

DIFFERENCES IN LITERACY: AN INTEGRATED BLOCK LEVEL ANALYSIS IN WESTERN PART OF WEST BENGAL

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ABSTRACT

The present study is concern with the differences in literacy among three districts as well as 71 numbers of blocks which are situated at the extreme western part of West Bengal. Literacy is one of the most significant social indicator which is vividly upgrading the overall condition of a country or region. The study examines the level of literacy of different blocks in western districts of West Bengal that is Purulia, Bankura and Paschim Medinipur using statistical as well as cartographic techniques. Differences are portraying with the help of secondary data. This study also highlights the inter block inequalities in literacy. The study found Paschim Medinipur district is securely positioned in top among these districts. In block level, Sabang block occupies a remarkable place in terms of literacy level. Availability, accessibility of educational institutions, school infrastructure and socio-economic condition triggered the literacy level as well as education level of a region.

Keywords: Literacy, Social indicator, Differences, Inequality, Statistical techniques

1. INTRODUCTION

Literacy as a qualitative human resource of a country or region is also an important social indicator to understand the overall condition of a country. As per the educational level, literacy can be defined as very easily but it is difficult in terms of socio-cultural values. In a general sense, literacy means the ability to read and write (Merriam-Webster.com). Earlier the term literate means well educated or learned but since nineteenth century it is used to depict the abilities to '*read and write text*'. Since the mid-twentieth century, scholars of different subjects and different part of World are more concern about the definition of literacy and put their approaches into different planning policy (Fransman, 2005). Literacy also considered as '*tangible skill*' as well as '*cognitive skills*' of reading and writings (UNESCO, 2006). But in recent date, literacy concepts are not bounded with abilities of reading or writing skills (UNESCO, 2006). Literacy concept has been changed spatially means different country considered different criteria for defining it. Like, Brazilian Geographical and Statistical Institute

of Brazil define literate as '*functional literate*' who complete four-grade school educations (MasagãoRibeiro, V. and Gomes Batista, A. A. 2005). In Israel, literate means acquire the '*essential knowledge*' and '*capability of participation*' as well as the application of knowledge in all sphere which is related to reading and writing (Brosh-Vaitz, 2005). Kenya govt. considered as literate as response about read and write as well as completed four-grade of primary education and also coined '*sustainable literacy development*' term in this context (Bunyi, 2005). Nepal govt. define literate according to the functionality of '*the three R's*' (reading, writing and arithmetic) (Koirala andAryal, 2005). As per Indian Census, literate peoples' age should be above seven years as well as can read and write any language (Govinda, R. and Biswal, 2005b).

There is two kind of literacy rate; one is crude literacy rate which is measured in reference to total population. On the other hand, the effective literacy rate which can be measured by the ratio of total literate population and total population above 7 years (Census of India, 2011). Discussion about Literacy rate is very important to find out the quality of society in terms of social as well as economic condition. Literacy brings consciousness which also directly or indirectly triggered the overall situation of society. Nowadays, the literacy related discussion is an important matter to the planners, sociologists, economists and geographers for societal advancement. Inter blocks differences in literacy rate have been discussed of selected district of West Bengal.

2. STUDY AREA

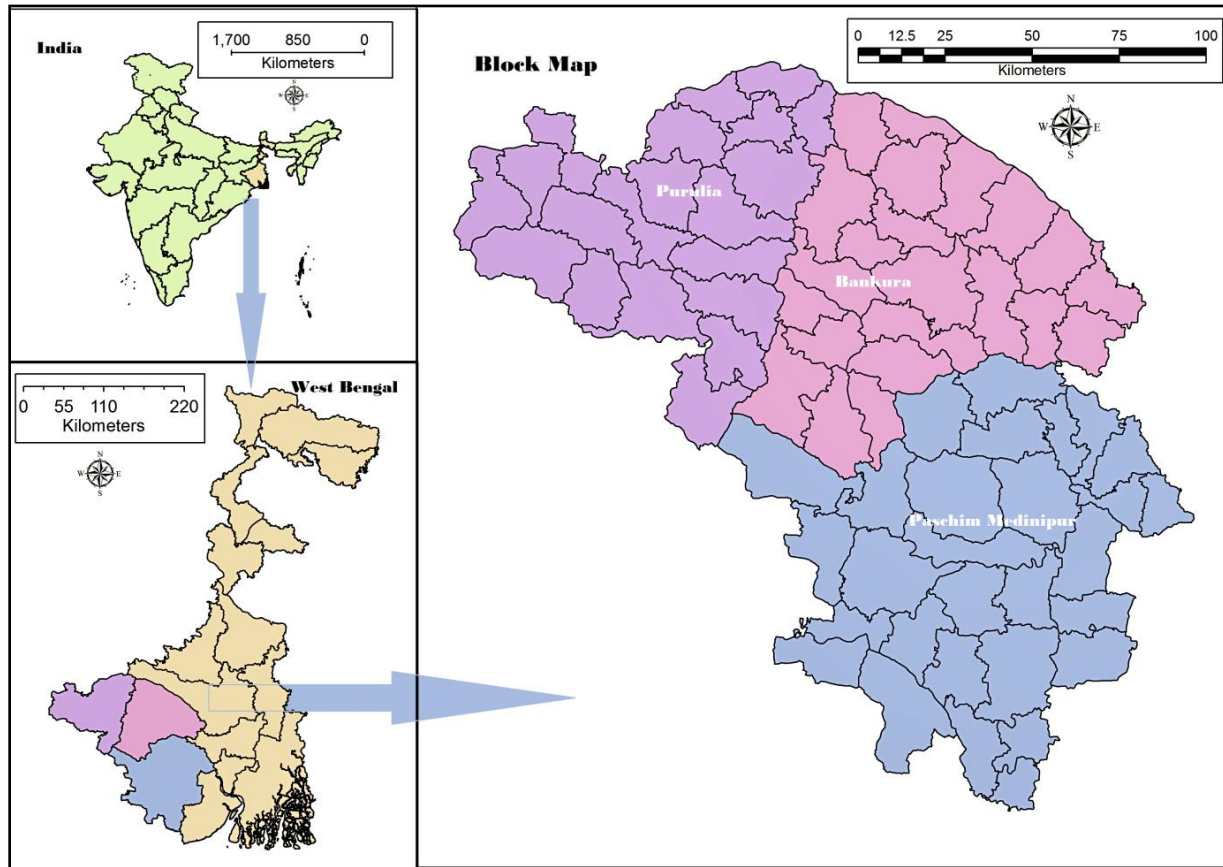
71 no. of blocks of three districts which are located at the extreme west of the West Bengal is considered as study area namely, Paschim Medinipur (29), Bankura (22) and Purulia (20). Jhargram designated as a new district with eight blocks in 20017 by the Government of West Bengal which is bifurcated from Paschim Medinipur district. Jhargram district is considered within the study area (Fig. 1) as integrated form of Paschim Medinipur district due to unavailable of separate district level literacy related data according to the Census of India, 2011.

3. OBJECTIVES

For painting the differences in literacy rate of different blocks of three selected districts, particular objectives have been set which are follows:

- To analysis the block level spatial differences in literacy
- To highlight the difference in literacy between rural and urban area
- To appraise the inter block inequalities in literacy

Figure 1: Location of study area



Source: Prepared by author (based on census of India, 2011)

4. DATABASE

Literacy rate related data have been extracted from secondary data which is published by district Census handbook of India, 2011.

5. METHODOLOGY

To fulfill the objectives, two fold methods have been adopted. One is quantitative method another one is cartographic method.

5.1 Quantitative Method:

Inequalities measures have been applied to analysis the inequality of literacy level of different blocks as well as caste wise, gender wise and civic status of settlement wise. Gini Index is most widely used inequality measures. It is measures the deviation of distribution from the perfectly

equal distribution line. It is also analysis the inequality gap as well as nature of inequality. It is calculated by

$$GI = A/A+B$$

Where GI is Gini Index, A is the area between perfectly equal distribution and Lorenz curve and A+B is the half area of triangle that is 0.5

5.2 Cartographic Method:

Map making method is considered as cartographic techniques. Different maps have been constructed in Arc GIS 10.3.1 GIS platform to show the spatial distribution and inequalities of literacy rate in different blocks.

6. RESULTS AND DISCUSSION

6.1 Spatial distribution of overall literacy level:

Nature of distribution of literacy rate among three districts is asymmetry or skewed. In Paschim Medinipur, blocks are more spread over wider range than others districts and low concentration in the central region of distribution but it is maximum in case of Purulia district (Table 1b). Paschim Medinipur district securely placed in seventh position among all districts of West Bengal as well as first position in the row of selected districts with 78 per cent overall literacy rates, above the national and state level. Bankura and Purulia are placed following with 70.26 and 64.48 per cent respectively as well as the average literacy rate of Paschim Medinipur is highest (Table 1a). It may be for availability as well as accessibility of education opportunity and impact of adjacent districts.

Table 1a: Descriptive Statistics of Literacy rate

Districts	Literacy rate	Mean	Median	Mode	Std. Deviation ^a	Skewness ^b	Std. Error of Skewness
Bankura	70.26	69.13	68.49	61.45 ^a	4.00187	0.303	0.491
Purulia	64.48	63.28	63.97	54.76 ^a	4.58528	-0.449	0.512
Paschim Medinipur	78	76.11	76.08	63.70 ^a	5.73080	-0.076	0.434

Values in per cent except a, b and c

Source: Computed by author (based on Census data, 2011)

Table 1b: Descriptive Statistics of Literacy rate

Districts	Std. Error of Kurtosis ^c	Percentiles		
		25	50	75
Bankura	0.953	66.08	68.49	71.87
Purulia	0.992	60.30	63.97	67.01
Paschim Medinipur	0.845	72.22	76.08	80.80
Values in per cent except a, b and c				

Source: Computed by author (based on Census data, 2011)

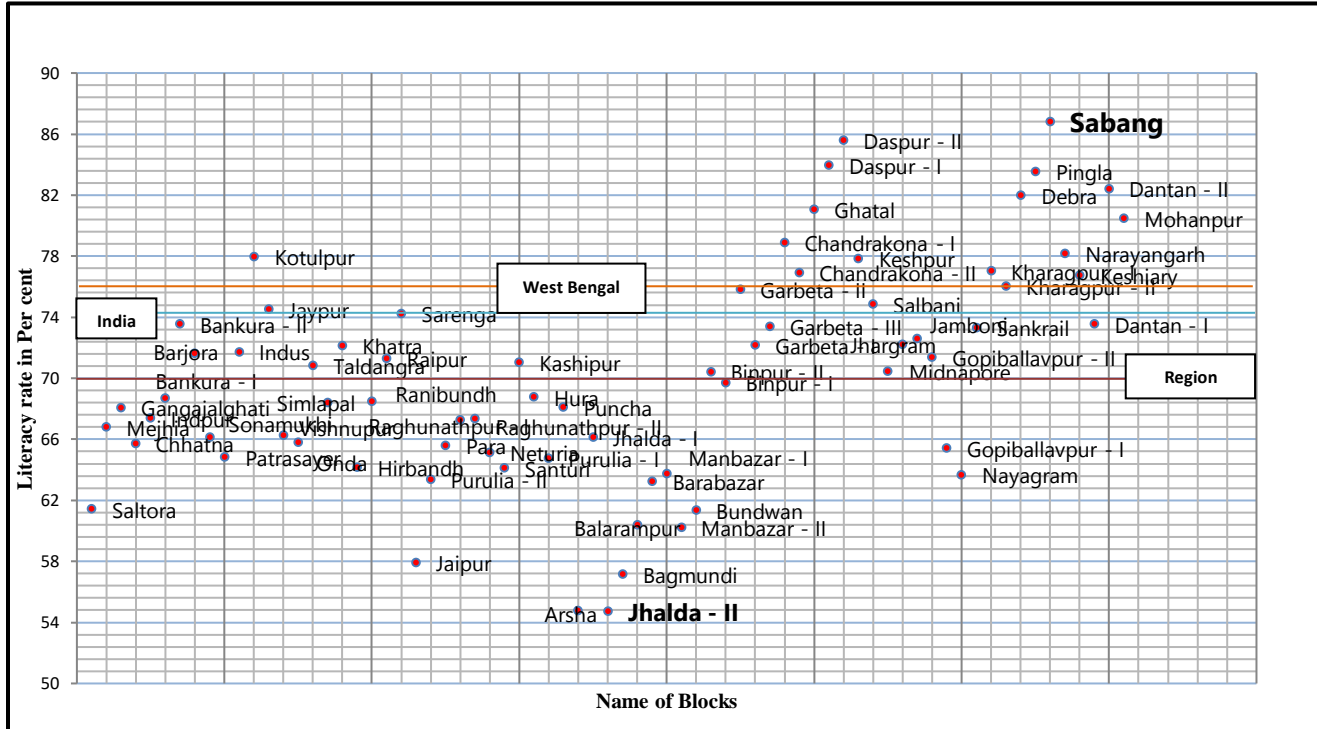
In block level analysis, the study found Sabang is placed in first position with 86.84 per cent of literacy rate among other blocks as well as above state and national level while Jhalda-II is in last row with 54.76 per cent (Fig. 2). Table 2 showing the overall average or arithmetic mean literacy rate is 70.33 per cent and median literacy rate is 70.46 per cent in this study. 36 numbers of blocks are above and 35 numbers of blocks are below in average line. 26 out of 36 blocks of Paschim Medinipur district are positioned above average literacy line of Paschim Medinipur while nine blocks and only Kashipur block of Bankura and Purulia respectively. 19 blocks of Purulia are in below average line while 13 and only three blocks of Bankura and Paschim Medinipur is positioned respectively. Fig. 3 showing the comparative situation of literacy rate among three districts at a glance. Among three districts lowest literacy is found in Purulia district as well as highest in Paschim Medinipur district. In Paschim Medinipur district, more blocks are concentrated within 25-75 percent literacy level than others two districts. Regional average literacy rate is as less as national and state level but average literacy rate of Paschim Medinipur is approximately as same as state level.

Table 2: Descriptive Statistics of Literacy rate in Study area

Mean	Median	Mode	Std. Deviation ^a	Skewness ^b	Std. Error of Skewness	Kurtosis ^c
70.33	70.46	54.76 ^a	7.22	0.16	0.28	-0.25
Std. Error of Kurtosis	Minimum	Maximum	Percentiles			Remarks
			25	50	75	
0.56	54.76	86.84	65.44	70.46	74.87	Values in per cent except a, b and c

Source: Computed by author (based on Census data, 2011)

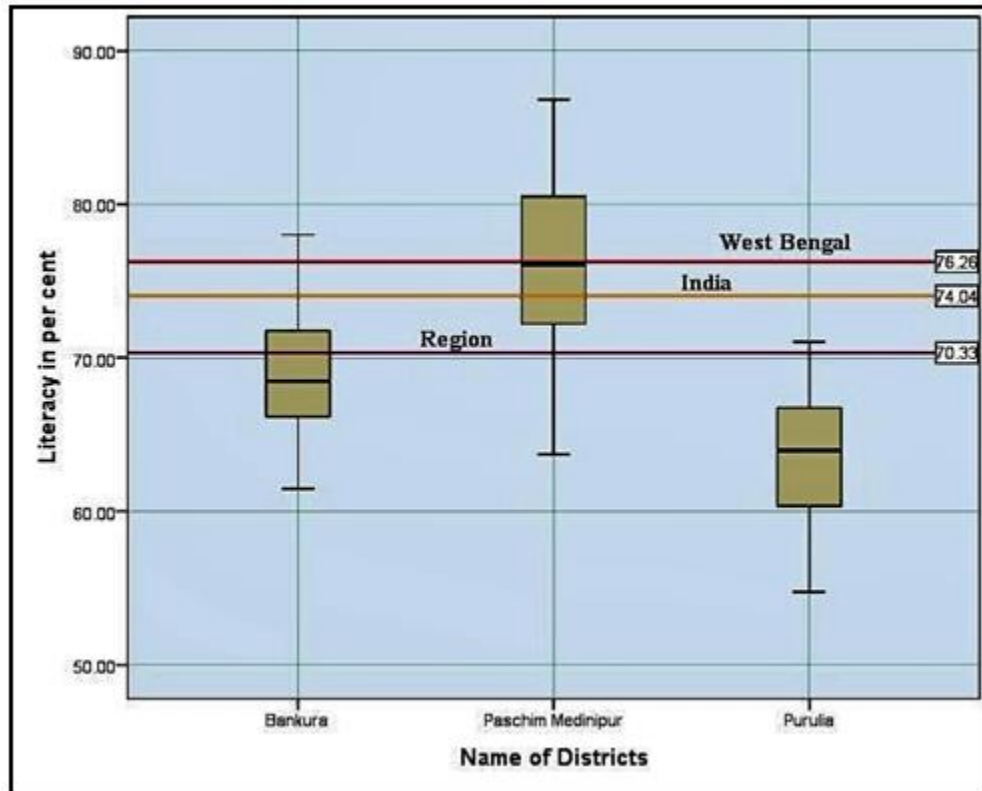
Figure 2: Literacy rates of different blocks in Study are



Source: Prepared by author (based on Census data, 2011)

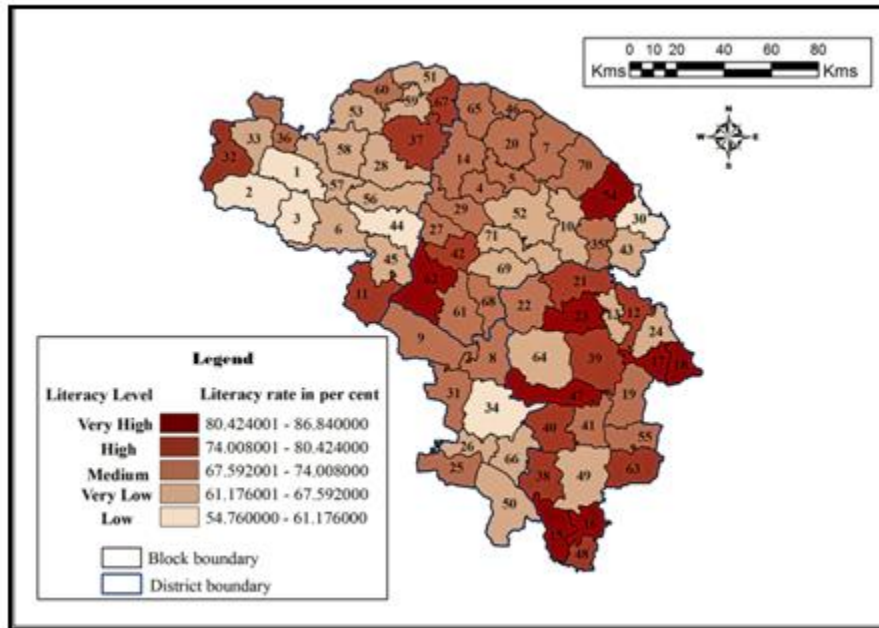
Spatial variation of literate population is showing in Fig: 4. Level of literacy is further classified into five classes, such as Very high, high, medium, low and very low. Only nine blocks are in very high level of literacy with average 83.26 per cent. High level of literate population concentrated only in 12 numbers of blocks with average 76.62 per cent while only four blocks which is also part of Purulia district are in very low level with average 57.55 per cent.

Figure 3: Literacy rate of India, W.B. and Study area



Source: Prepared by author (based on Census data, 2011)

Figure 4: literacy levels of different blocks



Source: Prepared by author (based on Census data, 2011)

6.2. Rural-Urban Scenario:

Overall literacy rate depict the whole image of a block but this section individually highlight the rural-urban scenario of literacy level. Nature of distribution of rural literacy rate is positively skewed in study area. Maximum and minimum literacy is 86.84 and 54.60 per cent respectively (Table: 3). Paschim Medinipur district placed in first row in study with 76.87 per cent, above national as well as state level. Highest literacy rate in Paschim Medinipur district is found in Sabang block with 86.84 per cent which has no urban population. Average rural literacy rate of this district is 75.95 per cent. 14 out of 29 numbers of blocks are positioned above district average line. Bankura district is in second position with 68.93 per cent. Average literacy rate of this district is 68.92 per cent very slightly differ from actual literacy rate and only 9 no. of blocks are above in this line. Kotulpur block has the highest rural literacy among other blocks in Bankura district. Purulia district's rural literacy rate is 62.73 per cent with average 62.59 per cent. Kashipur block has highest rural literacy rate with 69.29 per cent. The average literacy rate of study area is 70.01 percent which is also above the national level but below state level which is 72.13 per cent. 35 and 36 number of blocks are positioned above and below of average line respectively. 66 numbers of blocks have more literate population than national level which is 58.70 per cent. Highest and lowest rural literacy is found in Sabang and Jhalda-II blocks of Paschim Medinipur and Purulia district respectively. National and state level of literacy is same

as lower quartile value of Paschim Medinipur and Purulia district respectively. Maximum inter quartile range of literacy rate is found in Paschim Medinipur district which indicates the high concentration of literate population within 25-75 per cent among other two districts (Table 3). As per the literacy levels blocks are classified into five classes. Very high level of literacy is found in only four blocks which is the part of Paschim Medinipur while very low level is found in only seven blocks of Purulia.

Table 3: Descriptive Statistics of Literacy rate in Rural and Urban area

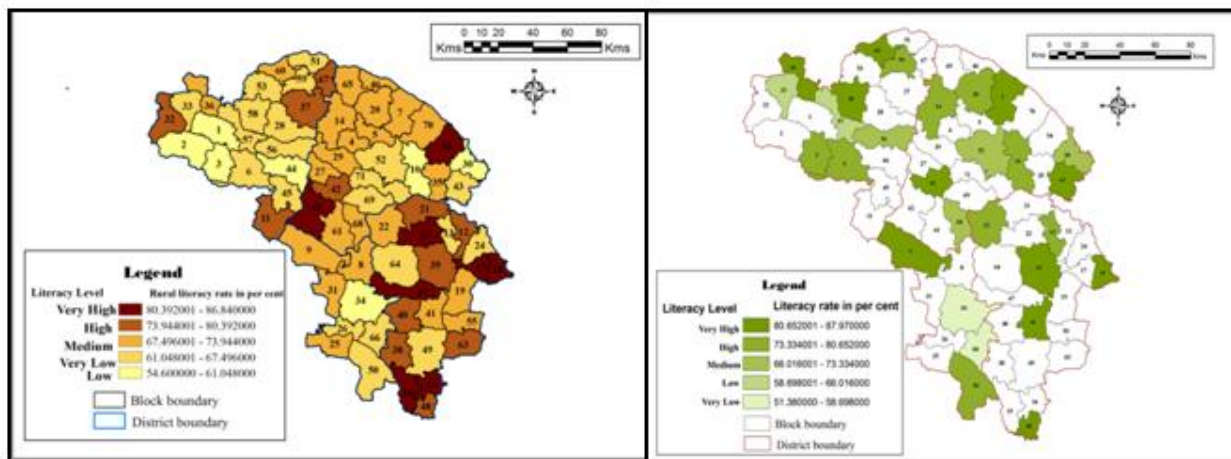
Civic Status	Mean	Median	Mode	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis
Urban	75.49	77.61	51.38	9.7	-0.92	0.44	0.22
Rural	70	69.74	64.18	7.35	0.165	0.285	-0.251
Civic Status	Std. Error of Kurtosis	Minimum	Maximum	Percentiles			
				25	50	75	
Urban	0.86	51.38	87.97	69.5	77.61	81.88	
Rural	0.563	54.6	86.84	65.09	69.74	74.57	

Source: Computed by author (based on Census data, 2011)

In the other hand, urban literacy rate is discussed which blocks have urban population. 28 numbers of blocks have urban population and not considered Municipality’s literacy related data in this context. Nature of distribution of urban literacy rate is same as rural area but statistically is not same as per the result of direction and nature of distribution (Table 3). Purulia has higher number of urbanised blocks in study among two districts. Range of literacy rate is also highest in this district. Paschim Medinipur district is in top as per urban population literacy rate with 85.96 per cent, above national level and slightly above the state level. Narayangarh block (87.97 per cent) has highest urban literacy rate among other blocks in Paschim Medinipur which also positioned above the national as well as state level. Average urban literacy rate of this district is 81.34 per cent. Bankura district’s literacy is slightly low from number one district under study with 84.42 per cent. Khatra block has highest literacy that is 87.40 per cent in this context. Average urban literacy is 84.95 per cent which is greater than Paschim Medinipur and Purulia as well as national and state level. In this platform Purulia district scored 76.18 per cent. Average literacy is lower than other districts but Kashipur block scored as high as national average and average of Paschim Medinipur district. Regional average urban literacy rate is 75.49 which are lower than the average of Paschim Medinipur and Bankura district but greater than district average of Purulia. Total 16 and 12 numbers of blocks are poisoned above and below the average line respectively. Five Out of six numbers of blocks in Bankura district, six out of 15

numbers of blocks of Purulia district and seven out of six no. of blocks of Paschim Medinipur district are above average line. Highest literacy rate is found in Narayangarh block and lowest in Santuri block of Purulia. Fig. 5a and 5b are showing the differences in literacy rate of rural and urban area.

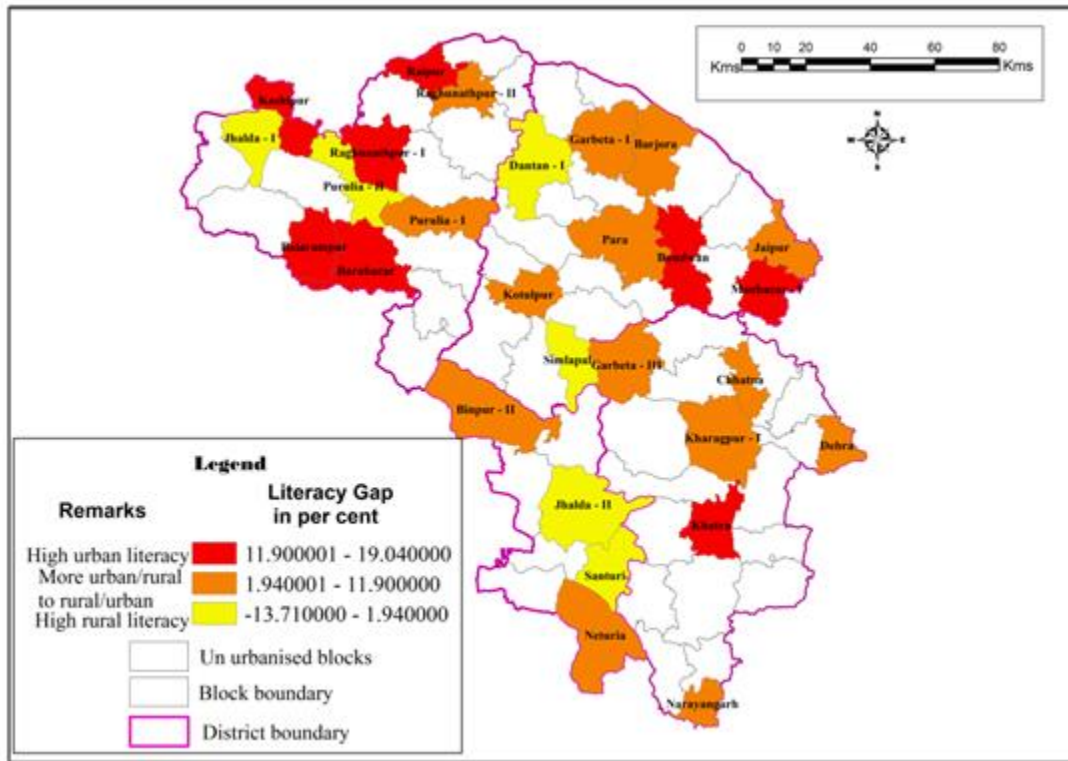
Figure 5: Literacy levels of different blocks a) Rural and b) Urban



Source: Prepared by author (based on Census data, 2011)

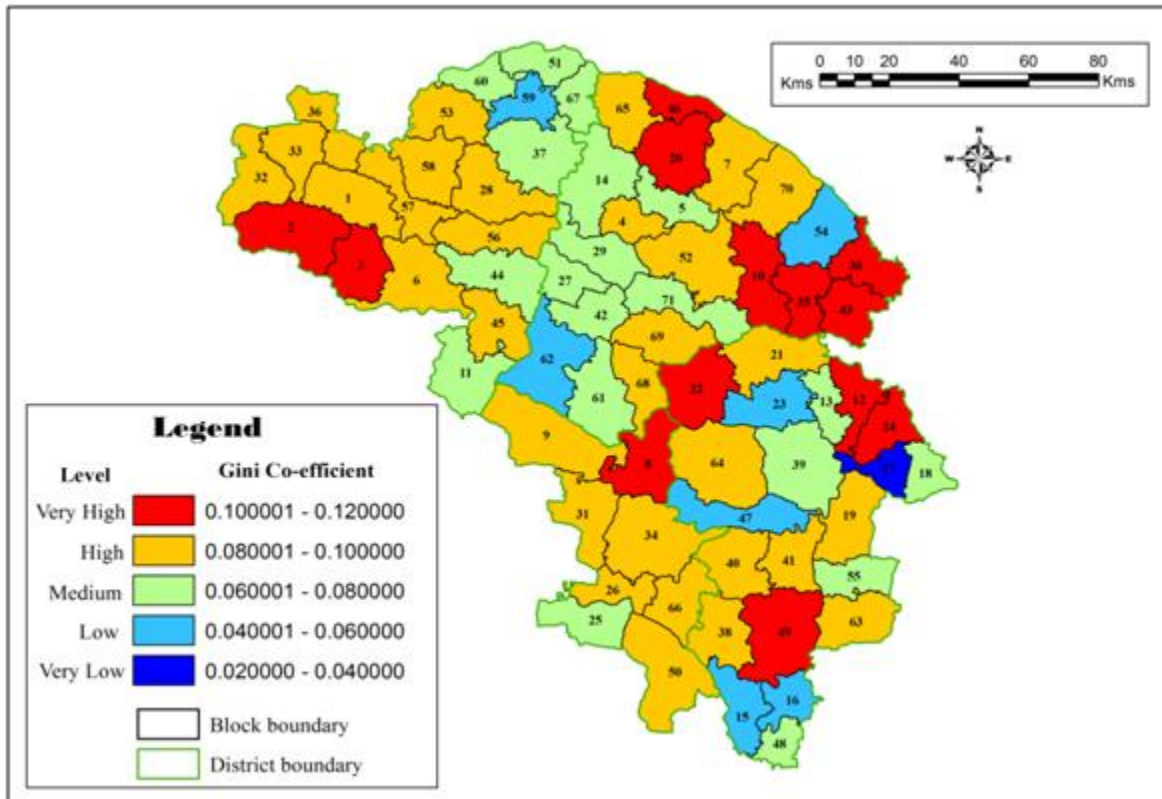
Urban-rural literacy gap is high in Bankura district ^{5b} is 15.49 per cent and highest gap is found in Khatra block in this district. In Purulia this gap is 13.45 per cent and highest in Manbazar-I. Gap in Paschim Medinipur is 9.09 per cent and highest in Binpur-II. It may be for availability of higher education opportunities and awareness about education in urban area but Purulia-II, Santuri, Jhalda-I as well as Dantan-I presents the reverse image (Fig. 6). Urban-rural differences among schedule tribe and schedule caste literacy rate are highest in Bankura district and lowest in Paschim Medinipur and Purulia district respectively. At state level this differences are 14.54 and 9.19 per cent respectively.

Figure 6: Literacy Gap in Rural-Urban area



Source: Prepared by author (based on Census data, 2011)

Figure 7: Degree of Inequalities



Source: Prepared by author (based on Census data, 2011)

6.3. Degree of inequalities:

There are several methods for measuring the degree of inequalities, here only study the very well-known method that is Gini co-efficient. Highest value indicates greater inequalities and vice versa. Table: 5 are showing the literacy inequality of different blocks but this result indicates lower inequality within the blocks. In district level Purulia has maximum inequality among other two districts but is negligible. Maximum and Minimum inequality is found in Jaypur block (0.12) of Purulia district and Daspur-II (0.02) of Paschim Medinipur district respectively (Table 5). Fig. 7 portrait the literacy inequalities of different blocks in the study. Further the blocks are classified into five groups.

Table 5: Degree of inequalities of different blocks

C.D. Blocks	Gini co-efficient	C.D. Blocks	Gini co-efficient	C.D. Blocks	Gini co-efficient
Binpur - II	0.09	Saltora	0.09	Jaipur	0.12
Binpur - I	0.1	Mejhia	0.09	Purulia - II	0.08
Garbeta - II	0.08	Gangajalghati	0.08	Para	0.09
Garbeta - I	0.11	Chhatna	0.07	Raghunathpur - II	0.04
Garbeta - III	0.1	Indpur	0.09	Raghunathpur - I	0.09
Chandrakona - I	0.06	Bankura - I	0.09	Neturia	0.09
Chandrakona - II	0.1	Bankura - II	0.06	Santuri	0.09
Ghatal	0.05	Barjora	0.08	Kashipur	0.08
Daspur - I	0.05	Sonamukhi	0.08	Hura	0.06
Daspur - II	0.02	Patrasayer	0.08	Purulia - I	0.08
Keshpur	0.08	Indus	0.07	Puncha	0.07
Salbani	0.09	Kotulpur	0.07	Arsha	0.09
Midnapore	0.1	Jaypur	0.09	Jhalda - I	0.08
Jhargram	0.1	Vishnupur	0.06	Jhalda - II	0.09
Jamboni	0.09	Onda	0.07	Bagmundi	0.1
Gopiballavpur - II	0.07	Taldangra	0.09	Balarampur	0.11
Gopiballavpur - I	0.1	Simlatal	0.09	Barabazar	0.08
Nayagram	0.11	Khatra	0.08	Manbazar - I	0.1
Sankrail	0.08	Hirbandh	0.08	Manbazar - II	0.07
Kharagpur - I	0.06	Ranibundh	0.07	Bundwan	0.1
Kharagpur - II	0.08	Raipur	0.07	Purulia	0.05
Debra	0.06	Sarenga	0.07		
Pingla	0.05	Bankura	0.04		
Sabang	0.04				
Narayangarh	0.07				
Keshiary	0.07				
Dantan - I	0.06				
Dantan - II	0.05				
Mohanpur	0.05				
Paschim Medinipur	0.04				

Source: Computed by author (based on Census data, 2011)

7. CONCLUSION

Paschim Medinipur district is very much ahead of the rate of literacy among the selected district of West Bengal. In terms of literacy rate as well as education level; Sabang block occupies a remarkable place among different blocks of western districts of West Bengal. Not only this, it has occupied the highest place in terms of rural literacy. On the other hand Narayangarh block occupies significant place in terms of urban literacy. Both male and female literacy rate is significantly higher in Sabang than other blocks in the study area which indicates excellence at block level. Sabang block also occupies the highest rank in terms of scheduled caste female literacy. Although Bankura has occupied second rank in overall literacy rate, Sarenga block which belongs to Bankurataken significant place in terms of scheduled tribe female literacy. So the study found, Paschim Medinipur district along with Sabang block is shining on the map of education among others two western districts of West Bengal but Purulia is very pale in this case. For improvement of literacy rate indeed education level of Purulia, needs some significant action. Such as improvement of road approachable school which enhance the accessibility of education institute, schools and classroom environment which encourage school goers and their parents, assure the safety and security of girls' child within school premises and after all aware the people about the education and its benefit for them.

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