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## UNDERSTANDING SPATIO-TEMPORAL DYNAMICS OF SCHEDULED CASTE POPULATION IN EASTCENTRAL RAJMAHAL HIGHLANDS, JHARKHAND

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### ABSTRACT:

The study reveals that the population of Scheduled Castes in the Eastcentral Rajmahal Highlands is gradually increasing. The total population of the study area is 4,40,911 according to the 2011 Census. During the last five decades (1971-2011), population growth rate has increased 18.90%. The increase in population in the study area is owing to the decline in the death rate. The study area shows the change in population density from 206 persons per sq. k.m. and 381 persons per sq. k.m. in 1971 and 2011 respectively. The majority of populations are settled in rural areas. Only 10.79% of the population is urban. It represents an unbalanced rural-urban population ratio, and it also shows that the rural economy, particularly agriculture, is dominant in the study area. The purpose of this paper is to analyse the existing pattern as well as spatial and temporal variations of the Scheduled Castes population in the study area.

**KEYWORDS:** *Agriculture, Density, Growth, Population, Scheduled Castes, Temporal variations.*

### INTRODUCTION

The region lies within the geographic coordinates ranging approximately from 23°55'15" N to 24°10'15" N latitude and 86°56'00" E to 87°30'00" E longitude, situating it within the transitional zone between the Chotanagpur Plateau covering three blocks of Dumka district viz; Dumka, Raniswar and Shikaripara in the State of Jharkhand, India (Fig.1). Occupying an area of 1164.6 sq. kilometres, the study area comprises the entire portion of Dumka,

Ranishwar and Shikaripara administrative blocks of Dumka district of Jharkhand and lies in the Eastcentral Rajmahal highlands. It includes 753 villages as well as one municipal area of Dumka Town. The study area is mainly characterised by undulating and rugged terrains dotted with residual hills and hillocks. Therefore, the area is one of the backward regions of the State of Jharkhand.

The present discussion on the existing pattern as well as spatial and temporal variations of Scheduled Castes population in the study area. The Eastcentral Rajmahal Highlands has a total population of 4,40,911 according to 2011 Census having an average density of 381 persons per sq. km and sex ratio is 975. Only 6.38% of S.C. population, whereas 44.47% of S.T. population (2011 Census). Thus from 1971 to 2011 there has been net increase of 1.26% of S.C. population and net decrease of 6.30% of S.T. population in the study area. The study area proves the change in sex ratio from 950 and 975 in 1971 and 2011 respectively. The study area has an average literacy rate of 55.96%. From 1971 to 2011 there has been total increase of 35.15% of literate population in the study area. Occupational structure of the area is dominated by caste phenomena and the occupational structure of the study area has been categorized into two broad groups: i) Agricultural Workers and ii) Non-Agricultural Workers. Agriculture related involvement of workers is dominant in the study area. Since 1971 to 2011 there has been net decrease of 11.11% of agricultural workers and net increase of 17.18 % of non-agricultural workers in the study area. This decreasing trend of agricultural workers shows that the low intensity of agricultural activity of the study area. The most important objectives are as follows: –

- To study the growth and distribution of S.C. Population.
- To analyze spatio-temporal patterns of S.C. Population.
- To identify the block-wise variation of S.C. Population.
- To find out their characteristics and distribution in detailed.

## **MATERIALS AND METHODS**

Georeferencing and mosaicking all the three C.D. block maps (Dumka, Ranishwar and Shikaripara) have been done. For the analysis of S.C. population and their socio-economic conditions, Census data from 1971 to 2011 have been tabulated, calculated and classified. It covers the portions of seven 1:50,000 topographical maps, 72P/3, 4, 7, 8, 11, 12 and 73M/5 having the maximum area in 72P/8 and 72P/12. A series of maps and diagrams (Figs. 1 to 5) on S.C. population has been prepared for the analysis and visual expressions of the entire

study area. Total study area has been digitized and map presentations through 21<sup>st</sup> Century GIS Professional 2012 software. S.C. population map has been prepared on the basis of the extracted data from topographical sheets and percentage frequency histogram has been drawn.

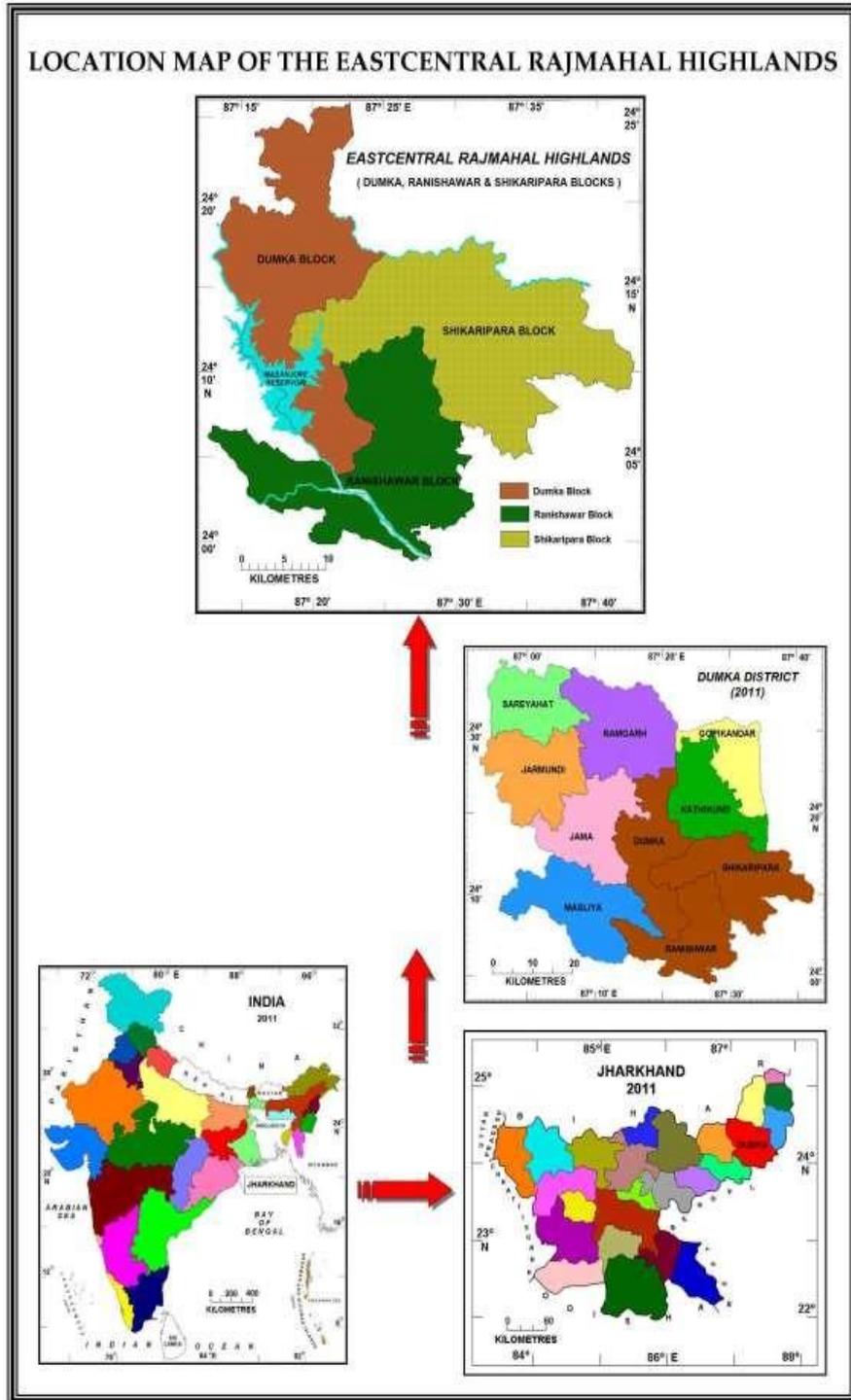


Fig. 1.

**RESULTS AND DISCUSSION**

The Eastcentral Rajmahal Highlands having total S.C. population is 28314 according to 2011 Census. The distributions of S.C. population are uneven. Some villages having highest concentration of population as well as some villages showing lowest concentration of S.C population. The study area shows the change in S.C. population from 12307 and 28314 in 1971 and 2011 respectively. The S.C. population and block-wise rate of change during 1971 to 2011 of the study area are given in Table 1 and Fig. 2.

**1.1.Temporal Variation of Scheduled Castes (SC) Population**

The study area shows the change in S.C. population from 5.12 % and 6.38 % in 1971 and 2011 respectively. From 1971 to 2011 there was 1.60% increase of S.C. population in Dumka block; whereas in these periods, increasing trend has been identified with 0.87% increase in Ranishwar block and 1.01% increase in Shikaripara block. Thus from 1971 to 2011 there has been net increase of 1.26% of S.C. population in the study area. The percentage of S.C. population and block-wise rate of change during 1971 to 2011 of the study area are given in Table 1 and Fig. 2.

**Table 1: Block-wise Scheduled Castes Population 1971 – 2011.**

Name of the Blocks	1971			2011			1971-2011
	Total Population	S.C. Population	% to Total Population	Total Population	S.C. Population	% to Total Population	Rate of Change (%)
Dumka	100256	5755	5.74	210785	15475	7.34	<b>1.60</b>
Ranishwar	65017	4436	6.82	101667	7817	7.69	<b>0.87</b>
Shikaripara	75171	2116	2.81	131464	5022	3.82	<b>1.01</b>
<b>Total</b>	<b>240444</b>	<b>12307</b>	<b>5.12</b>	<b>443916</b>	<b>28314</b>	<b>6.38</b>	<b>1.26</b>

**Source: Data obtained from Santal Parganas & Dumka District Census (1971 to 2011) and compiled by the researcher**

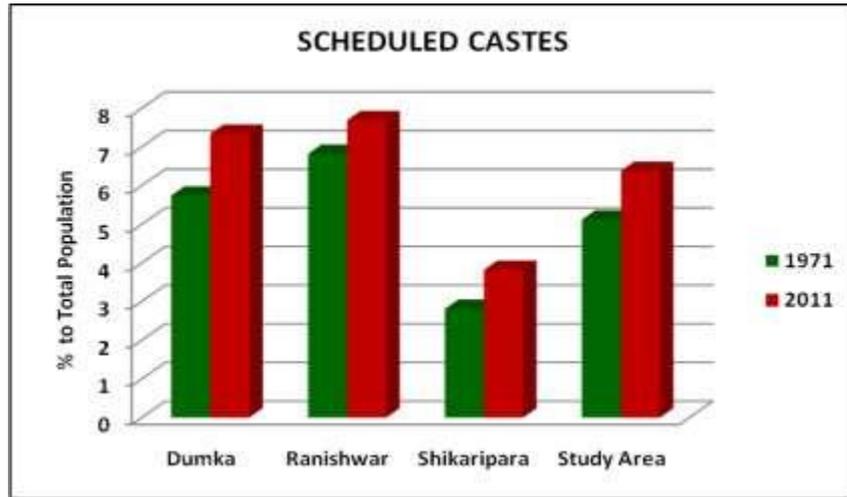


Fig. 2

Source: Diagram prepared by the researcher on the basis of tabulated data

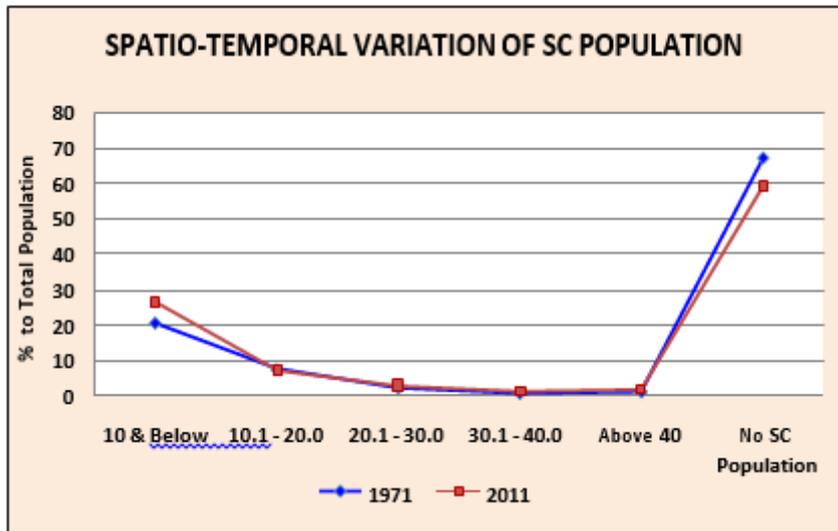


Fig. 3

Source: Diagram prepared by the researcher on the basis of tabulated data

Table 2: Category-wise number of villages with percentage of S.C. population, 1971.

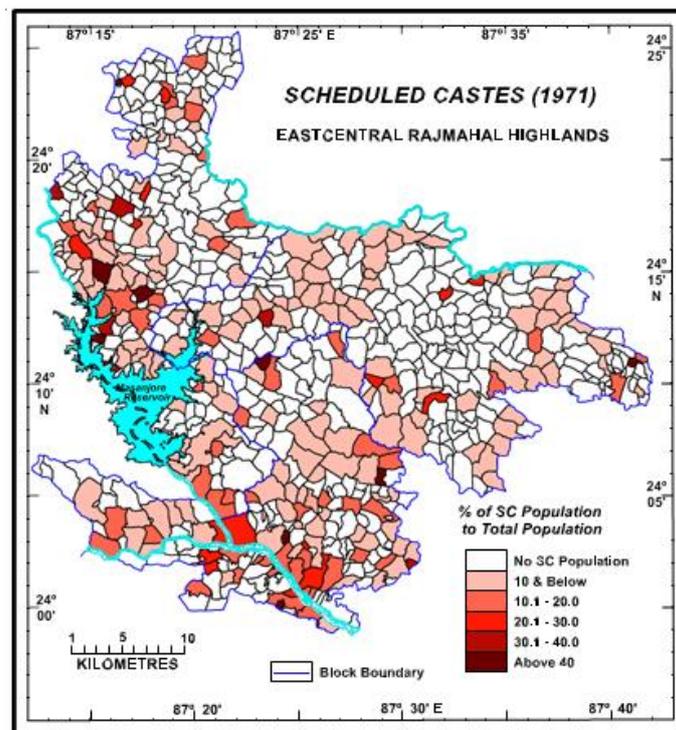
Percentage Categories	No. of Villages Within Each Blocks			Total No. of Villages	Percentage to Total
	DUMKA	RANISHWAR	SHIKARIPARA		
10 & Below (Very Low)	47	43	61	151	20.71
10.1 - 20.0 ( Low)	19	30	6	55	7.55
20.1 - 30.05 (Medium)	5	8	4	17	2.33
30.1 - 40.0 (High)	4	1	1	6	0.82

Above 40 (Very High)	4	4	1	9	1.24
No SC Population	182	122	187	491	67.35
<b>TOTAL</b>	<b>261</b>	<b>208</b>	<b>260</b>	<b>729</b>	<b>100</b>

**Table 3: Category-wise number of villages with percentage of S.C. population, 2011.**

Percentage Categories	No. of Villages Within Each Blocks			Total No. of Villages	Percentage to Total
	DUMKARANISHWAR	SHIKARIPARA			
10 & Below (Very Low)	65	53	76	194	26.61
10.1 - 20.0 ( Low)	22	23	9	54	7.41
20.1 - 30.0 (Medium)	7	9	7	23	3.15
30.1 - 40.0 (High)	5	5	1	11	1.51
Above 40 (Very High)	7	7	1	15	2.06
No SC Population	155	111	166	432	59.26
<b>TOTAL</b>	<b>261</b>	<b>208</b>	<b>260</b>	<b>729</b>	<b>100</b>

Source: Data obtained from Santal Parganas & Dumka District Census (1971 & 2011) and compiled by the researcher



**Fig. 4**

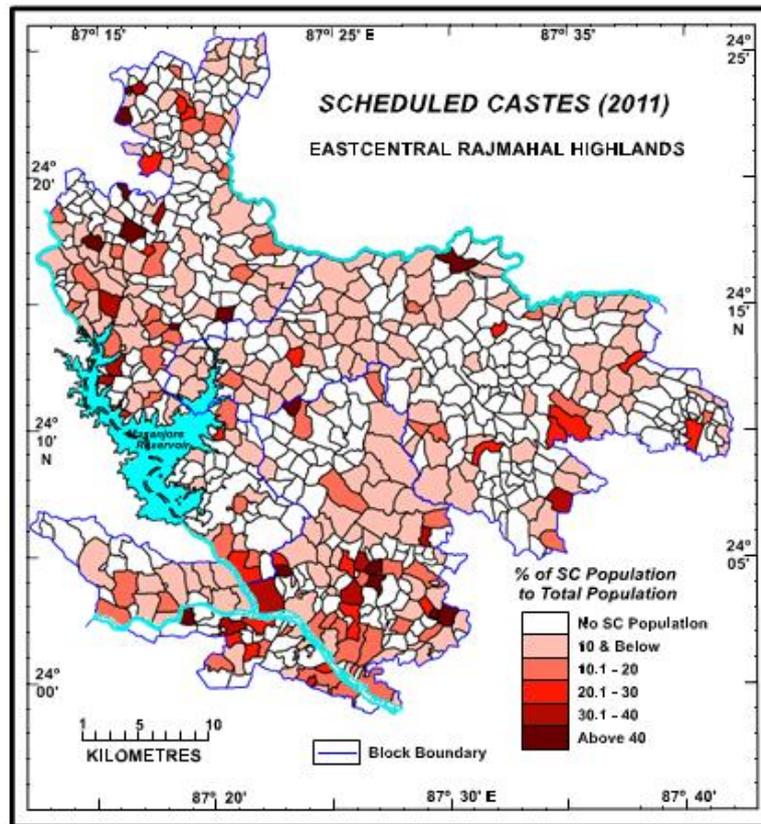


Fig. 5

**Source: Data obtained from Santal Parganas & Dumka District Census (1971 & 2011) and maps prepared by the researcher**

### 1.2. Spatial Variation of Scheduled Castes (SC) Population

During 1971, S.C. population was only 5.12 %. The regional distribution has been analysed (Table 2). Table 2 and Figs. 3, 4 show that in respect of total block population, S.C. population is highest in Ranishwar block (6.82%) followed by Dumka block (5.74 %) and Shikaripara block (2.81%). Out of 729 villages, only 151 villages (20.71%) fall under very low (10 and below) and 55 villages (7.55%) have low (10.1 – 20.0) S.C. population. These villages are scattered in the north-eastern, eastern, south-eastern and western part of the study area. Only 9 villages (1.28 %) experience above 40 percent S.C. population, are concentrated mainly in the Pandarjori (Thana No. 12), Beharabank (13), Agar (3) *etc.*

During 2011, in all the villages there were some proportions of S.C. population. The S.C. population of the study area increase from 5.12 % to 6.38 % S.C. population in the year 2011. Table 3 and Figs. 3, 5 show that in respect of total block population, S.C. population is highest in Ranishwar block (7.69%) followed by Dumka block (7.34%) and Shikaripara block (3.82%). Out of 729 villages, only 194 villages (26.61 %) fall under very low (10 and

below) and 54 villages (7.41 %) have low (10.1 – 20.0) S.C. population. These villages are mainly scattered in the north- eastern, eastern, south-eastern, southern and western part of the study area. Only 15 villages (2.06 %) experience above 40 % S.C. population, are concentrated in Nakti (19), Netur Pahari (1), Banbari (6), Pakuria (26), Gandharabpur (13) etc. The village-wise spatio-temporal variation of S.C. population has also been analysed.

**1.3. Changes in Scheduled Castes (SC) Population from 1971 to 2011**

The calculation of village-wise population data (729 villages) is reflected and summarised in Tables 2, 3 and 4. The study area, Eastcentral Rajmahal Highlands shows an overall increase (1.26 %) in

S.C. population during a period of 50 years. If we analyse the village-wise data, we see that in every block, there has been both increase and decrease in S.C. population. By comparing various columns of Table 4, the pattern of changes from 1971 to 2011 can be easily understood. The S.C. population increased in 203 villages (Dumka 74, Ranishwar 62 and Shikaripara 67 villages) whereas the decrease was noticed in 121 villages (Dumka 41, Ranishwar 44 and Shikaripara 36 villages) and out of 729 villages 405 villages represent no change of S.C. population.

**Table 4: Changes in scheduled castes 1971 to 2011.**

Scheduled Castes	No. of Villages Within Each Blocks			Total No. of Villages	Percentage to Total
	DUMKA	RANISHWAR	SHIKARIPARA		
INCREASE (+)	74	62	67	203	27.85
DECREASE (-)	41	44	36	121	16.60
NO CHANGE	146	102	157	405	55.55
<b>Total No. of Villages</b>	<b>261</b>	<b>208</b>	<b>260</b>	<b>729</b>	<b>100</b>

Source: Data obtained from Santal Parganas & Dumka District Census (1971 & 2011) and compiled by the researcher

**CONCLUSION:**

From the above discussion it is summarized that the temporal growth of Scheduled Castes population is increasing. These may be summarised as follows:

1. The study reveals that population in the Eastcentral Rajmahal Highlands is gradually increasing. Total population of the study area is 4,40,911 according to 2011 Census.
2. Maximum populations are settled in the rural areas. Only 10.79 % (47,584) of the

population are urban. It represents an unbalanced rural-urban population ratio.

3. The study area proves the change in sex ratio from 950 and 975 in 1971 and 2011 respectively.
4. From 1971 to 2011 there was 1.60% increase of S.C. population in Dumka block; whereas 0.87% increase in Ranishwar block and 1.01% increase in Shikaripara block. Finally there has been net increase of 1.26% of S.C. population in the study area.
5. During 1971, S.C. population is highest in Ranishwar block (6.82%) followed by Dumka block (5.74 %) and Shikaripara block (2.81%). Out of 729 villages, only 151 villages (20.71%) fall under very low (10 and below) and 55 villages (7.55%) have low (10.1 – 20.0)
6. S.C. population. Only 9 villages (1.28 %) experience above 40 percent S.C. population.
7. During 2011, S.C. population is highest in Ranishwar block (7.69%) followed by Dumka block (7.34%) and Shikaripara block (3.82%). Out of 729 villages, only 194 villages (26.61
8. %) fall under very low (10 and below) and 54 villages (7.41 %) have low (10.1 – 20.0) S.C. population. Only 15 villages (2.06 %) experience above 40 % S.C. population.
9. The study area shows an overall increase (1.26 %) in S.C. population during a period of 50 years. The S.C. population increased in 203 villages (Dumka 74, Ranishwar 62 and Shikaripara 67 villages) whereas the decrease was noticed in 121 villages (Dumka 41, Ranishwar 44 and Shikaripara 36 villages) and out of 729 villages 405 villages represent no change of S.C. population.
10. Because of population is growing at faster rate and the economic opportunities of the study area do not developed with the population growth.

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