

Forest and Tribal Population of India – Census 2011

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ABSTRACT

Tribal people and forest are preassembly related. This communication is aiming to find any relationship between forest area and tribal population. There is a moderate correlation between forest area and number of tribal population.

Keywords: tribal population, forest area, correlation

INTRODUCTION

Tribal people and forests share a vital, symbiotic relationship. Forests are the lifeblood, providing food, fuel, medicine (NTFPs), and livelihood for millions of tribal, while tribal possess deep traditional knowledge essential for sustainable forest management, acting as stewards who conserve biodiversity through culturally embedded practices, ensuring forest health for future generations. Forests provide non-timber forest products (NTFPs) like honey, roots, fruits, and medicinal plants, along with fuel, fodder, and materials for shelter, forming the basis of their economy. Forests are integral to tribal identity, culture, and spiritual beliefs, influencing their social systems and daily life. They rely on forest resources for diverse food sources, including wild edibles and animal products. Tribal hold vast knowledge of forest biodiversity, medicinal uses of plants, and sustainable harvesting techniques, passed down generations. Their traditional practices (like tree worship, selective collection) ensure minimal environmental damage and promote conservation. Their close connection fosters a harmonious, non-destructive use of resources, crucial for forest health and regeneration.

Fourth most populous state of India is West Bengal. It lies in the eastern part. There are international borders with Bangladesh, Nepal and Bhutan. Area is 88,752 km² which is 2.7% of the total country area. The famous delta, Sundarbans lies in the southern part of the state. The population density is 1028 persons per km². The forest area is 12,995 km² which is about 14.6% of the state geographical area.

As per 2011 Census, there are 52,96,953 tribal populations (Male-26,49,974(50.03%) and Female-26,46,979) with average household size 5 and Gender Ratio 1.001. The decadal growth rate of the tribal population during 2001-2011 is 20.2 % which is higher than the state's decadal growth rate (13.9%). The tribal population of West Bengal forms 5.08% of state's total population and 5.1% of India's tribal population.

Research papers on West Bengal's tribal population focus on their significant, yet unevenly distributed, presence (around 5.08% of state population), highlighting socio-economic disparities, educational backwardness (especially for women), unique cultural practices (Santals, Mundas, Bhumij), and health issues, with studies often using Census data (2011) to analyze concentration, literacy, and gender gaps, advocating for targeted policies. Key themes include literacy challenges, health burdens, and development indices, revealing deep-rooted issues despite rich cultural heritage. Key themes include forest dependency indices, impacts of legislation (colonial/modern) affecting rights and resource access, land alienation issues, and the influence of factors like education, social security, and globalization on shifting patterns, with research often focusing on communities like Santal, Munda, Bhumij, Lodha, and Sabar.

DATA

Census 2011 data includes age, sex, marital status, occupation, work participation, education etc. of population. In addition, information on community (caste) is also included in the census. The basic data for the present work has been drawn from the census of India 2011.

Forest Survey of India (FSI) is to conduct survey and assess forest resources in the country. In the present documentation, forest data from surveys conducted by FSI during the year 2009-2011 are used (State of the Forest Report, FSI 2011). We are considering the variables like Total population, Total tribal population, Literacy rate (7+ population), Female literacy rate, Very Dense Forest, Total Forest

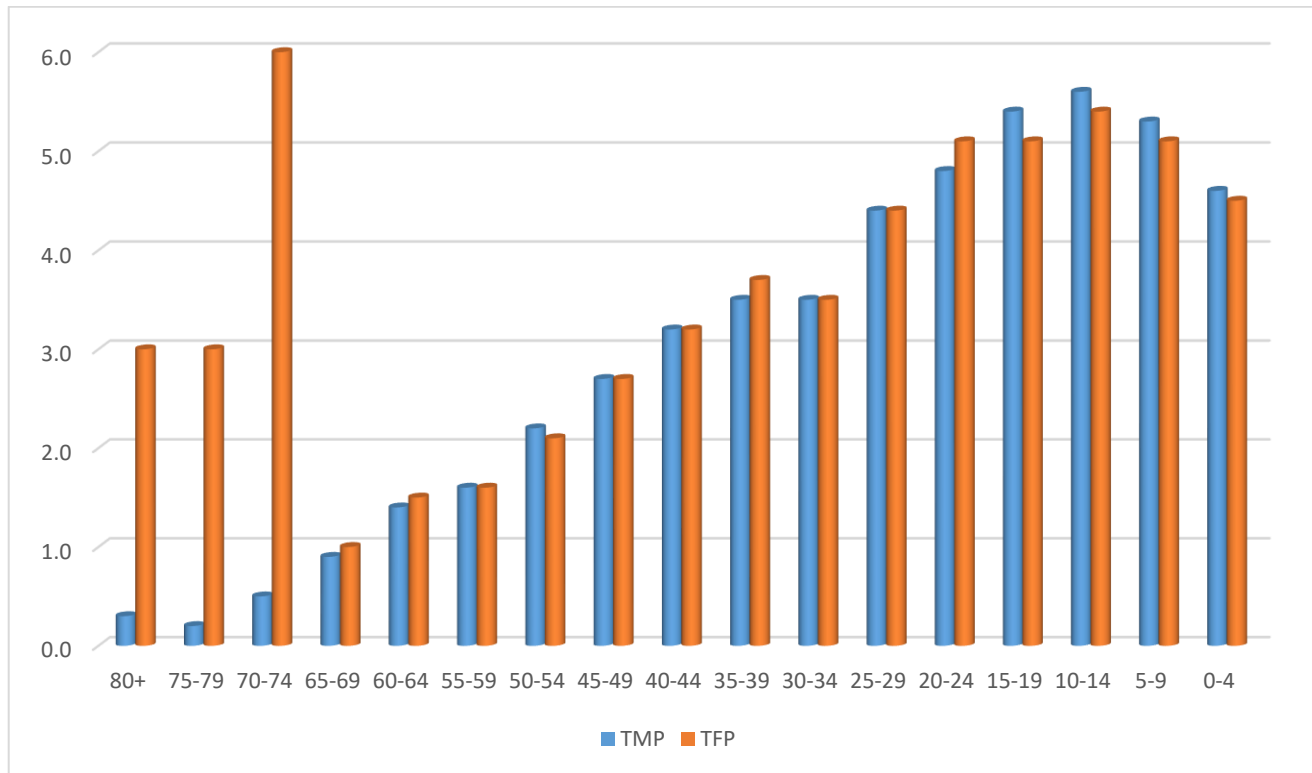
RESULTS

Table – 1: showing district-wise Area, Forest Area and Tribal population

Name of District	Geographical Area (GA)	Total Forest	Total tribal population
Kolkata	185	0	10684
Dakshin Dinajpur	2219	15	275366
Hugli	3149	61	229243
Murshidabad	5324	107	91035
N24 Parganas	4094	89	264597
Birbhum	4545	105	242484
Koch Bihar	3387	94	18125
Nadia	3927	129	140700
Barddhaman	7024	261	489447
Maldah	3733	164	313984
Uttar Dinajpur	3140	176	162816
Haora	1467	146	15094
Puruliya	6259	797	540652
Bankura	6882	1056	368690
Midnapore	14081	2596	907967
S24 Parganas	9960	2406	96976
Jalpaiguri	6227	2504	731704
Darjiling	3149	2289	397389

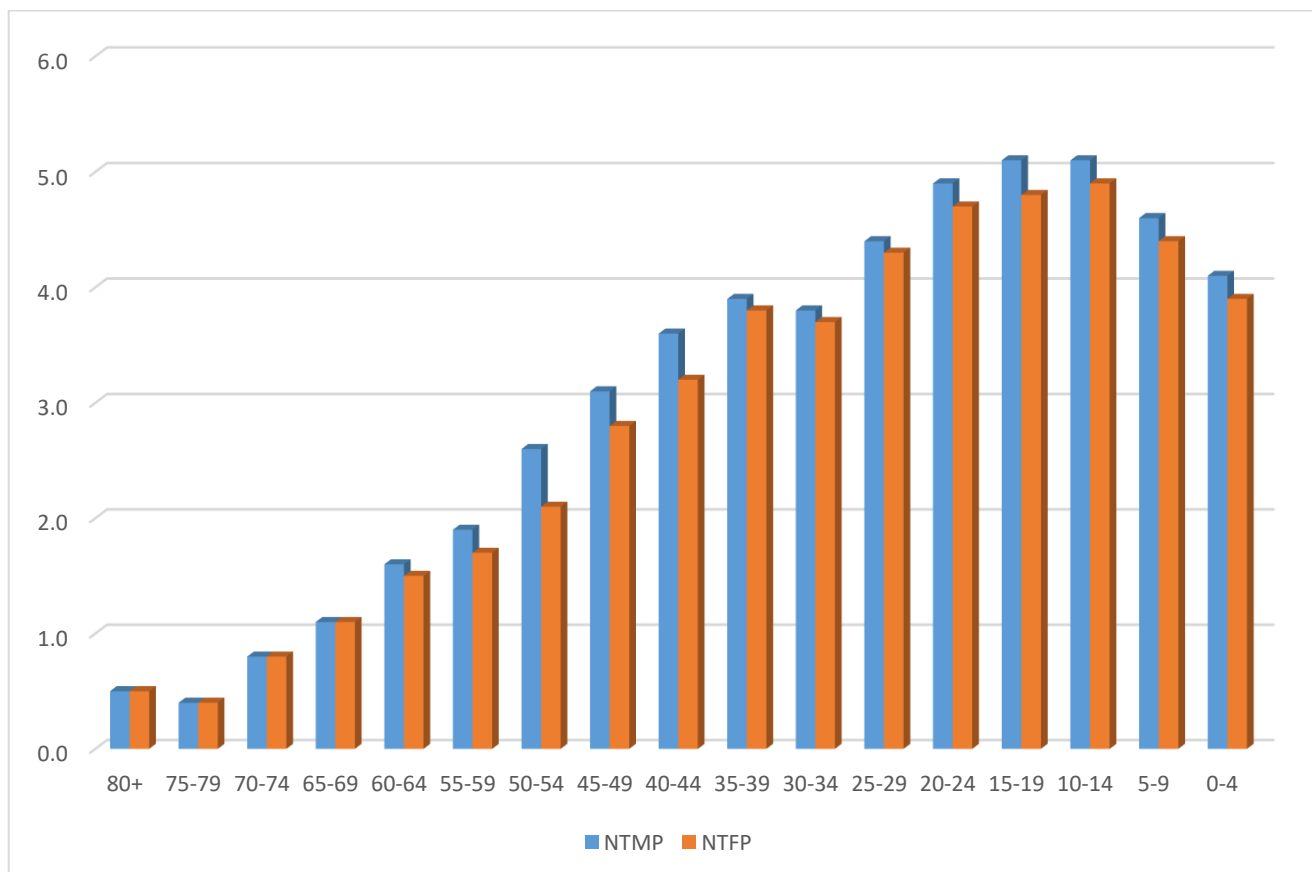
The dependency ration in tribal population is 59.49, Ageing Index is 22.29 and inverse dependency ration is 168.09. Therefore, in tribal population, there are about 59 dependents out of 100 earners. Only 22% are elderly people as compared to young people among tribal population.

Figure – 1: showing tribal male and female population percentage



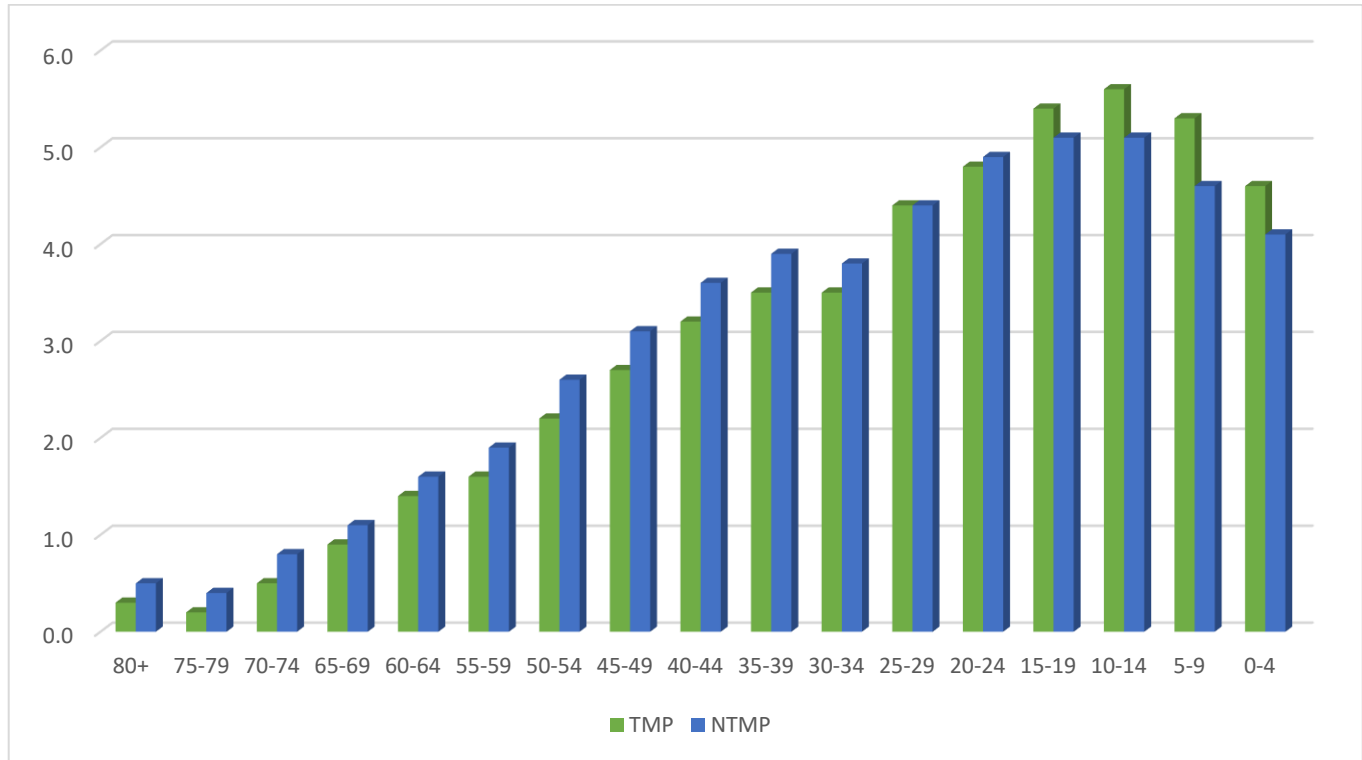
Tribal Male Percentages(TMPs) are less or equal for age groups from 80+ and 55-59. For other age groups it is more except age group 35-39.

Figure -2: showing non-tribal male and female population percentage



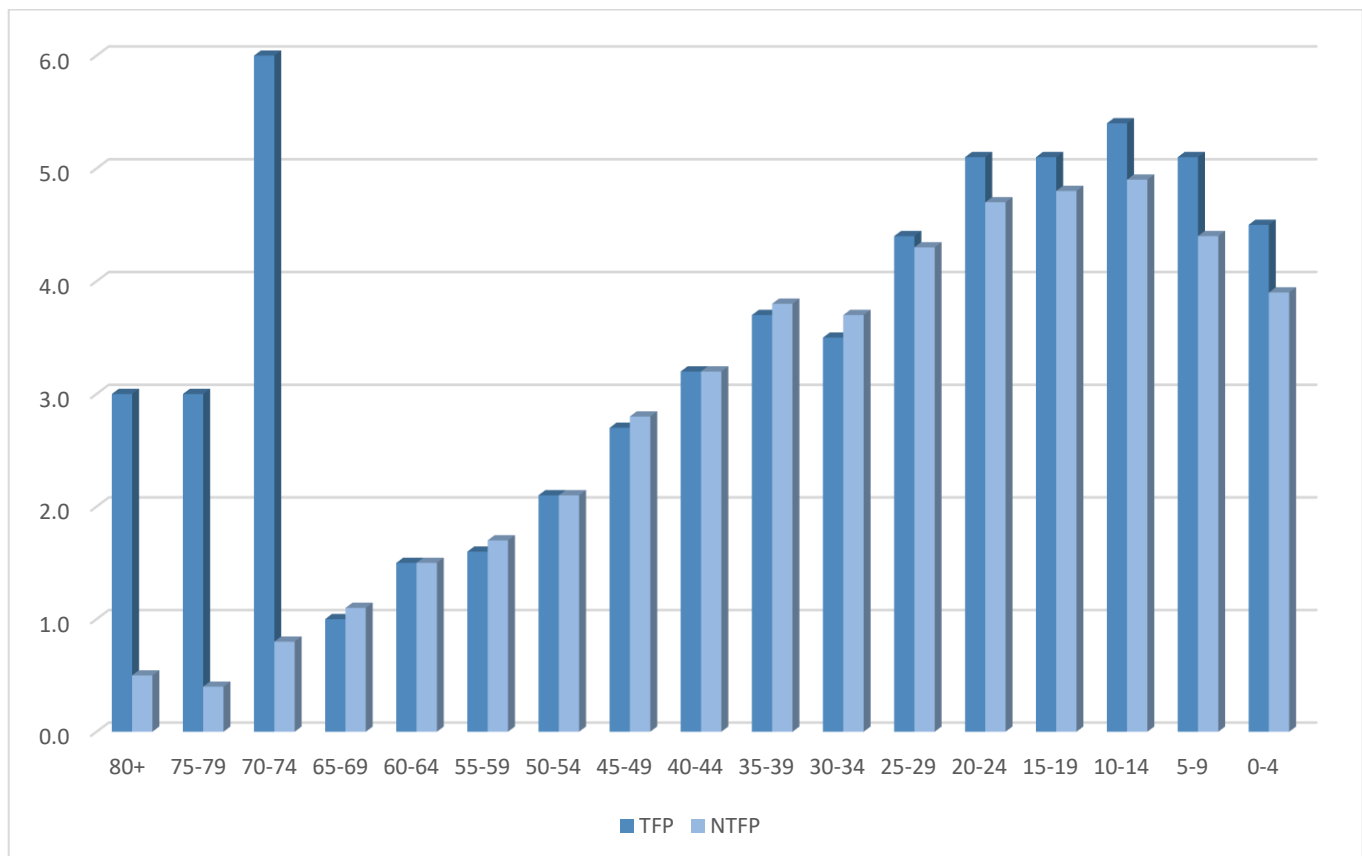
Non-Tribal female percentages(NTFPs) are less or equal for all age groups.

Figure -3: showing tribal and non-tribal male population percentage



Tribal male percentages are less as compared to Non-Tribal male percentages between age groups 20-24 and 80+. However more for other age groups.

Figure -4: showing tribal and non-tribal female population percentage



Tribal female percentages are more or equal as compared to Non-Tribal female percentages for all age groups except age groups 65-69, 55-59, 45-49, 35-39 and 30-34.

Table -2: Distribution of Forest Area and Tribal Population percentages over the districts of West Bengal

District	Percentage of Forest Area	% of Tribal population	Gap / Difference	Rank w.r.t Forest Area	Rank w.r.t Tribal population
Bankura	15.34	6.96	8.38	5	13
Bardhaman	3.72	9.24	-5.52	10	15
Birbhum	2.31	4.58	-2.27	13	9
Dakshin Dinajpur	0.68	5.20	-4.52	17	11
Darjiling	72.69	7.50	65.19	1	14
Haora	9.95	0.28	9.67	7	2
Hugli	1.94	4.33	-2.39	16	8
Jalpaiguri	40.21	13.81	26.4	2	17
Koch Bihar	2.78	0.34	2.44	12	3
Kolkata	0.00	0.20	-0.2	18	1
Maldah	4.39	5.93	-1.54	9	12
Murshidabad	2.01	1.72	0.29	15	4
N24 Parganas	2.17	5.00	-2.83	14	10
Nadia	3.28	2.66	0.62	11	6
Paschim Medinipur	18.44	16.61	1.83	4	18
Puruliya	12.73	10.21	2.52	6	16
S24 Parganas	24.16	1.83	22.33	3	5
Uttar Dinajpur	5.61	3.07	2.54	8	7

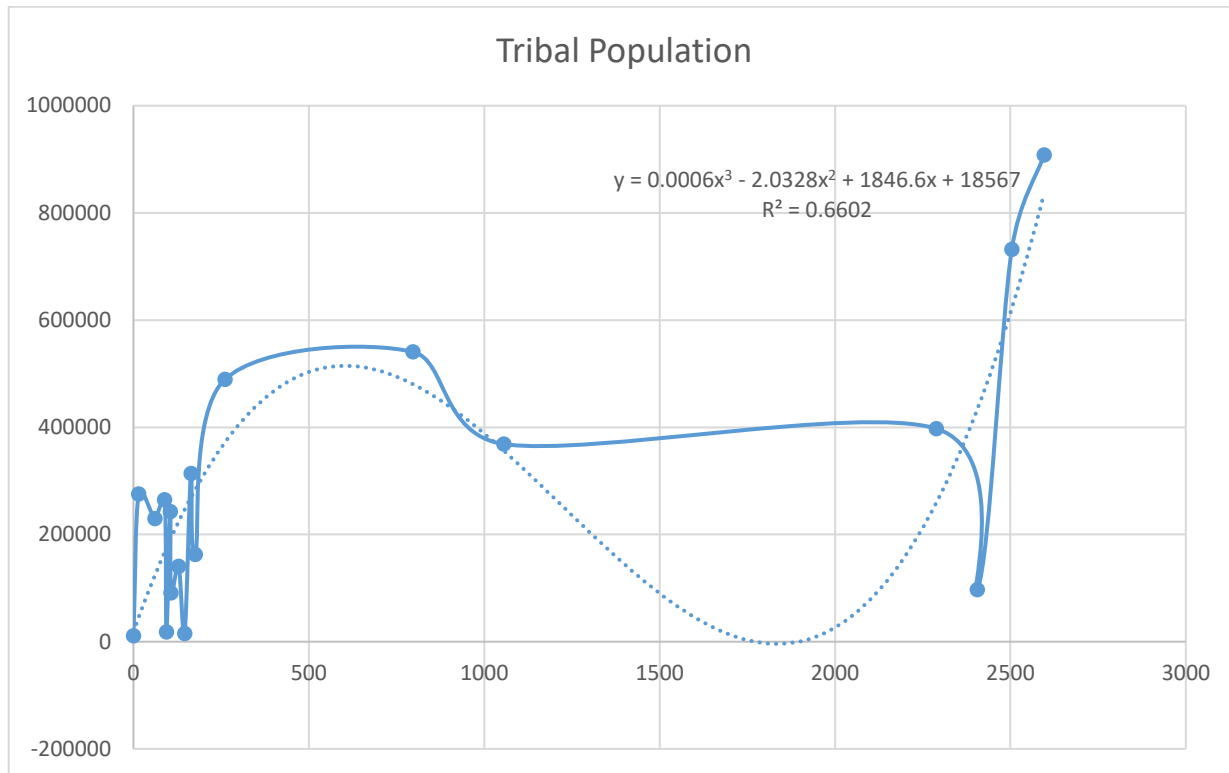
The correlation coefficient between % of forest area and % of tribal population is -0.513. Thus, total forest area increases tribal population decreases. The large % of forest area is in the district of Darjeeling, then in Jalpaiguri, S24 Parganas, Paschim Midnapore, so on. The large % of tribal population is in the district of Paschim Midnapore, Jalpaiguri, Purulia, so on.

Table -3: Correlation Matrix of the variables

R-Matrix	Total population	Total tribal population	Literacy rate (7+ population)	Female literacy rate	Very Dense Forest	Total Forest
Total population	1.000	-0.049	0.012	0.015	0.074	0.001
Total tribal population	-0.049	1.000	-0.212	-0.305	0.280	0.629
Literacy rate (7+ population)	0.012	-0.212	1.000	0.984	0.196	0.141
Female literacy rate	0.015	-0.305	0.984	1.000	0.167	0.076
Very Dense Forest	0.074	0.280	0.196	0.167	1.000	0.878
Total Forest	0.001	0.629	0.141	0.076	0.878	1.000

Note: Correlation coefficients are not logically significant.

Figure -5: showing regression of forest area(x) and tribal population(y)



Note: moderately fitted polynomial regression with $R^2 = 0.6602$.

Remarks

The study is a secondary data analysis approach. The aim to explore any relation between tribal population and forest area, etc. Apparently, there are very feeble relationship. The other factors like social reach, forest richness, distance from nearby highway or town may be considered. The intense survey or micro-study may be next approach.

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