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A Study of Work Participation among Scheduled Tribes in Gujarat

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Abstract

This study examines Scheduled Tribe work participation in Gujarat using district-level Census 2011 data covering 26 districts. Work Participation Rate (WPR) is analysed by gender, rural–urban residence and selected age groups, along with the relationship between ST literacy and work participation. Paired-samples *t*-tests, repeated-measures ANOVA and Pearson's correlation were used for statistical analysis. The results show a significant gender difference, with male WPR (55.65%) substantially higher than female WPR (34.30%). Rural WPR (47.54%) was also significantly higher than urban WPR (38.11%). Age-wise participation differed significantly, with the highest WPR among the 35–59 age group (77.09%) and the lowest among those aged 60 years and above (45.70%). However, ST literacy was not significantly related to total ST WPR ($r = .027$, $p = .894$). The findings highlight the need for gender-, age- and location-specific tribal employment policies.

Keywords: Scheduled Tribes; Work Participation Rate; Gender; Rural–Urban Difference; Age; Literacy; Gujarat

1. Introduction

Work is an important part of economic life because it contributes to household income, livelihood security and participation in the local economy. However, the extent of work participation differs across social groups and places. Gender, age, education, residence and the structure of the local economy can all influence whether people participate in economic activity and the type of work available to them.

Scheduled Tribes constitute an important population group in Gujarat and their distribution is uneven across districts. A substantial concentration occurs in the eastern and southern parts of the state, whereas several more urbanized districts have comparatively small ST populations. These differences make a district-level analysis useful because a state average can conceal important local variations.

The Census of India 2011 provides detailed information on ST population, workers, sex, residence, age and educational characteristics. The present study uses Work Participation Rate (WPR) as the principal measure and examines four dimensions: gender, rural–urban residence, selected age groups, and the relationship between ST literacy and ST WPR. The district is treated as the unit of analysis and all 26 Census-2011 districts of Gujarat are included.

The study is descriptive and analytical rather than causal. Its purpose is to identify statistically significant differences and associations in district-level ST work participation and to consider their implications for tribal development and employment policy.

2. Objectives

1. To examine ST work participation in Gujarat at the district level, separately for males and females.

2. To compare ST work participation in rural and urban areas.

3. To study differences in ST work participation across selected age groups.

4. To examine the relationship between district-level ST literacy and ST work participation.

5. To identify major district-level variations and draw relevant policy implications.

3. Hypotheses

H_{01}: “There is no significant difference between male and female ST work participation rates across the districts of Gujarat”.

H_{02}: “There is no significant difference between rural and urban ST work participation rates across the districts of Gujarat”.

H_{03}: “There is no significant difference in ST work participation rates among the selected age groups”.

H_{04}: "There is no significant relationship between district-level ST literacy and ST work participation".

4. Literature Review

At the national level, **Singh and Ojha (2019)** examined the Scheduled Tribe workforce using Census of India 2011 data. Their study considered the tribal workforce across different age categories, including child, regular and elderly workers. The authors observed that a substantial part of the tribal workforce remains engaged in relatively low-paid and marginal forms of employment. The study also shows the importance of age when examining the work participation of Scheduled Tribes. This provides a useful basis for analysing differences in ST work participation across selected age groups in the present study.

Similarly, **Kumar et al. (2019)** studied rural labour employment and livelihood patterns in tribal villages of eastern India. Using panel data from 2010 to 2014, the study examined farm and non-farm employment, gender differences and wage patterns among rural labour households. The findings indicated changes in the composition of employment, with non-farm wage employment becoming increasingly important. The study also reported differences between male and female workers in employment and wages. These findings underline the importance of considering gender and rural employment conditions while analysing tribal work participation.

More recently, **Bhat and Khan (2023)** examined the educational position of Scheduled Tribes using Census data and U-DISE information. Their study considered literacy, enrolment, promotion, retention, dropout and transition indicators. The authors found that Scheduled Tribes continued to remain below the overall population on several educational indicators and also identified regional and gender disparities. The study is relevant to the present research because it demonstrates the continuing importance of education and regional differences in understanding the socio-economic position of Scheduled Tribes.

Overall, the reviewed studies suggest that tribal work participation cannot be understood through a single factor. Gender, age, rural livelihood conditions and educational characteristics may all be associated with the economic participation of Scheduled Tribes. However, there is limited evidence specifically examining district-level differences in ST Work Participation Rate in Gujarat using a common Census 2011 framework. The present study attempts to address this gap by analysing male–female, rural–urban and age-group differences and by examining the relationship between ST literacy and work participation across the 26 Census-2011 districts of Gujarat.

5. Data and Methodology

The study uses secondary data from the Census of India 2011. District-level ST information was compiled from the Census tables relating to ST population, workers, residence, age and educational characteristics. The study covers the 26 districts corresponding to the Census-2011 district framework.

The Census distinguishes between main and marginal workers. For this study, these categories are combined to obtain total workers for the relevant ST population. WPR is calculated as total workers divided by the relevant ST population multiplied by 100. The same approach is used for male, female, rural, urban and age-group rates.

The district is the unit of analysis. For H_{01} and H_{02}, male–female and rural–urban rates are paired within each district. For H_{03}, the three age-group rates are repeated observations for the same districts. H_{04} uses the district-level ST literacy rate and total ST WPR.

6. Variables and Measurement

Table 1. Variables and Measurement

Variable	Measurement
ST WPR	(Main workers + marginal workers) / relevant ST population × 100
Male/Female WPR	Workers of respective sex / ST population of that sex × 100
Rural/Urban WPR	Workers in respective residence category / ST population of that category × 100
Age-group WPR	Workers in age group / ST population in that age group × 100
ST Literacy Rate	ST literates aged 7+ / ST population aged 7+ × 100

Source: Census of India 2011 ST tables; rates calculated from Census counts.

The selected age groups are 15–34 years, 35–59 years and 60 years and above. The 5–14 group is not included in the inferential age comparison.

7. Statistical Methods

Table 2. Statistical Tests Used

Hypothesis	Test	Variables
H_{01}	Paired-samples t-test	Male WPR and Female WPR
H_{02}	Paired-samples t-test	Rural WPR and Urban WPR
H_{03}	Repeated-measures ANOVA	15–34, 35–59 and 60+ WPR
H_{04}	Pearson correlation	ST Literacy and Total ST WPR

The significance level was set at 5 per cent ($\alpha = .05$). For H_{03}, Mauchly's test of sphericity was examined. Because sphericity was violated, the Greenhouse–Geisser correction was used. Three pairwise comparisons were also examined with a Bonferroni-adjusted threshold of .0167.

8. Results

8.1 H_{01}: Gender Difference

Table 3. Male and Female ST WPR: Descriptive Statistics

Measure	Mean (%)	N	SD
Male WPR	55.6536	26	4.13684
Female WPR	34.2985	26	10.44573

Table 4. Paired-Samples t-Test for Gender Difference

Mean Difference	t	df	p-value	Decision
21.35512	11.021	25	< .001	Reject H_{01}

Source: SPSS output, 26 districts.

The mean male WPR was 55.65 per cent, compared with 34.30 per cent for females. The mean difference was 21.36 percentage points. The paired-samples t-test was statistically significant, $t(25) = 11.021$, $p < .001$. H_{01} is therefore rejected. The result indicates a substantial gender difference in ST work participation, with male participation significantly higher than female participation.

8.2 H_{02}: Rural–Urban Difference

Table 5. Rural and Urban ST WPR: Descriptive Statistics

Measure	Mean (%)	N	SD
Rural WPR	47.5391	26	5.54756
Urban WPR	38.1057	26	4.74673

Table 6. Paired-Samples t-Test for Rural–Urban Difference

Mean Difference	t	df	p-value	Decision
9.43342	8.839	25	< .001	Reject H_{02}

Source: SPSS output, 26 districts.

Rural ST WPR averaged 47.54 per cent, while urban ST WPR averaged 38.11 per cent. The difference of 9.43 percentage points was statistically significant, $t(25) = 8.839$, $p < .001$. H_{02} is rejected. The result indicates significantly higher ST work participation in rural than in urban areas in the district-level comparison.

8.3 H_{03}: Age-Group Difference

Table 7. Mean ST WPR across Selected Age Groups

Age group	Mean WPR (%)	SD
15–34	63.7594	9.30250
35–59	77.0916	8.78281
60+	45.6955	12.00596

Table 8. Repeated-Measures ANOVA

Test	F	df	p-value	Partial η^2	Decision
Greenhouse–Geisser	362.571	1.210, 30.239	< .001	.935	Reject H_{03}

Source: SPSS repeated-measures ANOVA output.

Table 9. Pairwise Age-Group Comparisons

Comparison	Mean Difference	t	p-value	Result
15–34 vs 35–59	-13.332	-16.702	< .001	Significant
15–34 vs 60+	18.064	11.529	< .001	Significant
35–59 vs 60+	31.396	31.135	< .001	Significant

Source: SPSS paired comparisons; Bonferroni-adjusted $\alpha = .0167$.

Mauchly's test was significant, $\chi^2(2) = 25.435$, $p < .001$, so the sphericity assumption was violated. The Greenhouse–Geisser corrected ANOVA was significant, $F(1.210, 30.239) = 362.571$, $p < .001$, partial $\eta^2 = .935$. H_{03} is rejected. Pairwise comparisons show that all three age-group differences were significant after Bonferroni adjustment. The mean pattern was 35–59 years (77.09%) > 15–34 years (63.76%) > 60+ years (45.70%).

8.4 H_{04}: ST Literacy and Work Participation

Table 10. Pearson Correlation between ST Literacy and Total ST WPR

Variables	Pearson's r	p-value	N	Decision
ST Literacy – Total ST WPR	.027	.894	26	Fail to Reject H_{04}

Source: SPSS Pearson correlation output, 26 districts.

The Pearson correlation was r = .027 with p = .894. The coefficient is very close to zero and the p-value is substantially above .05. H_{04} is therefore not rejected. The result indicates that no statistically significant linear relationship was found between district-level ST literacy and total ST WPR. This does not mean that education has no influence on individual employment; it only describes the relationship between the two-aggregate district-level measures used here.

8.5 District-Level Evidence

Table 11. District-Level ST WPR and Literacy Measures, Gujarat, 2011

District	Male	Female	Rural	Urban	15–34	35–59	60+	Literacy	Total WPR
Ahmadabad	55.90	22.90	43.75	39.55	52.78	66.45	35.57	58.46	40.34
Amreli	57.50	41.43	55.29	42.87	75.08	80.21	44.94	36.36	49.89
Anand	55.48	28.22	44.08	41.01	55.85	71.45	44.05	56.43	42.23
Banas Kantha	46.74	28.54	38.04	32.58	66.10	77.09	45.54	38.21	37.79
Bharuch	61.56	37.31	50.88	41.06	64.60	79.18	54.49	57.18	49.74
Bhavnagar	54.96	20.95	47.18	33.60	49.68	65.81	31.53	63.15	38.68
Dohad	49.57	45.45	47.84	39.30	76.54	91.30	56.93	42.49	47.52
Gandhinagar	54.90	22.50	43.24	39.21	44.81	66.85	34.54	69.49	39.78
Jamnagar	55.22	28.79	44.33	38.13	66.40	73.27	31.99	45.93	42.36
Junagadh	53.72	23.82	43.09	30.83	53.92	69.19	35.28	56.93	39.13
Kachchh	57.18	28.61	46.32	40.02	66.62	75.39	43.71	43.36	43.73
Kheda	57.23	26.36	43.93	39.44	58.91	70.34	45.99	54.23	42.47
Mahesana	53.64	21.38	40.59	36.91	51.50	65.03	24.54	66.28	38.14

Narmada	57.82	45.98	52.70	35.68	69.09	86.21	63.52	59.49	51.99
Navsari	62.84	42.30	53.29	46.47	63.97	80.58	50.60	66.61	52.57
Panch Mahals	52.99	42.67	48.24	39.08	72.06	86.84	55.83	48.37	47.94
Patan	53.52	20.18	39.19	35.67	50.89	66.07	32.94	58.00	37.31
Porbandar	51.90	22.67	40.12	30.16	57.02	67.30	30.39	46.48	37.76
Rajkot	56.47	28.50	50.27	39.18	63.81	70.48	34.40	46.83	43.06
Sabar Kantha	50.14	42.45	46.75	36.02	69.23	86.30	56.88	52.18	46.31
Surat	62.71	43.93	54.88	47.58	68.29	82.75	55.40	59.30	53.40
Surendranagar	51.49	39.30	46.83	34.39	74.42	80.55	40.43	36.19	45.59
Tapi	63.55	54.71	59.63	42.87	72.04	89.65	64.11	57.80	59.08
The Dangs	53.89	51.20	54.49	27.98	79.11	93.95	68.52	61.02	52.54
Vadodara	59.04	43.35	52.78	37.77	71.65	83.36	57.35	45.92	51.36
Valsad	57.07	38.27	48.30	43.41	63.38	78.77	48.63	57.89	47.66

Source: Census of India 2011 ST data; rates calculated from relevant Census counts.

9. Discussion

The results show that ST work participation in Gujarat has a clear gender dimension. Male participation is substantially higher than female participation and the difference is statistically significant. The size of the gap varies by district, suggesting that local employment structures and social conditions may influence the opportunities available to women.

The rural–urban result is also clear. Rural WPR is significantly higher than urban WPR. This pattern is consistent with the importance of agriculture, allied activities and other livelihood work in rural tribal areas. However, higher participation should not be interpreted as evidence of better employment because WPR does not measure wages, security, working conditions or underemployment.

The age results show a strong life-cycle pattern. Participation is highest among 35–59-year-olds, followed by 15–34-year-olds, while the 60+ group has the lowest rate. The significant pairwise differences reinforce the view that age is an important dimension of ST work participation.

The literacy result is more cautious. The near-zero and insignificant correlation indicates that district differences in ST literacy do not, by themselves, explain differences in total ST WPR. Employment

opportunities, occupational structure, migration, household livelihood strategies and the nature of available work may matter alongside education.

Overall, the findings suggest that tribal employment policy in Gujarat should be differentiated by gender, residence and age rather than relying on a single state-wide approach.

10. Major Findings

1. Male ST WPR averaged 55.65%, compared with 34.30% for females; the gender difference was significant.
2. Rural ST WPR averaged 47.54%, compared with 38.11% in urban areas; the difference was significant.
3. Age-group WPR was highest for 35–59 years (77.09%), followed by 15–34 years (63.76%), and lowest for 60+ years (45.70%).
4. All three selected age-group pairs differed significantly after Bonferroni adjustment.
5. ST literacy and total ST WPR showed a very weak, statistically insignificant correlation ($r = .027$, $p = .894$).
6. District-level variation is substantial, indicating the importance of locally differentiated employment planning.

11. Policy Implications

1. Expand women-oriented livelihood and employment support, including skills, self-employment, producer groups and locally accessible work opportunities.
2. Improve the quality and productivity of rural employment through skill development, market access and pathways from insecure casual work to more stable livelihoods.
3. Use age-specific strategies: strengthen skills and employment transitions for younger ST workers while giving appropriate livelihood and social-protection attention to older persons.
4. Link education with employment pathways through vocational training, apprenticeships, career guidance and access to non-farm opportunities.
5. Adopt district-specific tribal employment planning because local economic structures and participation levels differ considerably.
6. Interpret higher WPR alongside employment quality indicators; participation alone should not be treated as a complete measure of economic well-being.

12. Conclusion

This study examined ST work participation in Gujarat using district-level Census 2011 data for 26 districts. The analysis tested differences by gender, residence and age, and examined the relationship between ST literacy and work participation. The results provide a consistent picture of substantial variation in participation across social and demographic dimensions.

Male ST work participation was significantly higher than female participation, while rural participation was significantly higher than urban participation. The age analysis showed that 35–59-year-olds had the highest participation and persons aged 60 years and above had the lowest. In contrast, district-level ST literacy was not significantly related to total ST WPR.

These results suggest that tribal employment policy should focus on the groups and places where participation gaps are most evident. At the same time, the study is based on aggregate secondary data and therefore cannot establish individual-level causation or assess employment quality. Future studies could combine Census data with household surveys, wage information, occupation, migration and programme-level evidence.

13. References

1. Bhat, Z. A., & Khan, M. A. (2023). Education Scenario of Scheduled Tribes: Evidences from Census (2011) and Unified District Information System for Education (U-DISE) 2017–2018 Data. Contemporary Voice of Dalit.
2. Government of Gujarat, Tribal Development Department. Census 2011 materials on Scheduled Tribe population and literacy indicators.
3. Kumar, B. L. (2004). Tribal Education in Gujarat: An Evaluation of Educational Incentive Schemes. Working Paper No. 145. Gujarat Institute of Development Research, Ahmedabad.
4. Office of the Registrar General & Census Commissioner, India. (2011). Census of India 2011: Scheduled Tribe Table B-01 (ST), Gujarat.
5. Office of the Registrar General & Census Commissioner, India. (2011). Census of India 2011: Scheduled Tribe Table B-03 (ST), Gujarat.
6. Office of the Registrar General & Census Commissioner, India. (2011). Census of India 2011: Scheduled Tribe Table C-08 (ST), Gujarat.
7. Office of the Registrar General & Census Commissioner, India. (2011). Census of India 2011: A-11 Appendix—District-wise Scheduled Tribe Population, Gujarat.