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Identification of Numerical Dominance of Social Group Using Ternary Diagram

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ABSTRACT

The paper is an exercise to objectively ascertain the numerical dominance of social group of selected villages of Labpur C.D. Block of Birbhum District, West Bengal using Ternary Diagram. The method applied here can be adopted for similar exercises on spatial analysis of any other parameters in other areas. It can also be used to identify target of beneficiaries under different policy programmes.

1. Introduction

The article represents a method to objectively ascertain the numerical dominance of social group of selected villages of Labpur C.D. Block of Birbhum District, West Bengal using Ternary Diagram.

2. Objective

The study aims to find out the numerical dominance of social group of selected villages of the area under study.

3. Study Area

The area under study is an administrative unit i.e. Labpur C. D. Block of Birbhum District, West Bengal, India (Map 1). Selected villages of the C. D. Block have been taken into consideration (Table 3). An administrative unit is chosen because of availability and compatibility of Census data.

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4. Method

A combinational analysis has been used to determine numerical dominance of social group to total population in selected villages of the C. D. Block.
Simple random sampling has been used in the study. 54 villages out of the total 161 villages of the C. D. Block have been selected for ternary diagram. The justification of the selection of 54 villages as true representative of C.D. Block is given in the table 1.
It is evident from the table 1 that the mean and standard deviation of total number of observation i.e. 161 and selected sample size i.e. 54 are essentially coincident, thereby justifying their selection as true representative of the study area.

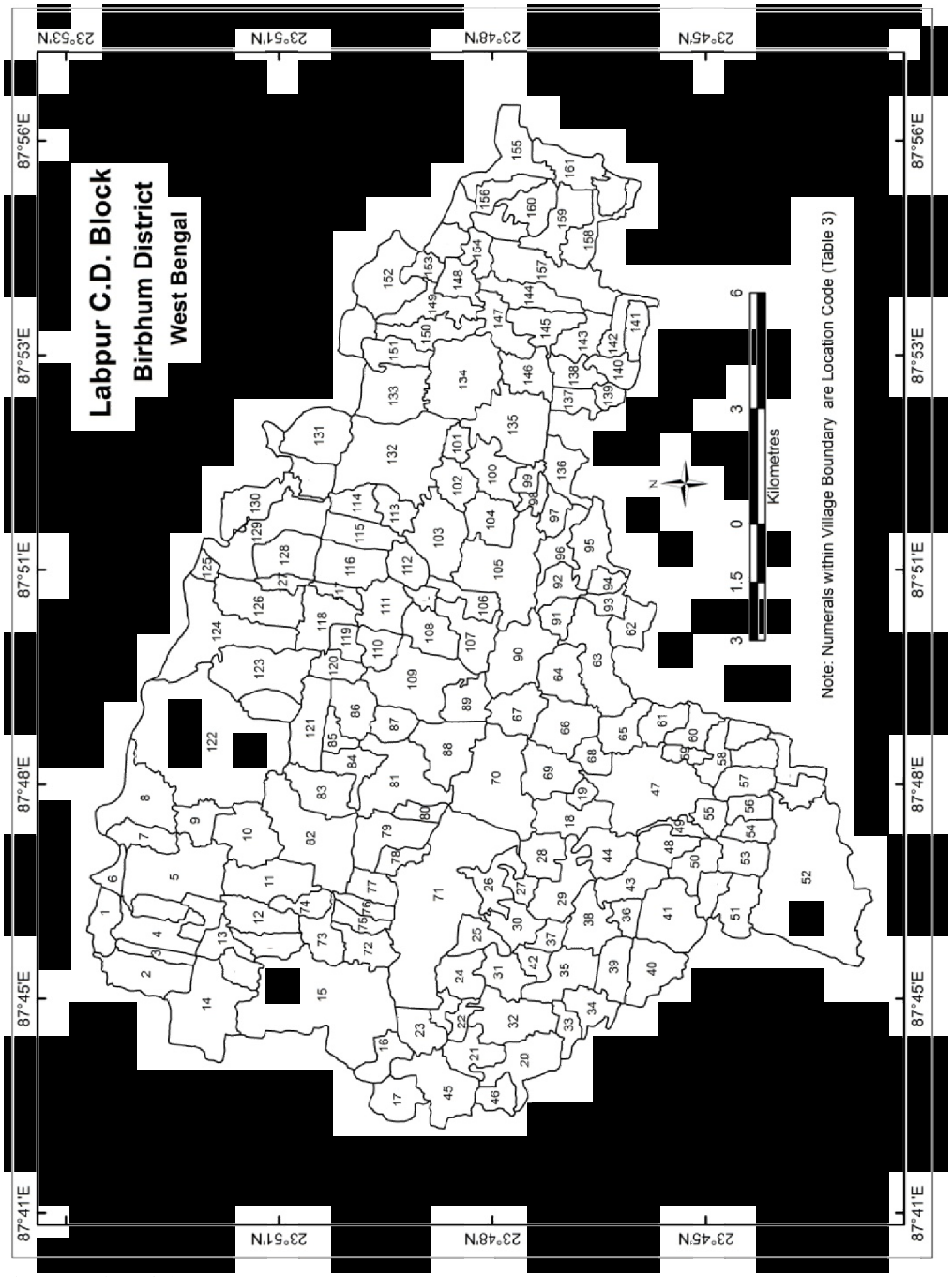

Fig. 1 Location of the study area

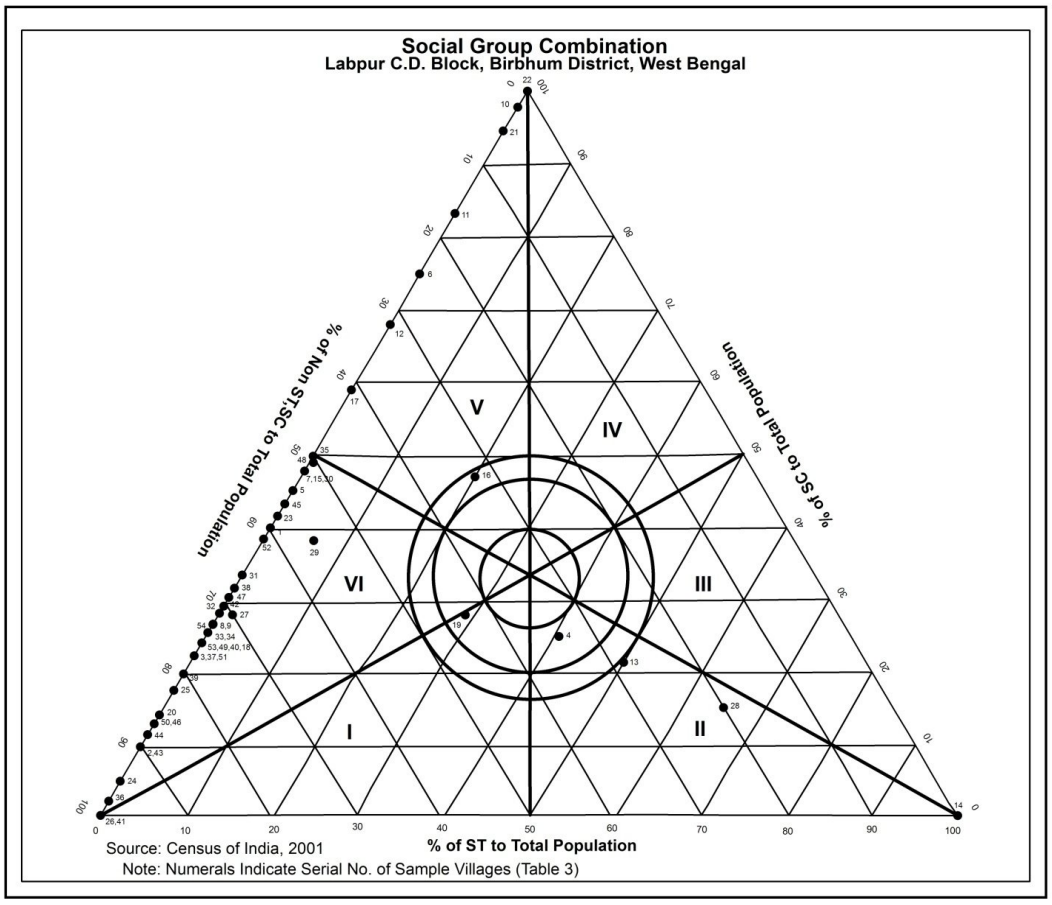

Fig. 2

5. Application of Ternary Diagram

The ternary diagram (Mitra,1967: 35-81 In Mahmood & Raza, 1977) has been used to categorize the 54 villages into three categories each of which is numerically dominated by one of the social group (Figure 2) identified by Census of India (2001). The results of analysis of the ternary diagram are given in the self explanatory table 2.

The diagram (Figure 2) consists of an equilateral triangle, the sides of which form three scales accommodated 0 to 100 per cent. The triangle reflects the relative numerical dominance of each social group. Percentages of Scheduled Tribe (ST), Scheduled Caste (SC) and Non ST, SC social groups were respectively plotted on each limb of the ternary diagram (Figure 2) and their position in the triangle has been taken determines their social grouping.

Then the triangle is sub divided into six sub-triangles, representing different social group combinations as given in table 2. These sub-triangles were further divided into four parts by three circles with centre at the middle of the triangle (representing 33.33 per cent of each social group) and radius equal to 6x2/3, 11x2/3, and 16x2/3. Theoretically, any point within the first circle represents presence of equal proportion of the three social groups identified by Census of India i.e. ST, SC and Non ST, SC. The points within any sub-triangle falling in the second circle (Sl. No. 4, 19 of sample villages in table 3) denote numerical dominance of one social group and more or less equal proportion of the other two social groups. The points within any sub-triangle falling in the third circle (Sl. No. 16 of sample villages in table 3) denote that the proportion of the first ranking social group (according to percentage) is moderately accentuated and the percentage proportion of other two social groups is low. Finally, the points of any sub-triangle

Table 1: Comparison of Descriptive Statistics between Total Number of Observations and Selected Villages by Sampling

Social Groups	Mean		Standard Deviation	
	Total No. of Observations (161)	Selected Villages by Simple Random Sampling (54)	Total No. of Observations (161)	Selected Villages by Simple Random Sampling (54)
ST	4.834	5.85	13.798	18.38
SC	34.119	31.43	22.505	22.52
Non ST, SC	60.431	62.72	24.74	25.74

(Source: Census of India, 2001)

Table 2: Degree of Concentration of Social Groups according to the position of villages in any of the Sub-Triangle of the Triangular Coordinates

Sub-triangle	Social Group Combination	Predominant Social Group	Sl. No. of Sample Village(s)	No. of Sample Village(s)
I	Low ST Medium SC High Non ST, SC	Non ST, SC	19	1
II	Low SC Medium Non ST, SC High ST	ST	4,13, 28	3
III	Low SC Medium Non ST, SC High ST	ST	_	0
IV	Low Non ST, SC Medium ST High SC	SC	_	0
V	Low Non ST, SC Medium ST High SC	SC	6, 10, 11, 12, 16, 17, 21, 22,	8
VI	Low ST Medium SC High Non ST, SC	Non ST, SC	1, 2, 3, 5, 7, 8, 9, 14, 15, 18, 22, 23, 24, 25, 26, 27, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41	29

Note: Sl. No. of sample village(s) given as per table 3.
(Source: Figure 2 (Census of India, 2001).)

outside the third circle (apart from Sl. No. 4, 16 and 19 of sample villages in table 3) shows the first ranking social group highly accentuated and the remaining two social groups as low.

6. Discussion and Analysis

In figure 2 (Table 2) villages coincide with the sub-triangles I, II, V and VI. None of the villages fall within the first circle. It represents uneven distribution of the percentage proportion of different social groups in the study villages. Within the second circle there are two points; one in the sub-triangle I and the other in sub-triangle II. Closer examination of the data on distribution of social groups reveals that sub-triangle I is Non ST, SC dominated and sub-triangle II is ST dominated. This conforms to the theoretical implication of the numerical dominance of one social group followed by more or less equal proportion of the other two social groups.

There is one point in 'circle three' falling within sub-triangle V and one outside 'circle three' coinciding with sub-triangle VI. Sub-triangles V and VI are SC and Non ST, SC dominated respectively. Theoretically

Table 3: List of Villages Selected by Simple Random Sampling

Location Codes *	Name of the Sample Villages	Location Codes	Name of the Sample Villages
1	Makura	89	Sarparajpur
9	Shaspur	90	Lohadda
14	Hatia	95	Kotul Ghosha
17	Faridpur	103	Manikpur
21	Babna	107	Monachitura
22	Pancha Ganga	109	Bakhul
26	Gopalpur	112	Shalika
31	Dhanghara	114	Punasi
33	Muniara	115	Kusulia
36	Talbana	116	Kapsundi
38	Arar	117	Sonajuli
40	Rakhareshwar	122	Danrka
45	Rajarampur	124	Ganutia
46	Srikrishnapur	127	Tala
55	Gopta	128	Miapur
57	Amnahar	135	Kandarkula
60	Putundi	139	Kustor
65	Chatra	140	Haranandapur
70	Mastali	142	Nandanpur
72	Hirapur	146	Khanpur
74	Uttar Ishakpur	150	Bagha
77	Kusumgaria	151	Bhatra
79	Baragoga	154	Jaychandrapur
80	Chhota Goga	155	Kaigarya
81	Madhugram	156	Kanrarpara
87	Debipur	157	Bagtor
88	Labhpur	160	Kaichara

Note: *Location codes given as per figure 1.
(Source: Census of India, 2001.)

it represents skewed distribution of the three social groups in the respective villages.

Finally we can say that the study area is numerically dominated by Non ST, SC with social group combination of low ST and medium SC (Table 2).

7. Conclusion

We can conclude that the study area is numerically dominated by Non ST, SC groups of population. Among the other two groups the SCs rank second in numerical dominance while the STs are numerically insignificant here. The method applied here can be adopted for similar exercises on spatial analysis of any other parameter in other areas. This method can also be used to identify target of beneficiaries under different policy programmes.

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