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SOCIAL FRAGMENTATION AND PROVISIONS OF PUBLIC GOODS
(A District Level Study on West Bengal)

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ABSTRACT:

All over the world there is strong relationship between social fragmentation and availability of public goods. Most of the cases there is an inverse relationship between population diversification or ethnic diversification and availability of public goods. Maximum studies on this issue stressed social fragmentation's negative impact on the provision of public goods.But in some cases there is a quite different result. This paper presents an empirical investigation that examines the relation ship between social diversification and availability of public goods in West Bengal at district level. Social diversification has been calculated with the diversification index considering of SC, St and Non schedule population data. Various types of publicly provided goods and services like education, health, post office; bank facilities etc are also has been considered in this study.

The result displays positive impact of Social fragmentation on availability of public goods and services.

KEY WORDS: Social Fragmentation, Diversification or Fractionalisation Index, Public goods.

INTRODUCTION:

Intra-population diversity in India has always remained a point of interest for anthropologists, geographers and human geneticists, because of the rich cultural heritage (linguistic, ethnic etc.), history of different waves of migration and impact of deep-seated caste system (or practice of strict endogamy / marriage rule), which potentially make every population a unique, isolated and important group (Kashyap.*et al*,2004,p.49). Existence of social fragmentation based on caste one of the important feature of West Bengal though in West Bengal there are various kind of factors which act as a basis for fragmentation of societies into different clusters like religion, language, economic status etc. *The New Shorter Oxford English Dictionary* defines Caste as "a Hindu hereditary class of socially equal persons, united in religion and usually following

similar occupations, distinguished from other castes in the hierarchy by its relative degree of purity or pollution. Although India is ethnically fragmented along the religious cultural and linguistic lines, the caste system further creates ethic fragmentation by creating a pyramid order in the society. Race or caste can be a factor with far-reaching influence on many aspects of day-to-day living. Political analysts dealing with elections have opined that India is a caste-ridden society and the voters tend to vote on caste lines (Chakravorty,2000,p 3374; Sengupta and Sarkar,2007,p.3313).Social heterogeneity may encourage governments in interest group politics leading to an increase in targeted and patronage spending relative to spending on pure public goods. Hence public good provisions may reduce as ethnic diversity increases (Sengupta and Sarkar, 2007,p 3314).From the period of the Empire of *Ballal Sen* (King of *Gour* during middle of 12th century AD), caste system also located in Bengal's society and entire hindu society was divided into four groups –Brahmin, Khatrio, *Baishya, Sudrah*(Pal, 2011,p.238). Now a central question is why some communities are able to generate high levels of public goods—–low crime, good schools and health care, adequate sanitation, and clean drinking water—–whereas others are not? Are there any Group politics? Generally public goods refers to a commodity or service provided without profit to all members of a society, either by the government or a private individual or organization or the benefit or well-being of the public. But in this public goods refer to the commodity or services provided by government. There are several studies related to ethnic diversification and provisions of public goods, most of the papers suggest that ethnic diversity as an important source of variation in the provisions of public goods in both developed and developing countries. The negative association between ethnic heterogeneity and public goods provision is widely accepted (Banerjee,et al.,2007). Fragmentation of society based on caste system is influencing local government spending on public goods like education, lighting, drainage, health and public works (Sengupta and Sarkar, 2007,p.3313-3321). J.Sengupta & D.Sarkar in their study suggest that higher ethnic diversity does matter for lower local government spending on all types of public goods. Alesina *et al* (1999,p.1243-1284) demonstrate that increased diversity leads to more variation in preference for public goods, leading, in turn, to less public spending. They also suggest that more ethnic diversity will increase "interest group" politics. A number of studies have also brought forth the relationship between the relative size of minority populations and the difference in socio-economic inequalities that exist in majority and minority groups. It has been observed that the larger the size of minority popula¬tions, the greater the socio-economic inequality between majority and minority groups (Alam, 2008, p 17-21). Alam (2008) in his study of West Bengal proved that as the size of muslim population increase availability of public goods decreases. A.Banerjee and R.Somanathan(2007,p.283-314) studies examined availability of different public goods including medical facilities, school and other physical structure within different villages of India. They also examined the relation between crime and ethnic fragmentation in their study. A standard conclusion of this paper is higher the fragmentation is associated with more group conflicts; we might expect higher crime rates in more fragmented localities.Miguel and Gugerty (2005,p.2325-2368) also found a negative relationship between ethnic fractionalization and school funding and infrastructure in Kenya..

THE STUDY AREA :

The selected study area of the present research work is West Bengal. West Bengal is the state of an India. West Bengal is situated at the eastern portion of India. This state is also known about its unique location. At the north of the Bengal the state of Sikkim is located. Banladesh is located at the eastern side of the West Bengal. Southern boundary of the state is demarcated by Bay of Bengal and western portion is bounded by Orisa Bihar and Jharkhand. The state is association of 20 districts and

each districts is association of some blocks. According to census of India, 2001 the number of total block of the state is 341 (excluding Kolkata). According to census of India, 2001 the district of Medinipur was not divided at that time and the state had 18 districts. From 18 districts 17 districts has been included under consideration. The entire work has been based on rural population of the state of West Bengal. Kolkata district has not been included because it has maximum number of urban population and does not comparable with other districts of the region. Socio-economic conditions of Kolkata do not similar to other parts of Bengal.

OBJECTIVES:

The objectives of this study comprise the following-

1) To find out the variation on availability of public goods.

2) Analyse whether population diversity have any impact on availability of public goods.

SOURCES OF DATA:

The present research is basically based secondary data. The data have been collected from the Census of India -2001. The data about the publicly provided goods basically collected from the village directory of Census of India (2001). Variety of village amenities has been selected for measure of relationship between diversification index and availability of public goods. Number of primary school, number of primary health centre and number of post office etc are selected as indicator in this study both in District level and CD block level.

METHODOLOGY:

Diversification index or Fractionalization index has been used to measure Social fragmentation

on the basis caste structure. The formula of Population diversification index or social fragmentation index:

$$h = 1 - \sum_{i}^{n} Si^2 \quad \text{.....(1)}$$

Where "Si" refers to the population share of the ith group and h refers to Diversification index or Fractionalization index. The value of fractionalization index varies form 0 to 1.where 0 means no diversification and the value towards 1 represent highly diversification. If there is just share of one caste to total population, Si= 1 and h= 0. As the number of caste increases, the share "Si" declines as does the sum of the squared share, so that h approaches 1.To measure population diversification, schedule caste, schedule tribe and non schedule caste and non schedule tribe populations are basically selected as a data. To measure the non schedule caste and non schedule tribe population the formula is given below-

Number of non scheduled population=Total population – (SC population +ST population)..... (2)

Diversification index has been calculated both the District wise and CD block wise. Through the help of these values some population diversification regions have been constructed. Formula of the calculation of this region is given below-

First find out the Highest and lowest "h" values, after that calculate range

Range(r) = Highest diversification value – Lowest diversification index value..... (3)

After that class interval has been calculated.

$$i = \frac{r}{n} \quad \text{.....(4)}$$

Where, i=class interval r= range and n= number of classes

After the calculation of this interval, the classes has been formulated by the following method-

Very low region = Below (Lowest diversification value + Class interval)..... (5)

Low= (Lowest diversification value + Class interval) to (Lowest diversification value + Class interval + Class interval)..... (6)

Similarly other classes are also calculated. Some modification to the original classes values have been made to avoid the fraction values. After calculating classes, the selected public good would be transformed into ratio, sometime per 100000 populations or sometimes 1000000 populations. At last some tables based on different categorized Amenities with respect to different diversified classes have been constructed. With the help of this it was tried to measure which amount of a particular public goods available within a particular classes (based on "h" values). Basically 12 publicly provided good are selected for the study some of them are - Number of primary school/100000 population, Number of middle school/100000 population, Number of secondary school/100000 population, Number of

colleges/1000000 population etc. All this data related to public goods are divided into 3 broad categories, they are (1) Educational facilities: containing- number of primary school, number of middle school, number of secondary school, number of colleges,(2)Health facilities: basically 4 variable included in this category they are- number of primary health centre, number of maternity home, number of child welfare centre,(3)other facilities: number of Tap, Number of Hand pump, Number of post office, number of co-operative bank are belongs to this category. Co-relation matrix has been also used to examine the relationship between population diversification and availability of public goods.

RESULTS AND ANALYSIS:

Keeping in view the above concern, the distribution of population diversification, and association between the diversification regions and the availability of public goods examined here in a multi layer framework. The macro level (layer one) related to regrouping the district into different regions or clusters based on diversification or fractionalisation index value and tries to measured impact of population diversification on availability of public goods. The 2nd layer focuses on distribution of different blocks into different diversified clusters and impact of population diversification on availability of public goods. This is basically a block level analysis. Finally the 3rd level of inquiry is also at block level. This level of analysis also tries to examine whether population diversification based on caste have any impact on availability of public goods at individual block level through co-relation matrix. First and foremost diversification index has been calculated and all the values are divided into five regions. The northern part of West Bengal including Darjeeling, Koachbehar, Jalpiguri is highly diversified. Birbhum, Burdwan, Purulia, Bankura and Dakshin Dinaj Pur are belongs to the very high diversified region. Jalpaiguri had the highest diversification index value (0.632) in 2001.This was followed by Dakshin Dinajpur where diversification index value is 0.61. South24 Parganas, Nadia, North24 Parganas, Hoogli and Uttar Dinajpur, this are the districts which basically belonging to the High diversified zone. Murshidabad is the district where population diversification is very low. In murshidabad district the share of non schedule population to total population very high almost 86.67% where share of Sc and St population to total population very low only 11.89% and 1.435%.Fig-1 shows population diversification regions of West Bengal at district level. Table-2 depicts the availability of different educational amenities or educational facilities in different diversification regions at district level. At district level where the population diversification is very low there availability of number of primary school/100000population is almost 51.64.And the district which are basically belongs to moderate zones the availability of no. of primary school/100000 population is almost 83 which is very high than other regions.

And the district which is belongs to the very high diversified regions there availability of no. of primary school /100000 population is high almost 78.36 but not so high like moderate zone. Similarly in the case of availability of no. of middle school/100000 population the ratio value is very high in moderate diversified district. In the case of availability of secondary school follows same situation. For the availability of primary school or secondary or middle school as the diversification is moderate the availability is increases and as the diversification is high the availability of those facilities are high but not relatively high than moderate group. But broader sense if you consider all the clusters the availability of those goods does not follow any particular trend that indicates highly demand of those services or facilities.

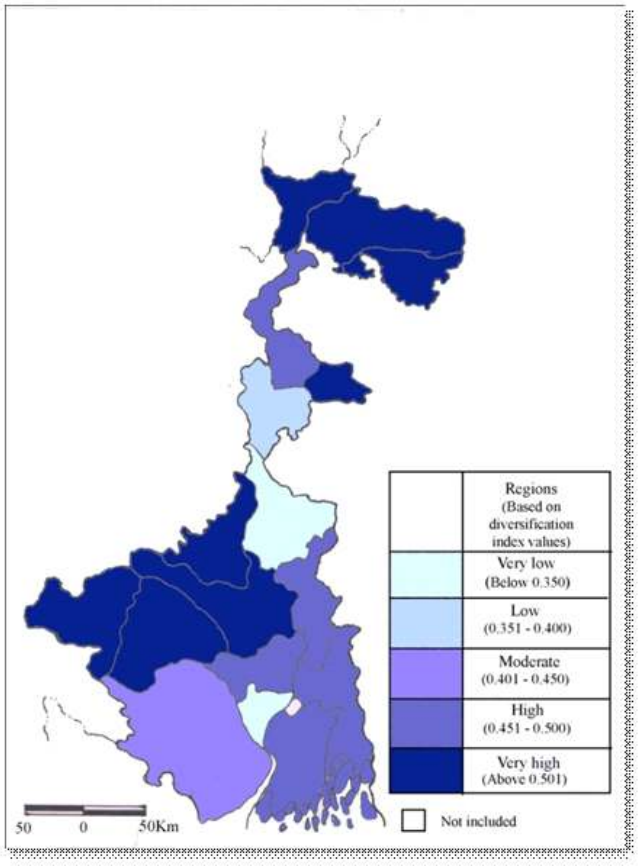

Figure 1: Social diversification regions

Table – 1: Distribution of districts according to diversification index

Regions(based on Diversification index value)	Classes based on Diversification index	Number of district	Name of the districts (with district codes)
Very low	Below 0.350	2 (11.76%)	Murshidabad(7)Howrah(16)
Low	0.351-0.400	19(5.88%)	Malda(6)
Moderate	0.401-0.450	1(5.88%)	Medinipur(15)
High	0.451-0.500	5(29.41%)	South24 Parganas (18),Nadia(10),North24 Parganas(11),Hoogli(12),Uttar Dinajpur(4)
Very high	Above 0.501	8(47.07%)	Kochbehar(3),Birbhum(8),Darjeeling(1),Burdwan(9),Purulia(14), Bankura(13),Dakshin DinajPur(5),Jalpaiguri(2)

Source: Calculation based on Census of India data, 2001

The table-3 presents the ratio of different health facilities to population in different clusters. It can be observed that the deficiency of health facilities increases with increasing the population diversification. But in individual observation (particular amenities wise) there is not any general trend. The no. of primary health centre /1000000 populations is very high where the population diversification is very high. And the district which are belongs to the low diversification regions the availability of no of primary health centre is much lower(see Table-3).

Table-2: Ratio of Educational facilities to population in different diversification regions (District level)

Regions	Classes based on Diversification index	Number of district	Number of primary school/100000 population	Number of middle school/100000 population	Number of secondary school/100000 population	Number of colleges/1000000 population
Very low	Below 0.350	2(11.76%)	51.64	8.37	5.34	1.42
Low	0.351-0.400	1(5.88%)	58.38	9.45	6.39	2.08
Moderate	0.401-0.450	1(5.88%)	83.00	13.23	7.59	2.41
High	0.451-0.500	5(29.41%)	42.40	6.02	4.28	1.17
Very high	Above 0.501	8(47.07%)	78.36	10.54	6.84	1.74

Source: Calculation based on Census of India data, 2001

Apart from the health facilities and educational facilities some other facilities have also essential for development of society, such kind of some indicator also taken under consideration in this paper. The moderately diversification region have high availability of number of tap/100000 population, number of hand pump/1000000 population this values are 223.38 and 200.15. But the district which are belongs to the moderate regions there availability of Co-operative bank per1000000 population is very low (See the table-4).

Table-3: Ratio of Health facilities to population in different diversification regions (District level)

Regions	Classes based on Diversification index	Number of district	Number of primary health centre/1000000 population	Number of maternity home/1000000 population	Number of child welfare centre/1000000 population
Very low	Below 0.350	2(11.76%)	16.65	2.58	82.99
Low	0.351-0.400	1(5.88%)	15.00	4.23	103.39
Moderate	0.401-0.450	1(5.88%)	19.19	2.41	112.50
High	0.451-0.500	5(29.41%)	11.46	3.50	79.18
Very high	Above 0.501	8(47.07%)	22.04	5.97	164.76

Source: Calculation based on Census of India data,2001

Table-4: Ratio of Other public goods to population in different diversification regions (District level)

Regions	Classes based on Diversification index	Number of district	Number of tap/100000 population	Number of handpump/100000 population	Number of post office/100000 population	Number of co-operative/1000000 population
Very low	Below 0.350	2(11.76%)	62.35	89.71	8.79	16.26
Low	0.351-0.400	1(5.88%)	88.94	90.34	10.05	9.78
Moderate	0.401-0.450	1(5.88%)	223.38	200.15	14.19	1.41
High	0.451-0.500	5(29.41%)	59.81	59.81	7.86	13.75
Very High	Above 0.501	8(47.07%)	129.58	117.51	12.46	15.29

Source: Calculation based on Census of India data, 2001

The 2nd level of analysis basically deals with 341 block of West Bengal. According to fractionalisation index value, all 341 has been arranged and grouped into different diversification regions. And table 5,6 and 7 depicts the availability of various public goods within different social clusters at block level. Table-5 presents the availability of different educational facilities within different diversification regions (block level). The blocks which are blocks at low fragmented region there only 38.11/100000 population primary school are available. But at very low diversification region availability of primary school quite better than low region, here number of primary school/100000 population is 50.62.In the very high population diversification region along the caste lines the availability of primary school is very high than other region. At very high population diversification region the availability of primary school per 100000 population is 77.42. The blocks which are basically belongs to the very low population diversification region there number of college 1.04/100000 population is available.

Table -5: Ratio of Educational facilities to population in different diversification regions (Block level)

Regions	Classes (based on diversification values)	Number of blocks	Number of primary school/100000 population	Number of middle school/100000 population	Number of secondary school/100000 population	Number of colleges/100000 0 population
Very low	Below 0.200	24(7.04%)	50.62	8.38	5.39	1.04
Low	0.201 - 0.300	48(14.08%)	38.11	6.53	3.77	1.24
Moderate	0.301 - 0.400	51(14.95%)	56.93	9.34	5.67	1.54
High	0.401 - 0.500	93(27.27%)	47.84	7.17	4.49	1.24
Very High	Above 0.501	125(36.6%)	77.42	11.1	6.94	1.82

Source: Calculation based on Census of India data, 2001

Table 6 and 7 showing same situation as above where the fragmentation is high availability of publicly provided goods almost high. According to fractionalization index group 125 CD blocks belongs to highly social fragmentation region and availability of primary health care centres is relatively higher than other cluster of societies.

Table-6: Ratio of Health facilities to population in different diversification regions (Block level)

Regions	Classes (based on diversification values)	Number of blocks	Number of primary health centre/1000000 population	Number of maternity home/1000000 population	Number of child welfare centre/1000000 population
Very low	Below 0.200	24(7.04%)	14.37	0.83	73.32
Low	0.201 - 0.300	48(14.08%)	10.13	2.26	64.59
Moderate	0.301 - 0.400	51(14.95%)	15.93	3.86	73.75
High	0.401 - 0.500	93(27.27%)	12.66	2.48	79.78
Very High	Above 0.501	125(36.66%)	21.27	6.69	178.89

Source: Calculation based on Census of India data, 2001

An upward concave trend line is formed for the situation of availability of hand pump. The table

-7 depicts the positive association between diversification of population and the availability of hand -pump/100000 populations Almost same situation has been occurred in the case of availability of number of tap and availability of post offices (see table-7).

Table-7: Ratio of Other public goods to population in different diversification regions (Block level)

Regions	Classes (based on diversification values)	Number of blocks	Number of Tap/100000 population	Number of Handpump/100000 population	Number of post office/100000 population	Number of co-operative bank/1000000 population
Very low	Below 0.200	24(7.04%)	59.8	65.16	9.12	8.96
Low	0.201 - 0.300	48(14.08%)	54.63	48.46	6.57	7.79
Moderate	0.301 - 0.400	51(14.95%)	84.02	78.81	10.49	14.38
High	0.401 - 0.500	93(27.27%)	81.43	74.56	8.16	12.95
Very High	Above 0.501	125(36.66%)	155.52	144.71	12.55	17.35

Source: Calculation based on Census of India data, 2001

Table-8 showing the relationship between social fragmentation and availability of various pubic goods and services at CD Block level. Result of Co-relation matrix displays low level of positive association between Diversification index value and Education services as the 'r' value ranges from 0.7 to 0.27.association between Diversification Index and health facilities showing same situation as above, where availability of Child welfare and Diversification is positively correlated and the 'r' value is 0.19 which indicate with increase of social fragmentation availability of public goods will also increase. Degree of correlation between various easily available public goods (like Hand pump and Taps) and Diversification index are relatively higher than other goods and services. But association between availability of Post office and Co-operative indicate similar kind of positive association as Education and Health facilities.

Table-8: Co-relation matrix of among Diversification index and various Public goods and Services

	Diversification index	Number of primary school/100000 population	Number of middle school100000 population	Number of Secondary school/100000 population	Number of colleges/100000 population
Diversification index	1				
Number of primary school/100000 population	0.27	1			
Number of middle school100000 population	0.12	0.78	1		
Number of Secondary school/100000 population	0.15	0.71	0.79	1	
Number of colleges/100000 population	0.07	0.15	0.21	0.18	1

	Diversification index	Number of primary health centre/1000000 population	Number of Maternity home/1000000 population	Number of child welfare centre/1000000 population	
Diversification index	1				
Number of primary health centre/1000000 population	0.18	1			
Number of Maternity home/1000000 population	0.15	0.08	1		
Number of child welfare centre/1000000 population	0.19	0.09	0.16	1	

	Diversification index	Number of Tap/100000 population	Number of Hand pump/100000 population	Number of post office/100000 population	Number of co-operative bank/100000 population
Diversification index	1				
Number of Tap/100000 population	0.39	1			
Number of Handpump/100000 population	0.35	0.96	1		
Number of post office/100000 population	0.17	0.58	0.58	1	
Number of co-operative bank/100000 population	0.07	0.15	0.16	0.20	1

Source: Calculation based on Census of India data, 2001

MAJOR FINDINGS AND CONCLUSION:

This paper suggests that caste fragmentation is common phenomena in West Bengal, maximum number (47.07%) of district is highly fragmented based on caste system. The same situation is located at lower level where almost 36.66% of block of the total no. of block of West Bengal is highly diversified along the caste.

The paper presents an empirical investigation that examines the role of population diversification along with the caste in influencing the availability of publicly provided goods like education, health, post office; bank facilities etc in district and block level of West Bengal. This paper also tries to investigate whether population diversity have any impact on availability of public goods. This paper suggests that there is a positive relationship between the population diversification and availability of public goods. This paper reports higher the population diversification along the caste is one of the important factors for higher allocation of public goods. This type of situation indicate more equal status, lower level of social conflicts, lower level of caste inequality about the matter of availability of public goods, strong group politics, more political stability. Further empirical investigation is required to accurately identify the different aspects of population diversification and impact of the population diversification on distribution or availability of publicly provided goods by government.

REFERENCES:

1. Alam,A.,(2008): Is Relative Size of Minority Population Linked to Underdevelopment?, Economic & Political Weekly, XLIV (48), p. 17-21
2. Alesina, A.Baquir,R., and William,E.,(1999): Public Goods and Ethnic Divisions, Quarterly Journal of Economics,114(4), p. 1243-84
3. Banerjee, A. and Somanathan,R., (2007): The political economy of public goods: Some evidence from india, Journal of Development Economics ,82(2), p.287–314.
4. Banerjee, A., L., Iyer, and Somanathan, R.,(2007):Public Action for Public Goods. NBER Working Paper No. 12911, National Bureau of Economic Research, Cambridge.
5. Chakravorty, J .,(2000): Sikkim: Elections and Casteist Politics, Economicand Political Weekly, XXXV(43),p.3374.
6. Kashyap,V. K., Ashma,R., Gaikwad,S., Sarkar,B.N. and Trivedi,R.,(2004):Deciphering diversity in populations of various linguisticand ethnic affiliations of different geographical regions of India: analysis based on 15 microsatellite markers, J. Genet. 83(1), p.49–63.
7. Miguel, E. and Gugerty,M.K.,(2005, December):Ethnic diversity, social sanctions, and public goods in Kenya,Journal of Public Economics,89(11-12), 2325–2368.
8.Pal,T.,(2011):Geography of Urban Cobblers (Muchi or Shoemaker):An Over-view in Bolpur Town, West Bengal, India, International Journal of Business and Social Science, 2 (3),p.238
9. Sengupta,J. and Sarkar,D.,(2007):Discrimination in Ethnically Fragmented Localities A Study on Public Good Provision in West Bengal,Economic and Political Weekly, 42(32),p.3313-3321

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