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## SPATIAL EXPLORATION OF THE LITERACY INTENSITY OF SUNDARBAN

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**Abstract:** The spatial variations of the literacy intensity of any regions reflect its educational standard and its diverse dimensions of development and Sundarban region of West Bengal is no exception. Education is probably the most important amongst the three elements of human development to quantify the Human Development Index (HDI) for any region. Thus education holds the prime priority for development of all the region and Sundarban is no exception. The literacy level of Sundarban is not far ahead than other backward areas of West Bengal. In the present era of globalization, 'Education for all' has become the matter of human rights. Various developmental schemes of the Central and State Government, like Mid Day Meal (MDM), Sarva Sikhsha Aviyan (SSA) etc. are able to make some positive loop and make a paradigm shift in the educational sector after crossing the first decades of the 21st century. The Sundarban region might be more developed than the present if its literacy echelon and educational sector improves much more. Proper education can make the inhabitants of the region more conscious and aware to do their betterment themselves as well as to save the biodiversity of the mangrove forest area of Sundarban. Thus an attempt has been made to portraint the spatial explorations and developmental scenario along with the regional disparities of the literacy status of Sundarban in the present paper.

**Key words:** Education, HDI, Spatial intensity, Regional disparities, Sundarban

### Introduction

Education is one of the main elements among the three to measure Human Development Index (HDI). Thus education holds the prime priority for development of all the region and Sundarban is no exception. So far the educational standard is concern, all the blocks are not highly developed and henceforth they are not equally enlightening for the advancement of the society and strengthening the economic base of Sundarban. Sundarban should be more developed than the present if its educational sector improves much more. Proper education can make the people aware and more conscious about their betterment and necessity to save the forest area of Sundarban.

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Sundarban is the largest mangrove swamp in the World. It is also famous as 'Biosphere Reserve' and 'World Heritage Site' (Mandal & Ghosh, 1989). The area has unique scenic beauty with unanimous physical, biological and socio-economic importance since very past (Hunter, 1875[1998]). The Sundarban of India covers parts of North and South 24 Parganas of West Bengal with an area of 9630 km<sup>2</sup> (De, 1994). The Indian Sundarban contains 120 islands of which only 54 islands are inhabited by about 3.7 million people (according to 2001 census) in about 4493.6 km<sup>2</sup> area (Das, 2006). But the present growth rate of population in West Bengal is ensuring its large volume with some adjoining surprising features which might result as aftermath of development in the educational sector. It is estimated that more than 67 per cent population of the region belongs to underdeveloped community spread over 19 blocks (six blocks from North 24 Parganas & thirteen blocks from South 24 Parganas) (Kanjilal, 1999a) (Kanjilal, 1999b) (Kanjilal, 2000). So far the educational standard is concern, all the blocks are not highly developed and henceforth they are not equally enlightening for the advancement of the society and strengthening the economic base of Sundarban.

The biodiversity of Sundarban can only be saved if the inhabitants of the locality are aware of it (Sarkar, 2002). Thus, educational standard of Sundarban pupil is not only able to raise their living standard and income opportunity but also save this unique area with its proper identity by restricting mangroves from human grievance (Mukherjee, 1969).

Thus education holds the prime priority for development of all the region and Sundarban is no exception. The educational scenario of Sundarban is not far ahead than other backward areas of West Bengal. In the present era of globalization, 'Education for all' has become the matter of human rights. Various developmental schemes of the Central and State Government, like Mid Day Meal, Sarva Sikhsha Aviyon etc. are able to make some positive loop and make a paradigm shift in the educational sector after crossing the first decades of the 21<sup>st</sup> century.

### **Study Area**

All the 19 blocks of Indian Sundarban, six from North 24 Parganas and thirteen from South 24 Parganas are taken into consideration for the present study. The Sundarban of India covers some parts of North and South 24 Parganas of West Bengal with an area of 9630 km<sup>2</sup>. It consists of 120 islands of which only 54 islands are inhabited by about 3.7 million people (according to 2011 census, the figure of inhabitants became 4.2 million) in about 4493.6 km<sup>2</sup> area according to

2001 census. It is estimated that more than 67% population of the region belongs to underdeveloped community.

### **Objectives**

The main objectives of the present study are:

- To find out the spatial variation in proportion of male-female literacy status.
- To examine the concentration of female literacy in each and every block of Sundarban.
- To work out the spatial literacy gap between male and female.
- To observe the status of school level education in the corresponding blocks of Sundarban.

### **Methodology**

The present study was conducted with the help of primary and secondary data. Education related data was collected from District Statistical Handbook of South and North 24 Parganas, 2006, 2007 (published in 2011). Moreover to collect the primary data to picture out the educational standard at school level, field visit was conducted in Gosaba, Basanti and Mathurapur-II blocks of Sundarban in 2011 to 2012.

### **Spatial Dimension of Educational Standard**

The overall development of Sundarban is largely dependent on its education, since there is positive relation exists among them. Education can generate more employment opportunity to the inhabitants. Other infrastructural development should also correlate with education. Not only employment opportunity, but also better mental improvement will also occur due to education. In Sundarban, children are often bound to leave education at a very low age and join their parents for income related activities. Moreover, marriage of girls at a very low age also occurs due to lack of proper education. There are so many superstitions present in every sphere of life of Sundarban and these can be removed only by better education.

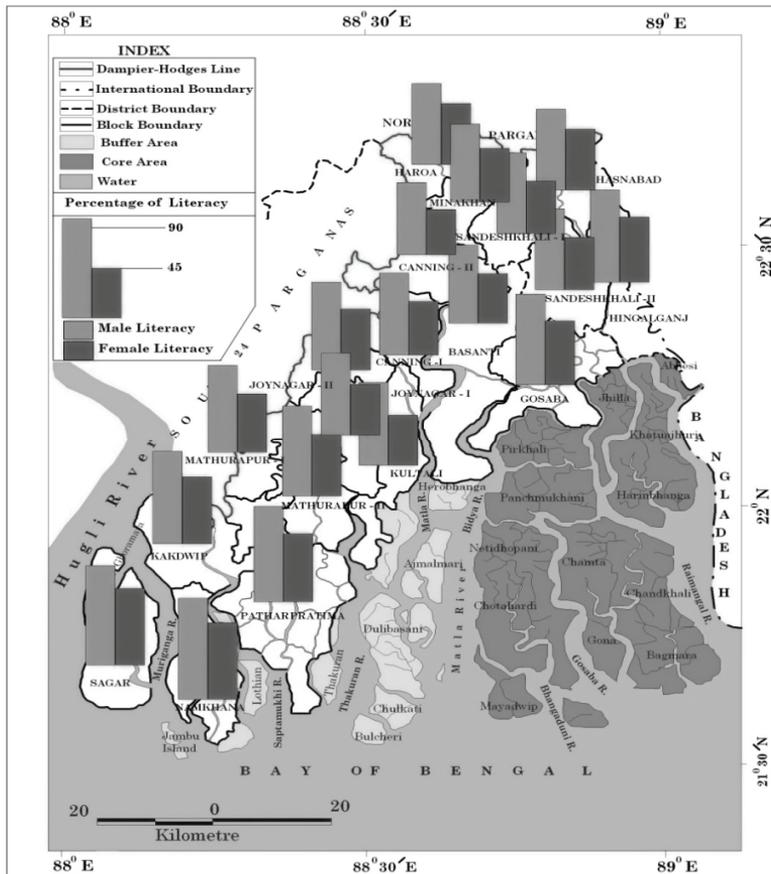


Figure 1. Proportion of male female literacy, 2001 (Data Source: District Statistical Handbook, 2006)

### Male Female Literacy

The proportion of male-female literacy of all the 19 blocks of Sundarban was judged to observe its variability. The results show that males are more literate than the female in all the respective blocks of Sundarban. Sagar, Namkhana, Patharpratima, Kakdwip and Hingaljanj blocks have recorded quite high percentage and Kultali, Basanti, Canning –II blocks have low male and female literacy than the other corresponding blocks. The disparity in the male-female literacy creates literacy gaps which affect the developmental scenario of Sundarban (Figure 1).

**Female Literacy.** Level of educational development of any region is best understood by the female literacy. Female literacy of the region not only reflects

the standard in the education sector but also the overall development of the region. Female literacy rate is not so good in the Sundarban blocks (Figure 2). All the blocks of Sundarban are thus divided into five classes, like on table 1.

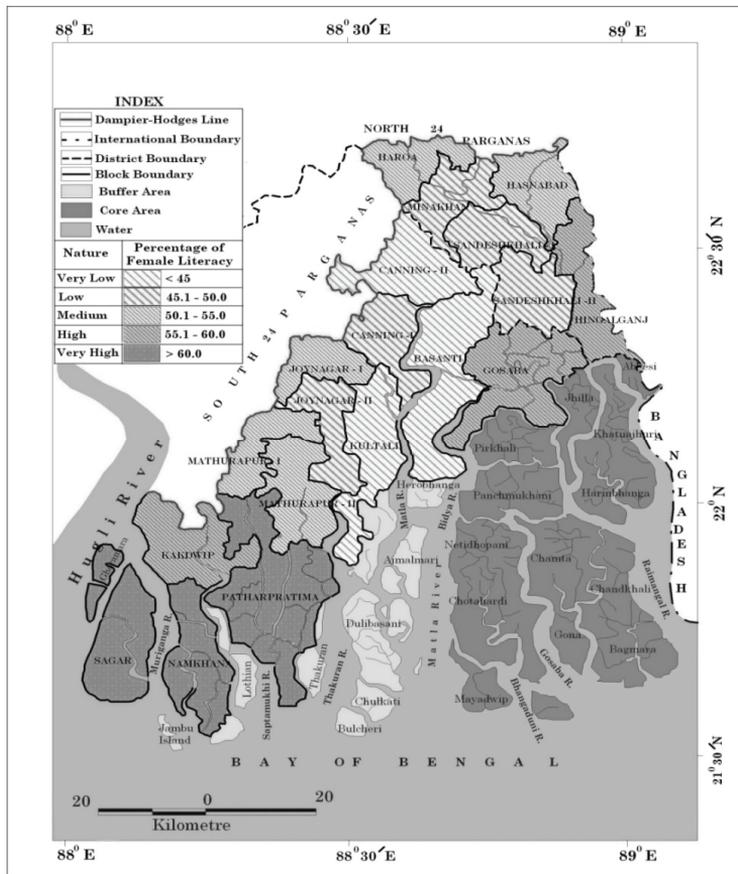


Figure 2. Female literacy rate, 2001 (Data Source: District Statistical Handbook, 2006)

Highest female literacy was found in Sagar, Namkhana and Patharpratima block, whereas the lowest was observed in Kultali, Basanti and Canning-II block. Female literacy was high in Kakdwip, Gosaba and Hingalganj block and low in Canning -I, Minakhan, Joynagar -II, Sandeshkhali -I and II block. Remaining five blocks belong to the moderate category. The trend of female literacy of Sundarban is quite low. It is to be noted that the blocks of south and western Sundarban are in better condition so far the female literacy is concerned.

Table 1. Female literacy rate of Sundarban

Ranges	Nature and degree	Blocks	No. of blocks	Percentage to total
> 60.0	Very High	Sagar, Namkhana, Patharpratima	3	15.79
55.1–60.0	High	Kakdwip, Gosaba, Hingalganj	3	15.79
50.1–55.0	Moderate	Mathurapur-I and II, Joynagar-I, Haroa, Hasnabad	5	26.32
45.1–50.0	Low	Canning–I, Minakhan, Joynagar–II, Sandeshkhali–I and II	5	26.32
< 45.0	Very Low	Kultali, Basanti, Canning–II	3	15.79

Source: Computed and tabulated by the author

**Disparity in Male-Female literacy.** Male-female disparity index is done by Sopher’s Disparity Index Method to measure the level of inequality or disparity. Male-female disparity of literacy rate has been calculated for all the 19 blocks of Sundarban on the basis of percentage of literacy of male and female according to 2001 census data (Figure 3). The index value ranges from 0.18 (occupied by Hasnabad block) to maximum 0.32 (Kultali block). The calculated disparity value can be arranged in ranges like on table 2.

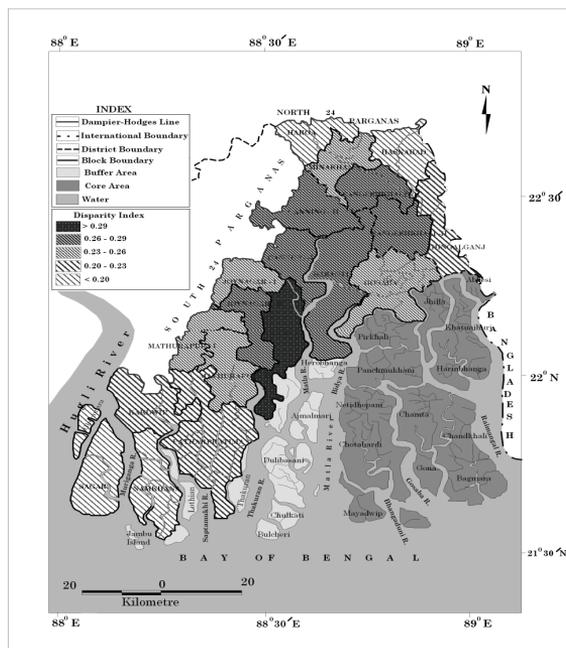


Figure 3. Disparity in male-female literacy, 2001 (Data Source: District Statistical Handbook, 2006)

Table 2. The Male Female Literacy Disparity

Ranges	Nature and degree	Blocks	No. of blocks	Percentage to total
> 0.29	Moderately High	Kultali	1	5.26
0.26–0.29	High	Basanti, Canning–I and II, Joynagar–II, Sandeshkhali–I and II	6	31.58
0.23–0.26	Moderate	Gosaba, Joynagar-I, Mathurapur-I and II, Minakhan	5	26.32
0.20–0.23	Low	Kakdwip, Patharpratima, Hingalganj	3	15.79
< 0.20	Very Low	Namkhana, Sagar, Haroa, Hasnabad	4	21.05

Source: Computed and tabulated by the author

**Literacy Gap.** The male-female literacy gap can be defined as the difference between the two in terms of literacy ratio. The male-female literacy gap helps to understand the disparity in the educational sector (Figure 4). It also reflects the socio-economic background of the region and the constraints of the improvement in the sector. All the blocks are grouped in five categories of male-female literacy gaps, like on Table 3.

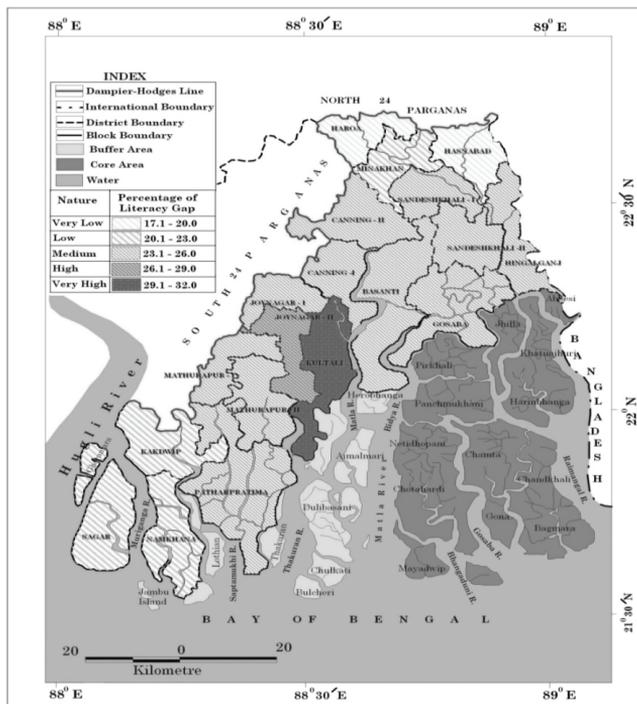


Figure 4. Male-female literacy gap, 2001 (Data Source: District Statistical Handbook, 2006)

### Status of Education

The literacy rate as well as status of education of the entire Sundarban region was quite low. Due to the remoteness, less accessibility and poor connectivity, shortage of money, less educational facilities and emphasis on income generation, most of the people are less educated or illiterate. A greater proportion of the inhabitants are just primarily educated. Moreover, it is important to note that the proportion of illiterate is much less among the youngest population (10–14 years) implying that children of the surveyed household have now better access to school education compared to their parents (Figure 5). The progress in educational attainment overtime is also evident from the results that a few percentages of males aged 50 and above could complete their school education in comparison to the low aged members. Recently due to mid day meal and other government programme related to education, the gender gap in literacy was decreasing across the age groups.

Table 3. Male-female literacy gaps of Sundarban blocks

Ranges	Nature and degree	Blocks	No. of blocks	Percentage to total
17.1–20.0	Very Low	Haroa, Hasnabad	2	10.53
20.1–23.0	Low	Kakdwip, Namkhana, Sagar, Minakhan	4	21.05
23.1–26.0	Moderate	Gosaba, Basanti, Joynagar-I, Mathurapur-I and II, Patharpratima, Canning-I and II, Hingalganj, Sandeshkhali-I and II	11	57.89
26.1–29.0	High	Joynagar-II	1	5.26
29.1–32.0	Moderately High	Kultali	1	5.26

Source: Computed and tabulated by the author

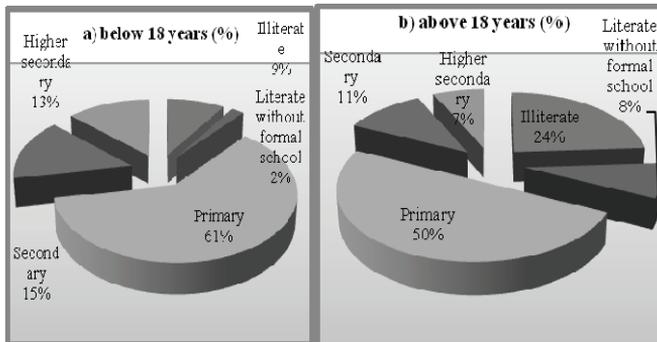


Figure 5. Education Level of the household members Data source: Primary Survey, 2012

### **Existing Scenario of School Level Education in Sundarban**

The educational scenario of Sundarban is not far ahead than other backward areas of West Bengal. As the concentration of poor people is very high in each and every blocks of Sundarban, educational status of the area is not so good. The intra-block feature represents the overall scenario of every block. The well connected blocks of Sundarban reflects somehow better situation than the overall Sundarban's picture. In case of the Sundarban blocks of South 24 Parganas, the funds allotted by the Zilla Parishad shows that the blocks of extreme southern Sundarban has been given more priority than the northern and eastern blocks of the district as Patharpratima block which has covered almost 50% of the total funds allotted in the purpose.

#### *School Sanitation Development of Sundarban*

A map was prepared on the basis of school sanitation under TSC according to 2007 data to represent development of school sanitation of Sundarban. The dots in the map shows the regional variation of sanitation facilities in the schools were one dot is similar to 20 schools in the map (Figure 6). These sanitary facilities were introduced in the primary schools, ICDS, SSKs, MSKs, Junior High, High, Higher Secondary schools, Madrashes of all the 19 blocks of Sundarban. The maximum concentration of dots is shown in the Patharpratima block. Sagar and Kakdwip follow the same path of Patharpratima with the second and third in regard to concentration ratios respectively. Relatively lower concentration of the dots is noticed in the blocks of North 24 Parganas than the South 24 Parganas. Therefore it can be stated that school sanitation was more successfully operated in the Sundarban blocks of South 24 Parganas.

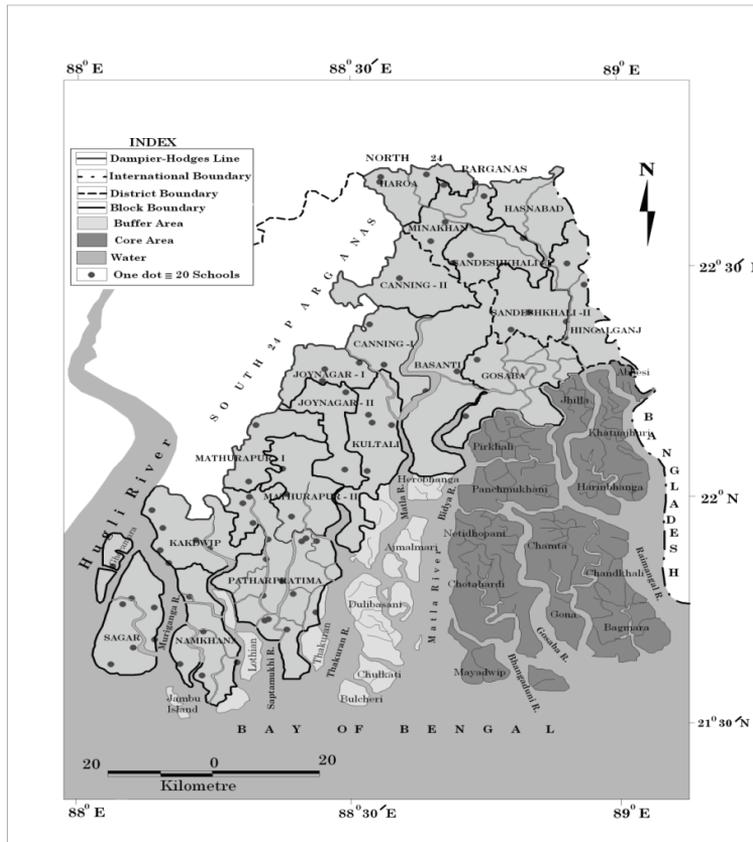


Figure 6. Development of sanitation in school of Sundarban (Data Source: District Level Review of Various Development Programme, 2007)

According to 2007, Primary schools are present in each and every block in good number. Patharpratima block has the highest number of primary schools followed by Sagar block. On the other hand child education is in very poor condition in Canning-II and Joynagar-II block as their primary schools are very few. The blocks of Northern Sundarban have better situation than the Southern Sundarban as their number of primary schools are more. ICDS are present in less quantity only in seven blocks. Number of SSKs is highest in number in Patharpratima block followed by Kakdwip block. Whereas the presence of MSKs are very few in comparison to SSKs. Total numbers of high schools are also very few in the overall Sundarban. Only Kakdwip and Patharpratima block has relatively good number of high schools. School sanitation in madrasa and even the community latrine is not present in all the blocks of Sundarban.

### Educational Development at Micro Level

There are intra-regional (GP or Mouza wise) variations in literacy rate. The males of the block are comparatively more literate than the females. The comparative analysis of literate people indicates that high literacy rates are able to take up a good association which effects in the birth rates. Cost of education, types of economy, standard of living, degree of transportation and communication development, religious background, political background, status of women in the society, prejudices against the females' mobility and education, availability of educational institutions etc. may be the reasons of controlling factors so far the literacy of the region is concerned.

In the 2011 census, the level of literacy has improved a little bit and this is mostly due to the implementation of some programmes in the education sector (District Human Development Report, 2009). The literacy rate by sex for 2001 and 2011 at a glance for North, South 24 Parganas and Kolkata of West Bengal are given below (Table 4).

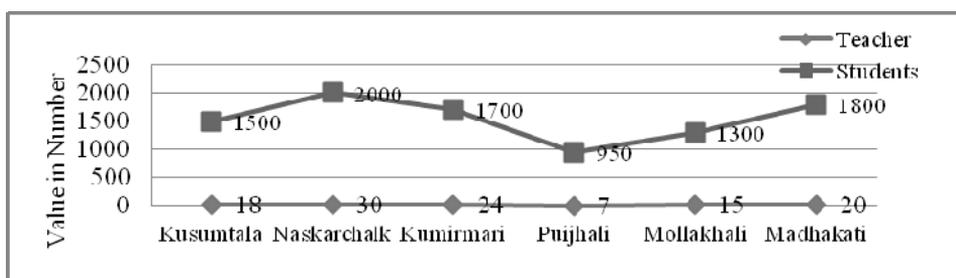


Figure 7. Ratio of Teacher-Student at Primary Schools, 2012 (Data Source: Primary Survey, 2012)

Table 4. Literacy rate of the two corresponding districts of Sundarban

District	Literacy Rate (%) Excluding 0-6 Population 2001			Literacy Rate (%) Excluding 0-6 Population 2011		
	<i>P</i>	<i>M</i>	<i>F</i>	<i>P</i>	<i>M</i>	<i>F</i>
<i>West Bengal</i>	68.64	77.02	59.61	77.08	82.67	71.16
<i>North 24 Parganas</i>	78.07	83.92	71.72	84.95	88.66	81.05
<i>South 24 Parganas</i>	69.45	79.19	59.01	78.57	84.72	72.09
<i>Kolkata</i>	80.86	83.79	77.30	87.14	89.08	84.98

Data Source: Census of India 2011

In North 24 Parganas, a total of 6% improvement was marked in the literacy rate among which males are greater in proportion, whereas in South 24 Parganas the value is almost 9% among which females have improved more than the males.

Therefore, it could be said that blocks of South 24 Parganas have improved more in the literacy rate than that of North 24 Parganas.

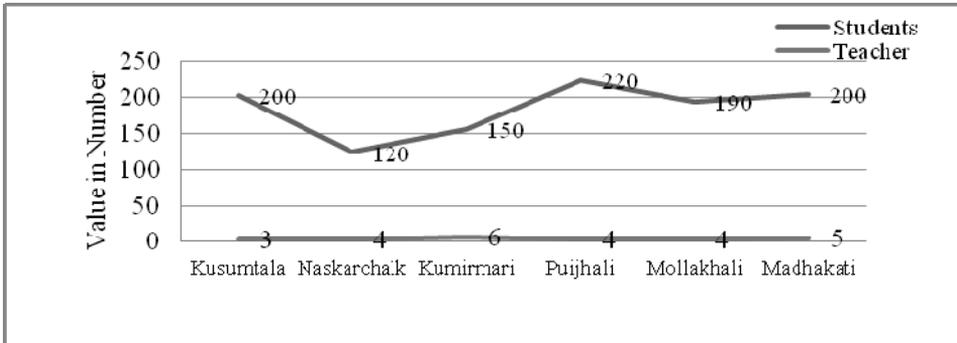


Figure 8. Ratio of Teacher-Students at H.S. Schools, 2012 (Data Source: Primary Survey, 2012)

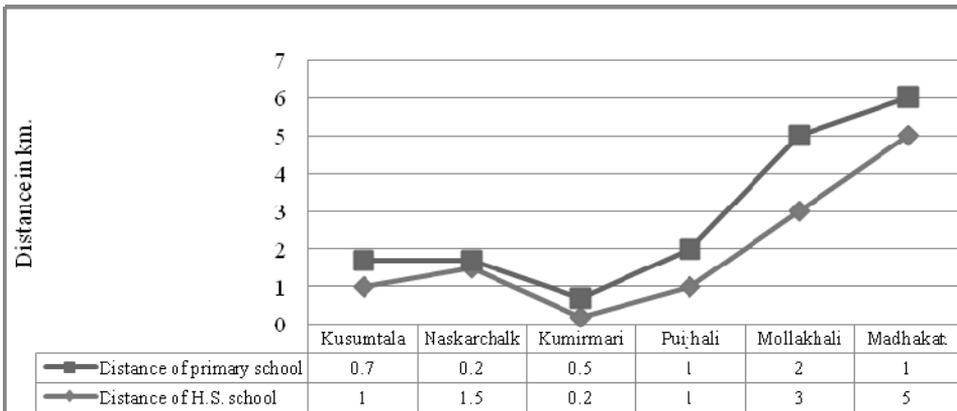


Figure 9. Distance of Nearby Primary and Higher Secondary Schools, 2012 (Data Source: Primary Survey, 2012)

In the male-female literacy comparison, males have acquired the better position in attending school from the below primary level to even some technical, non-technical and computer education. Now a day the Pupil: Teacher, School: Teacher and Student: Space ratio at primary and upper primary level reflects the change in the social life as well as thinking status of the people (Figure 7, 8 & 9). Educational institutions for higher studies reflect its poor condition, which need to be improved immediately. The mid day meal policy introduced by the government also helps to attract the students to school and act as a successful policy particularly at primary school sectors of the block. The average level of achievement in life expectancy, educational attainments and income level

between men and women of each GP display that more attention is needed for the human development of such rural area.

### Conclusion

In the male-female literacy comparison, males have acquired the better position in attending school from the below primary level to even some technical, non-technical and computer education. Now a day the Pupil: Teacher, School: Teacher and Student: Space ratio at primary and upper primary level reflects the change in the social life as well as thinking status of the people (Figure 7, 8 & 9). Educational institutions for higher studies reflect its poor condition, which need to be improved immediately. The mid day meal policy introduced by the government also helps to attract the students to school and act as a successful policy particularly at primary school sectors of the block. The average level of achievement in life expectancy, educational attainments and income level between men and women of each GP display that more attention is needed for the human development of such rural area.

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