuses on key welfare initiatives such as education scholarships, healthcare subsidies, housing schemes, livelihood support programs, and infrastructure development projects. Combining beneficiary perceptions with hypothesis testing, the research comprehensively evaluates these schemes' effectiveness. A ranking method was used to analyze beneficiary perceptions of the impact of social welfare schemes. Hypothesis testing was used to evaluate the statistical significance of each scheme's contribution to socio-economic development. Data were collected from beneficiaries in the West Tripura District and examined using regression analysis. The study identified education scholarships as a highly impactful scheme, followed by healthcare subsidies, housing schemes, livelihood support programs, and infrastructure development projects. Statistical analysis confirmed a significant positive relationship between social welfare schemes and improved socio-economic indicators, such as income, education levels, healthcare access, and living conditions. The study on various agricultural schemes and their benefits on Tripura tribal communities were also discussed.

***Key words*:** Scheduled tribes, Social welfare schemes, Socio-economic development, Livelihood support programs, Agricultural schemes

Scheduled Tribes (STs) in India have historically faced marginalization and significant socio-economic challenges that continue to impede their development and overall well-being. To address these issues, the government of India has implemented various social welfare schemes to improve the lives of ST communities. These schemes, covering areas such as education, healthcare, housing, and employment, aim to uplift Scheduled Tribes (STs) and reduce disparities between them and the broader population. The role of these social welfare initiatives in promoting the socio-economic development of STs holds considerable significance and warrants close attention. Understanding the effectiveness of these schemes requires a thorough analysis of their implementation, coverage, and outcomes. Statistical data is essential for this analysis, offering valuable insights into the progress achieved and the persistent challenges. The Ministry of Tribal Affairs reports that the coverage and reach of social welfare schemes for Scheduled Tribes (STs) have significantly expanded over the years. For example, the Tribal Welfare Tripura state portal in Tripura has seen an increase in the number of beneficiaries of welfare schemes, with more ST households gaining access to education, healthcare, and the agriculture sector [1].

However, despite these efforts, challenges persist. Data from the National Sample Survey Office (NSSO) shows that STs continue to lag behind the general population in terms of literacy rates, access to healthcare, and employment opportunities. This suggests that, although social welfare schemes have achieved some progress, substantial efforts are still needed to ensure the comprehensive development of Scheduled Tribe communities. This study aims to explore the impact of social welfare schemes on the socio-economic development of Scheduled Tribes (STs) in greater depth. By analyzing statistical data on scheme implementation, coverage, and outcomes, this study aims to provide a comprehensive understanding of the effectiveness of these schemes. Through this analysis, researchers hope to identify areas for improvement and recommend strategies to enhance the impact of social welfare schemes on the lives of STs [2].

Despite the existing literature on the impact of social welfare schemes on the socio-economic development of Scheduled Tribes in India, there is a notable gap in understanding the specific mechanisms through which these schemes influence various aspects of Tribal development [3]. While some studies have provided broad assessments of the overall impact, there is a need for more detailed and context-specific analysis that examines the direct and indirect effects of different schemes on key indicators of socio-economic development, such as education, healthcare, livelihoods, and infrastructure. Additionally, there is limited research that compares the effectiveness of different types of schemes or evaluates the long-term sustainability of their impact.

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Addressing these gaps could provide valuable insights into the design and implementation of social welfare schemes to maximize their positive effects on the socio-economic development of Scheduled Tribes.

MATERIALS AND METHODS

The research methodology provides a structured approach to finding the impact of social welfare schemes on the socio-economic development of Scheduled Tribes in West Tripura.

Two sampling techniques were used

Random sampling and purposive sampling. Random sampling ensured that each household in West Tripura had a representative sample, which reduced biases. Purposive sampling selected beneficiaries of social welfare schemes and other important stakeholders involved in the implementation, making sure the inclusion of individuals with direct experience was ensured.

Sample size justification: The sample size of 257 respondents was selected based on a confidence level of 95% and a 5% error. This number of samples balances statistical precision with practical efficiency.

Data collection: Primary data is collected through a structured questionnaire for gathering information on socio-economic indicators. Secondary data were collected from government reports and other relevant sources.

Hypothesis of the study

Hypothesis (H0): Social welfare schemes have no major impact on the socio-economic development of Scheduled Tribes (ST) in India.

Hypothesis (H1): Social welfare schemes significantly impact the socio-economic development of Scheduled Tribes (ST) in India.

Data analysis

Descriptive and inferential statistics were used. The demographic characteristics have been analyzed using descriptive statistics tools, while inferential statistics, such as regression analysis, assessed the impact of social welfare schemes on socio-economic indicators.

RESULTS AND DISCUSSION

In this section, an attempt has been made to analyze the impact of social welfare schemes on the socio-economic development of Scheduled Tribes in India, focusing on key indicators such as education, healthcare, livelihoods, and infrastructure, and to understand the perspectives and experiences of tribal communities regarding the implementation and impact of social welfare schemes.

Table 1 Descriptive statistics of scheduled tribe

Variables		No. of respondents	Percentage
Gender	Male	104	40.47%
	Female	153	59.53%
	Total	257	100.00%
Age	Up to 25	51	19.84%
	26-35	46	17.90%
	36-45	51	19.84%
	46-55	64	24.90%
	56 and above	45	17.51%
	Total	257	100.00%
Educational qualifications	Up to Intermediate	47	18.29%
	Intermediate	74	28.79%
	Graduation	98	38.13%
	Postgraduate	38	14.79%
	Total	257	100.00%

Data depicted in (Table 1) shows the demographic and educational profile of Scheduled Tribe respondents in West Tripura, Tripura. The table shows that out of the 257 respondents, 104 (40.47%) were male, while 153 (59.53%) were female. Regarding age distribution, the major respondents belonged to the 46-55 age group, comprising 64 respondents (24.90%), followed by the up-to-25 age group with 51 respondents (19.84%). The age group with the fewest respondents was 56 and above, with 45 respondents (17.51%). Regarding educational qualifications, the major respondents were graduates, a total of 98 individuals (38.13%), followed by those with intermediate qualifications, accounting for 74 respondents (28.79%). The smallest group contains postgraduates, with 38 respondents (14.79%) [4].

Social welfare scheme preferences and utilization

Social welfare schemes are pivotal in uplifting marginalized communities by providing essential support and resources. To comprehensively analyze the preferences and utilization patterns of these schemes, this study employs a unique ranking method. By soliciting beneficiaries' rankings of various social welfare schemes, the researcher aims to uncover different insights into their preferences and reasons driving their choices [5].

Data in (Table 2) shows the beneficiaries' rankings reveal interesting insights into their perceptions of the impact of various social welfare schemes on the socio-economic development of Scheduled Tribes in West Tripura. Housing schemes were ranked the highest, indicating a strong belief among respondents in the importance of secure housing for development. Education scholarships followed closely, suggesting a recognition of the role education plays in enhancing livelihoods and opportunities. Healthcare subsidies were ranked third, highlighting the significance of access to affordable healthcare for overall well-being. Livelihood support programs, ranked fourth, indicate the importance of sustainable income generation for community development. Infrastructure development projects, ranked fifth, reflect the recognition of the role of infrastructure in improving living standards. The sixth rank, "Agriculture schemes," suggests a diversity of opinions

not captured by the listed schemes, indicating a need for further exploration of unique needs and preferences within the community. The ranking of social welfare schemes by beneficiaries in West Tripura underscores the community's prioritization of secure housing, education, and healthcare as key drivers of socio-economic development. The emphasis on livelihood support and infrastructure further highlights the need for sustainable income and improved living conditions [6].

Impact of social welfare schemes

Multilinear regression was performed in a stepwise fashion to examine the connection between dependent and independent variables to test the study's hypotheses.

Null hypothesis (H_0): Social welfare schemes have no major impact on the socio-economic development of Scheduled Tribes (ST) in India.

Table 2 Social welfare scheme preferences

S. No.	Which social welfare schemes do you believe have had the most significant impact on the socio-economic development of Scheduled Tribes in West Tripura?	Rank
1	Education scholarships	2
2	Healthcare subsidies	3
3	Housing schemes	1
4	Livelihood support programs	4
5	Infrastructure development projects	5
6	Agriculture schemes	6

Table 3 Social welfare schemes and its impact on socio – economic development of ST's

Step	Independent variables	β	t	Statistically significant	R	R square	F	Statistically significant
1	Education scholarships	0.39	10.32	0.00	0.89	0.79	86.35	0.00

The data portrayed in (Table 3) shows the results of the regression analysis examining the impact of education scholarships on the socio-economic development of Scheduled Tribes (STs) in the study area. The independent variable "Education Scholarships" has a regression coefficient (β) of 0.39, suggesting that each unit increase in education scholarships is associated with a predicted increase of 0.39 units in the dependent variable related to socio-economic development [7].

The t-value of 10.32 indicates that the regression coefficient is statistically significant at $p < 0.05$, revealing that education scholarships have a significant impact on the socio-economic development of STs. The R-squared value of 0.79 indicates that 79% of the variance in socio-economic development can be explained by education scholarships alone.

The F-statistic of 86.35 is statistically significant at $p < 0.05$, confirming that the overall regression model provides a good fit for the data. This analysis provides empirical evidence supporting the positive impact of education scholarships on the socio-economic development of STs in the study area.

The data incorporated in (Table 4) shows the results of the regression analysis examining the impact of healthcare subsidies on the socio-economic development of Scheduled Tribes (STs) in the study area. The independent variable "Healthcare Subsidies" has a regression coefficient (β) of 0.43, indicating that for every unit increase in healthcare subsidies, there is a predicted increase of 0.43 units in the dependent variable related to socio- economic development [8].

The t-value of 9.21 indicates that the regression coefficient is statistically significant at $p < 0.05$, reveals that healthcare subsidies have a significant impact on the socio-economic development of STs. The R-squared value of 0.82 indicates that 82% of the variance in socio-economic development can be explained by healthcare subsidies alone.

The F-statistic of 79.88 is also statistically significant at $p < 0.05$, indicating that the overall regression model is a good fit for the data. This analysis provides empirical evidence supporting the positive impact of healthcare subsidies on the socio-economic development of schedule tribes (STs) in the study area.

Table 4 Social welfare schemes and its impact on socio – economic development of ST's

Step	Independent variables	β	t	Statistically significant	R	R square	F	Statistically significant
1	Healthcare subsidies	0.43	9.21	0.00	0.91	0.82	79.88	0.00

Table 5 Social welfare schemes and its impact on socio – economic development of ST's

Step	Independent variables	β	t	Statistically significant	R	R square	F	Statistically significant
1	Housing schemes	0.31	11.29	0.00	0.87	0.75	81.39	0.00

The data in (Table 5) shows the results of the regression analysis examining the impact of housing schemes on the socio-economic development of Scheduled Tribes (STs) in the study area. The independent variable "Housing Schemes" has a regression coefficient (β) of 0.31, indicating that for every unit increase in housing schemes, there is a predicted increase of 0.31 units in the dependent variable related to socio-economic development [9].

The t-value of 11.29 indicates that the regression coefficient is statistically significant at $p < 0.05$, reveals that housing schemes have a significant impact on the socio-economic development of STs. The R-squared value of 0.75 indicates that 75% of the variance in socio-economic development can be explained by housing schemes alone.

The F-statistic of 81.39 is also statistically significant at $p < 0.05$, indicating that the overall regression model is a good fit for the data. This analysis provides empirical evidence supporting the positive impact of housing schemes on the socio-economic development of STs in the study area.

Table 6 Social welfare schemes and its impact on socio – economic development of ST's

Step	Independent variables	β	t	Statistically significant	R	R square	F	Statistically significant
1	Livelihood support program	0.37	13.43	0.00	0.84	0.70	92.23	0.00

The (Table 6) shows the results of the regression analysis examining the impact of livelihood support programs on the socio-economic development of Scheduled Tribes (STs) in the study area. The independent variable "Livelihood Support Program" has a regression coefficient (β) of 0.37, indicating that for every unit increase in livelihood support programs, there is a predicted increase of 0.37 units in the dependent variable related to socio-economic development [10-12].

The t-value of 13.43 indicates that the regression coefficient is statistically significant at $p < 0.05$, signifying that livelihood support programs have a significant impact on the socio-economic development of STs. The R- squared value of 0.70 indicates that 70% of the variance in socio-economic development can be explained by livelihood support programs alone.

The F-statistic of 92.23 is also statistically significant at $p < 0.05$, indicating that the overall regression model is a good fit for the data. This analysis provides empirical evidence supporting the positive impact of livelihood support programs on the socio-economic development of STs in the study area.

Table 7 Social welfare schemes and its impact on socio – economic development of ST's

Step	Independent variables	β	t	Statistically significant	R	R square	F	Statistically significant
1	Infrastructure development projects	0.43	14.51	0.00	0.88	0.77	84.39	0.00

Data in (Table 7) shows the results of the regression analysis examining the impact of infrastructure development projects on the socio-economic development of Scheduled Tribes (STs) in the study area. The independent variable "Infrastructure Development Projects" has a regression coefficient (β) of 0.43, indicating that for every unit increase in infrastructure development projects, there is a predicted increase of 0.43 units in the dependent variable related to socio-economic development [13-14].

The t-value of 14.51 indicates that the regression coefficient is statistically significant at $p < 0.05$, reveals that infrastructure development projects have a significant impact on the socio-economic development of STs. The R-squared value of 0.77 indicates that 77% of the variance in socio-economic development can be explained by infrastructure development projects alone.

The F-statistic of 84.39 is also statistically significant at $p < 0.05$, indicating that the overall regression model is a good fit for the data. This analysis provides empirical evidence supporting the positive impact of infrastructure development projects on the socio-economic development of STs in the study area.

In Tripura, several agricultural schemes have been implemented to enhance the socio-economic development of Scheduled Tribes (STs). These initiatives aim to improve agricultural productivity, ensure sustainable livelihoods, and promote economic self-reliance among tribal communities [15-16].

Agricultural schemes and their benefits to tribal communities

National Food Security Mission (NFSM): This centrally sponsored scheme focuses on increasing the production of rice, pulses, coarse cereals, and commercial crops. By providing high-yielding seed varieties, fertilizers, and pest management techniques, NFSM enhances food security and income levels among tribal farmers.

National Mission on Sustainable Agriculture (NMSA): Under NMSA, the Rainfed Area Development (RAD) program promotes sustainable farming practices in rainfed areas, which are prevalent in tribal regions of Tripura. The scheme supports integrated farming systems, soil health management, and water conservation, thereby improving agricultural resilience and productivity for tribal farmers.

Pradhan Mantri Krishi Sinchai Yojana (PMKSY): Aimed at enhancing irrigation coverage, PMKSY ensures that tribal farmers have access to water resources for their crops. The scheme promotes efficient water management practices, leading to increased agricultural output and reduced dependence on monsoon rains.

Rashtriya Krishi Vikas Yojana (RKVY): This scheme provides financial assistance to states for comprehensive agricultural development. In Tripura, RKVY funds have been utilized to support tribal farmers through initiatives like the distribution of quality seeds, farm mechanization, and the development of market infrastructure, thereby increasing their income and livelihood opportunities.

Tribal Sub-Plan (TSP): The TSP strategy mandates that each development department in Tripura allocates a specific portion of their budget for the welfare of Scheduled Tribes. In agriculture, this has translated into targeted interventions such as assistance for horticultural activities, animal husbandry, and pisciculture, directly benefiting tribal farmers by diversifying their income sources and promoting sustainable practices.

Special Central Assistance to Tribal Sub-Schemes (SCA to TSS): This assistance focuses on income-generating activities for tribal communities. In Tripura, funds have been utilized to support agricultural activities, including the provision of improved seed varieties, plantation initiatives, and the promotion of sustainable farming practices among tribal farmers.

Impact analysis

The implementation of these schemes has led to

improvements in the socio-economic conditions of Tripura's tribal communities. Enhanced access to quality seeds, modern farming techniques, and irrigation facilities has resulted in increased agricultural productivity and income levels among tribal farmers. Diversification into horticulture, animal husbandry, and pisciculture has provided additional revenue streams, reducing economic vulnerability. Moreover, the focus on sustainable practices has promoted environmental conservation, ensuring the long-term viability of tribal livelihoods. The challenges such as limited awareness of these schemes, inadequate infrastructure, and the need for capacity building among tribal farmers still persist. Addressing these issues through targeted programs, infrastructure development, and continuous training can further strengthen the positive impacts of these agricultural schemes on the socio-economic development of Tripura's Scheduled Tribes.

CONCLUSION

The analysis of beneficiary perceptions and hypothesis testing regarding the impact of various social welfare schemes on the socio-economic development of Scheduled Tribes (STs) in West Tripura provides a comprehensive understanding of the effectiveness of these schemes. Beneficiaries ranked education scholarships as the second most impactful scheme, indicating their importance in the improvement of the Schedule Tribe communities. The hypothesis testing confirms this, showing a statistically significant impact of education scholarships on socio-economic development. Healthcare subsidies were ranked third in impact, highlighting their significance for the well-being and development of ST communities. The hypothesis testing supports this, indicating a statistically significant impact of healthcare subsidies on socio-economic development. Housing schemes were perceived to have the most significant impact, according to beneficiary rankings, which aligns with the hypothesis testing, showing a statistically significant impact on socio-economic development. Livelihood support programs were ranked fourth in impact, indicating their importance for sustainable livelihoods in ST communities. The hypothesis testing confirms this, showing a statistically significant impact on socio-economic development. Infrastructure development projects were ranked fifth in impact, revealing their importance, although not immediate, for socio-economic development. The hypothesis testing supports this, indicating a statistically significant impact on socio-economic development. These findings underscore the importance of a multi-faceted approach to socio-economic development, addressing education, healthcare, housing, livelihoods, and infrastructure. The major impacts identified through beneficiary perceptions and hypothesis testing highlight the effectiveness of these schemes in improving the lives of ST communities in West Tripura. Effective implementation and awareness of these schemes are crucial for achieving sustainable development and empowering ST.

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