

## Chapter-4

### **District Level Variation in Elementary Schooling and Literacy Rate in West Bengal.**

#### **4. Introduction & Need for the Study**

In analyzing the literacy pattern and elementary education in India in the previous chapter, certain specific educational variations has been observed for the state of West Bengal providing sufficient reasons to study the nature and causes of such variations within the state.

The decennial census data on literacy shows that over the last five decades, the literacy rate of West Bengal has been remaining closer to the national average and the overall gain in literacy rate (Person) over the last 50 years (1951-2001) in the state is more or less the same as that of the national level (Figure-4.1). Besides this, as per the literacy data of 2001, the state shows a large variation in respect of educational outcomes. District level literacy rate varies from a lowest of 47.9% in Uttar Dinajpur to a highest of 78.1% in North 24 Parganas (excluding the metropolitan district of Kolkata) with of course a large extent of literacy variation at block and village level too. This captures the central theme of the present study. The state has certain unique characteristics so far as literacy and educational achievements are concerned. They are –

1. The state was in the third position after Kerala and Delhi among the other major States in 1951. Now in 2001, it has come down to the 9th rank among the 21 major States in India.
2. The State could barely manage its position around the National average throughout the last decades.
3. The analysis of literacy achievement index shows that West Bengal being much closer to the country's national average but lies below the average national achievement level.
4. The analysis of principal components in which district literacy indices were constructed shows that, West Bengal has been one of the states where none of the districts ranked in the high LDI group in both 1991 and 2001.
5. It is also stated that so far as the primary completion rate in the Indian States is concerned, West Bengal has been remaining just above the national average and very much closer to the national rate. In respect of dropout rate at primary level, West Bengal occupies 13th position among the major States and it even did worse than Jharkhand, Assam, Bihar, Madhya Pradesh etc.
6. Finally, the analysis of Education Development Index of NUEPA (based on the DISE data 2005-06) categorically stated that West Bengal has been registering itself at the rank 19, just above its neighboring two most underdeveloped states among the 21 major States. Thus the question remains as to why the state of West Bengal with a moderately high literacy rate at 68.64% (9th among the 21 states in 2001) has conflicting reality in the field of elementary school education.

The EDI published by the NUEPA has placed the state as one of the low ranking states in India. The state has barely managed its 32nd rank out of 35 Indian States and Union Territories. The district wise EDI also draws a very sorry picture for the State. In computing the district level EDIs, the indexing and accordingly ranking covers 569 districts across 27

States and Union Territories, the rest of the districts could not be considered because of data limitations and non-availability of information on child population. The district specific EDI reveals that none of the districts across nine of the states found a position in the first 143 districts (Top Most Quartile). These states are Arunachal Pradesh, Assam, Bihar, Jharkhand, Madhya Pradesh, Meghalaya, Orissa, Tripura and West Bengal. All the 19 districts of West Bengal have ranked as low performed districts. The national rank of the district in this respect is shown in Table-4.1.

**Table - 4.1: District level Educational Development Index in West Bengal**

Name of the District	All India Rank	Rank within the State
Kolkata	318	1
Bardhaman	336	2
Hugli	356	3
Paschim Mednipur	366	4
Bankura	388	5
Birbhum	392	6
Haora	409	7
Dakshin Dinajpur	423	8
Cooch Behar	430	9
Nadia	460	10
Jalpaiguri	475	11
Purba Mednipur	476	12
North 24 Parganas	479	13
Siliguri	499	14
South 24 Parganas	501	15
Puruliya	502	16
Uttar Dinajpur	505	17
Murshidabad	506	18
Malda	520	19

Source: - GOWB, 2007

Kolkata has been placed at the top of the list among the 19 districts in the State. However, the all India rank of the district is 318. The 11 districts whose ranks are below 429 are included in the list of 142 Bottom Most Quartile at national level. Five out of six districts of northern part of the state (popularly known as Uttar Banga) have fallen at the bottom most quartile (Table 4.1). Apart from this low performance in the field of elementary education, there is also a large variation in this respect. There is a difference of rank of 200 positions between the high and low performed district (Kolkata and Malda) in the state. This large extent of variation demands an extra attention for focusing the study on this particular state.

All these lead to the conclusion that the state requires a special intervention for bringing it in line with the other better performing states in the country. The problems relating to educational backwardness vary between regions and between groups of people (Sengupta et al, 2001). The present chapter focuses on the particular state of West Bengal and its districts to understand its educational backwardness and the relative backwardness of the districts. All the 17 (incorporating Purba and Paschim Medinipur into one district and excluding the metropolitan district Kolkata) districts of the state are considered as planning units in the district level analysis. Occasional reference is made to the 341 CD blocks in the state and in particular, some specific village level indicators have been added to pinpoint the root of the problem. The studies so far carried out in the concerned area have mostly concentrated either on the most developed states or on the least developed ones (e.g. P.Duraisamy, 1992 on Tamil Nadu cited in Bhatta, 1998; Dreze and Gazdar, 1996 on UP; Unni, Jeemol on Gujarat; Nambissan, Geetha, B, 2001 on Rajasthan; Jabbi and Rajyalakshmi, 2001, on Bihar; Devi, Sailabala 2001, on Orissa). However not much attention has been extended towards this particular state.

#### **4.1 Objectives of the Present Study**

Given the challenges that surround the educational development in the state of West Bengal, this chapter gives special emphasis on this particular state with a view to observe the nature and causes of educational development at a disaggregated level. In particular, the present analysis tries to make an attempt-

- To evaluate the trends of indicators relating to primary education and literacy rate for the period from 1951 to 2001 with a special reference to the literacy panorama of 2001

- To review the differential growth with regard to literacy rates across the districts, blocks and some specific villages.
- To ascertain the nature and intensity of some socio-economic factors explaining the Literacy Variation in West Bengal at district and sub-district level.
- To provide an explanation of educational deprivation in the State at elementary level with reference to the Educational Development Index developed by the NUEPA
- To arrive at conclusions on educational variation and deprivation in the state

In order to capture the above objectives, the present chapter has been designed and farmed out into seven sections. Section I has been presented to introduce the theme of the chapter and the need of the present study in brief. Section II describes the general profile of the State along with some important educational indicators in the State with its relative position in India. Section III has tried to draw the district level trends of development in achieving literacy level over the last 50 years (1951-2001) with a special attention to the literacy variation in the state pertaining to the data of 2001. Section-IV has briefly demonstrated the different dimensions of variation in literacy rate. In Section V, an attempt has been made to determine the socioeconomic factors behind literacy variation in the state at district and sub-district level. Section VI has analyzed the related educational indicators reflecting the elementary education in the State and finally Section VII concludes the analysis by specifying its significant observations and limitations of the study and some suggested policy measures.

#### **4.1.1 Methodology and Data Collection**

As of 2001 Census, the number of districts in India has increased from 466 in 1991 to 593 in 2001 thereby adding 127 new districts over the last 10 years. The State of West Bengal has 18 districts, 341 community development blocks and 37956 inhabited villages as per the census 2001. Kolkata, being a cosmopolitan district in the State, has been excluded from the present district level analysis. The ensuing analysis is based on secondary data. While analyzing the educational development in the State, CD blocks as a unit of analysis have been considered to obtain a detail picture of the problem. Along with this, the study has tried to cover and analyse the data for some specific villages of particular interest. Thus, the whole analysis will try to throw some light on the educational development in the State covering 17 districts and 341 CD blocks. In the process of analysis, the UNDP Methodology of Range Equalization [UNDP 1990, Halder 2008] has been adopted to assess the literacy development of the districts for the period between 1951 and 2001. Apart from this, the multiple regression analysis has been attempted for determining the associated socio-economic factors of educational variation and deprivation in this state. The census data of different years along with the data published by the NUEPA have been used. Some other sources have also been used such as Department of School Education, Government of West Bengal, Development and Planning Department, Government of West Bengal, different international agencies like UNDP, UNICEF and UNESCO etc.

#### **4.2 General Profile of the State of West Bengal**

The geographical location of West Bengal shows a wide range of diversity. West Bengal is on the eastern bottleneck of India, stretching from the Himalayas in the north to the Bay of Bengal in the south. Two northeastern States- Assam and Sikkim- lie in its northeastern part. In the west, it borders the State of Jharkhand and Bihar and to the southwest, the state of Orissa has its boundary with the. This state has its international border with three countries namely, Bangladesh on its eastern border, Bhutan on its northeastern border and Nepal in the northwest.

Agriculture is the prime occupation in West Bengal. Rice is the State's principal food crop. Other food crops are pulses, oil seeds, wheat, and potatoes. Jute is the main cash crop of the region. Tea is also produced commercially in this state especially in Darjeeling, Jalpaiguri and in a part of Uttar Dinajpur district. However, the service sector is the largest contributor to the gross domestic product of the state, contributing about 51% of the state domestic product compared to 27% from agriculture and 22% from industry. A significant part of the state is economically backward,

namely, large parts of six northern districts of Cooch Behar, Darjeeling, Jalpaiguri, Malda, Uttar Dinajpur and Dakshin Dinajpur; three western districts of Purulia, Bankura, Birbhum; and the Sundarbans area ([http://en.wikipedia.org/wiki/West\\_Bengal](http://en.wikipedia.org/wiki/West_Bengal)).

**Table – 4.2: Socio-economic indicators in India & West Bengal**

INDICATORS	WEST BENGAL	INDIA
Geographical Area (2001) in Km <sup>2</sup>	88752.00	3065027.00
Population, 2001.	80176197	1028610328
Decadal Growth Rate of population (1991-2001)	17.77	22.66
Density of Population 2001 (Persons per km <sup>2</sup> )	903	336
Percentage of SC to total population, 2001.	16.2	23.02
Percentage of ST to total population, 2001	8.2	5.5
Sex Ratio (No. of Females per 1000 Males), 2001.	934	933
(0-6 age) Child population as percentage to total population, 2001.	14.24	15.93
Life expectancy at birth (2001-06)#	66.08	63.87
Infant mortality rate (per 1000 live births) male-female-total, 2000#	54-47-51	67-69-68
Birth rate, 2000. #	20.7	25.8
Death rate, 2000. #	7.0	8.5
Percentage of population lying below the poverty line (1999-2000)*	27.02	26.10
Percentage of Main Workers to total population	28.72	30.43
Percentage of Marginal Workers to total population	8.05	8.67
Percentage of Non- Workers to total population	63.23	60.90
Percentage of Cultivators to Total (Main & Marginal) Workers, 2001.	19.18	31.65
Percentage of Agricultural Labourers to Total (Main & Marginal) Workers, 2001	24.97	26.55
Percentage of Household Industry workers to total workers (main & marginal), 2001	4.1	3.18
Proportion of population earn less than 1\$ per day, 2000#	27.02	34.7

Source: Government of West Bengal, 2004; \* Government of West Bengal, 2002; # Government of India, 2002-03; # United Nations Statistics, 2006

West Bengal has occupied the position of fourth most populous State in India with a population of 80.18 million as per the Census of 2001. As such, the State constitutes 7.79% of the total country's population having only 2.89% of total area thereby demonstrating itself as the State having highest density of population (903 people per km<sup>2</sup>) in the country (Table-4.2). However, the decadal (1991-2001) variation of population in the State is substantially lower (17.77%) compared to the national average (22.66%), which indicates that the State is likely to stabilize the excessive population pressure in future. Among the religious communities, Hindus accounted for 72.47% of the total population followed by 25.25% Muslims and 1.67% others reflecting two major communities in the state (Census of India, 2001). Ninety eight percent of the total population speaks one or more of the five spoken languages in the state, viz- Bengali, Hindi, Urdu, Santhali and Nepali, but the mother tongue of 85% of the population is Bengali (Annual Report 2000-01, Department of School Education, GOWB).

According to the latest Census enumeration, the workforce participation rate (Total main and marginal workers as percentage of total population) in the State is 36.77%, marginally lower than the national average (39.10%). The workforce participation rate also reveals that there are 28.72% main and 8.05% marginal workers and the remaining 63.23% are non-workers (Table – 4.2). Among the total workers, 19.18% (31.65%) are cultivators and 24.97% (26.55%) are agricultural labourers thereby reflecting its weak agrarian base compared to the country as a whole (national figure in parenthesis). It also indicates that the persons engaged in agriculture largely belong to the

category of agricultural labourer in the State. In spite of the massive land reforms, the state is far behind the country as a whole in developing the proportion of cultivator that is still much lower than the national average. At national level, a significance progress has been made in the reduction of extreme poverty as percentage of population who earns below \$1 per day reduced from 42.3% in 1993 to 34.7% in 2000. The figure of 27.02% for West Bengal (2000) is the latest official estimate published by Government of West Bengal in Human Development Profiles 2007. Presently in West Bengal, more than 20 million people live below poverty level.

#### **4.2.1 Educational Indicators in West Bengal and India**

Besides the fact that the literacy rate of the state is marginally higher than the national average, as per the Census 2001, illiteracy exists for 22.98% males and 40.39% females in the age group 7 years and above in the State. A population size (7+age group) of about 2.16 crore is still illiterate of which 1.34 crore are female and this large size of population needs to be literate for making the State fully literate. It may be noted here that total decrease in the number of female illiterates in West Bengal during the last decade (1991-2001) was 11, 31,960 (The Pratiche Education Report, 1, 2002) i.e. a little more than one lakh per year. The report also states that in terms of contribution to the decrease in the number of illiterates in the country, West Bengal ranks 7th position and its contribution is 8.26 percent.

The States ahead of West Bengal in this respect are Andhra Pradesh (16.79), Uttar Pradesh (14.09), Maharashtra (12.48), Rajasthan (11.46), Madhya Pradesh (11.43) and Tamil Nadu (10.66) (figures in the parenthesis shows the percentage contribution). The educational level of rural population in the State shows that it is better at the lower level of education up to the middle school completion. But at stages of high school and above it is considerably below the national average (table-4.3). Again, in spite of its high literacy rate compared to the national average, the median number of years of schooling of the household population in the State (4.7 years) is also lagging behind the national average (5.5 years). Some of the BIMARU States like – Rajasthan, Uttar Pradesh and Madhya Pradesh show comparatively better ranking in this respect (NCERT, 2003).

Accessibility of school within the habitation is quite comparable but the availability of upper primary schools/sections compared to primary schools/sections is very poor in this state. It actually ranks in the bottom position in this respect. Although the dropout rate at primary level is quite high, the apparent survival rate up to grade V and retention rate at primary level

is marginally better as compared to the national average. However, these rates are much better in the advanced states like Kerala, Maharashtra, Himachal Pradesh, Karnataka, Tamilnadu etc. The gender aspect in school enrolment is better in this state. As regards the proportion of female teachers in schools, the proportion in the State is low at only 18.66 % at Elementary level in rural areas which is far below the national average (31.27%). Interestingly, it is seen that the female teachers are mostly concentrated in urban areas both for the State and for the country as a whole (Table – 4.3). To add international flavour to the analysis, the proportion of female teachers at primary level is 48.3% in China, 43.3% in sub-Saharan Africa, 77.9% in Europe and 76.7% in Latin America (World Education Report, UNESCO, 1997). This low proportion of female teacher, especially at elementary level may be considered as one of the reasons for non-fulfillment of Constitutional commitment of UEE even after a long period of more than 50 years. These will get special attention in our district level analysis. With regard to the school level amenities such as facility of drinking water, girls' toilet and computer facilities, the position of the state is much lower than the national average. The only point in favour of the State is that it is performed better in acquiring mere literacy.

**Table – 4.3: Some Important Educational Indicators in West Bengal and India**

INDICATORS	WEST BENGAL	INDIA
Literacy Rate Excluding 0-6 Age Group (In Percentage) – Person	68.64 (18\$)	64.84
-- Male	77.02 (19\$)	75.26
-- Female	59.61 (19\$)	53.67
Decadal Variation In Literacy Rate (1991-2001)	10.94	12.63
Percent Distribution of persons (Rural) aged 7 years and above by level of education (2006-07)#		
Illiterate	29	34.9
Literate Without Formal Schooling	3.1	1.4
Literate But Below Primary	16.9	15.7
Primary School Completed	26.4	17.8
Middle School Completed	15.3	16
Secondary And Above Completed	9.3	14.2
% Of Habitations Having Primary School Within 1 Km 2002*	92.3	87
% Of Habitations Having Upper Primary School Within 3 Km 2002*	79.4	78.1
Gender Parity Index (Enrolment) 2006-07	0.97	0.93
Ratio Of Primary To Upper Primary Schools/Sections 2006-07	5.4	2.5
% of Female Teachers at Elementary Level 2002* Rural-Urban	18.66 - 50.61	31.27 -
% Schools Having Girl's Toilet In School (All Schools) 2006-07	31.47	42.58
% Schools Having Computer In School (All Schools) 2006-07	5.35	13.43
Apparent Survival Rate : Grade V 2005-06	77.16	72.73
Average Drop-Out Rate At Primary Level 2005-06	9.44	8.61
Student-Classroom Ratio : 2005 All Areas : All Managements, All Schools 2005-06@	58	41

Source: # NSS Report No. 527(63/1.0/1): Household Consumer Expenditure in India July 2006 to Jun 2007, Census of India 2001, Final Population Totals, Directorate of Census Operation, Government of West Bengal, 2004; \*7th All India School Education Survey NCERT, New Delhi, 2003. @ Analytical Report 2005-06, NUEPA, New Delhi

Note: \$ denotes the relative rank of the State

### 4.3 Literacy Achievement in West Bengal

#### 4.3.1 Progress of Literacy in West Bengal:

Literacy rate (LR) as provided by the Indian census covers the necessary information of each of the household and as such, it may be considered as one of the important educational indicators that also appear to be a reliable data for educational development. It is remarked that "Literacy skills are fundamental to informed decision-making, personal empowerment, active and passive participation in local and global social community" (Stromquist, 2005, p. 12). Considering its coverage and importance, a brief review of the literacy character of the state as per the Indian census data is given below.

The first census in free India was carried out in 1951 and at that time, only one fourth of the total state population was literate. While in 2001, more than two thirds of the total population (7+ age group) was found to be literate in the state. Over the last 50 years almost all the districts has made a literacy jump of more than 30%, but some of the districts recorded a higher jump than the others. In fact, a heterogeneous increase is being observed across the districts of the state. Now the question is how to measure this heterogeneity in literacy development among the districts. A simple difference between a particular period of time does not include the development aspect and also if the simple method of measuring the growth rate [viz.  $(Y1-Y0)/Y0 \times 100$ ] is considered,

some of the least developed districts (e.g. Malda, Uttar Dinajpur) may even register higher rate of growth than the mostly developed districts (e.g. Kolkata, North 24 parganas). In order to get rid of the problem of measurement, the UNDP Methodology of Range Equalization [UNDP 1990, Haldar, 2008] has thus been adopted.

For this, the following formula in measuring the progress of relative achievement of literacy rate is considered-

$$Z_i = [\text{Actual } X_i - \text{Min } X_i] / [\text{Max } X_i - \text{Min } X_i],$$

where  $X_i$ =Literacy Rate of the  $i$ -th district for a particular time point.  $Z_i$  is an index that measures the relative position of a particular district. It may be called the achievement index of a district.

By using this formula, firstly, the relative position of all the districts at six points of time (viz. 1951, 61, 71, 81, 91 and 2001) has been calculated separately for rural and urban frame. In analyzing the literacy trend, the district as a whole is often taken as a unit of measurement by taking both rural and urban areas within the district. However, it may produce some confusing result. For example, the lowest rank as per the achievement index of rural and total literacy of Uttar Dinajpur district is lowest (i.e. 17) as per Census 2001. However, it ranks 10th in case of urban literacy achievement, which implies that there is a large variation in literacy development in the rural and urban areas of this particular district. In order to capture this rural urban variation, separate ranks of each district have been constructed for rural and urban areas. Based on the values of  $Z_i$ s, each district has been ranked for the six consecutive census years. The result for each district is graphically plotted in the following two figures (Figure-4.1 & Figure-4.2). It may be noted here that Kolkata is entirely an urban district and is therefore not included in the rural framework. Two districts, namely, West Dinajpur, 24 Parganas were bifurcated after 1990, and as such, the data up to 1981 was the same for Uttar Dinajpur and Dakshin Dinajpur and similarly for North and South 24 Parganas.

Both the rural and urban areas of Darjeeling district have maintained its relatively better rank throughout the five consecutive decades of time (1951-2001). The urban areas are marginally better compared to the rural areas although there has not been much rural urban gap in literacy achievement throughout the period under consideration.

In Jalpaiguri, the index became lower and accordingly the relative position of the district appeared to be deteriorated after 1971 both for the urban and rural areas. This deterioration is much worse in the urban areas compare to its rural part. Kochbehar being a relatively better-developed district in respect of urban literacy achievement index is comparatively in middle rank (10 in 1951 and 8 in 2001) so far the rural areas are concerned. Uttar Dinajpur is a newly bifurcated district after 1991(part of West Dinajpur). Its relative position in respect of urban literacy rate (10) is comparatively better than its rural part (lowest i.e. 17). Dakshin Dinajpur is also a bifurcated district (part of West Dinajpur) and in 2001 it urban literacy index positioned it at the fourth rank but the rural rank of the district is comparatively poor (11). In Malda district, a continuous bottom most rank is being observed in respect rural literacy rate while there is a decreasing trend in achievement of urban literacy has been seen. Both the rural and urban rank of Murshidabad district is much higher thereby reflecting its relative worse position throughout the last 50 years. The policy measures that have been taken in this district do not appear to yield any positive result.

The same is true for Birbhum district also. The trend of literacy achievement of Bardhaman district compare to the other district, specially after 1981 in urban areas, have been deteriorating in spite of taking enormous measures to make this district fully literate. Although it's rural part has somehow managed the fourth to seventh rank throughout the last 50 years. The comparative position in achieving the rural literacy rate for the districts Bankura and Purliya is almost remaining the same throughout the last 50 years and no positive development is being noticed during the period. Mednipur, Nadia, North 24 Parganas and Hugli are the districts of West Bengal where both rural and urban achievement in literacy rate have been gradually becoming better during the last 50 years (1951-2001). Along with this, the district Haora has also shown the same trend in its urban part (it is a semi urban district). These five districts along with the northern Darjeeling district have been reflected as the better developing districts in the state. The policy

measures adopted in the whole part of north Bengal (excluding Darjeeling) along with Puruliya, Birbhum and Bankura does not appear to be much enhancing in developing the literacy rate of these areas.

**Fig. 4.1: Trend of Rank as per the Achievement Index of Literacy Rate across the Districts of West Bengal (Urban): 1951-2001**

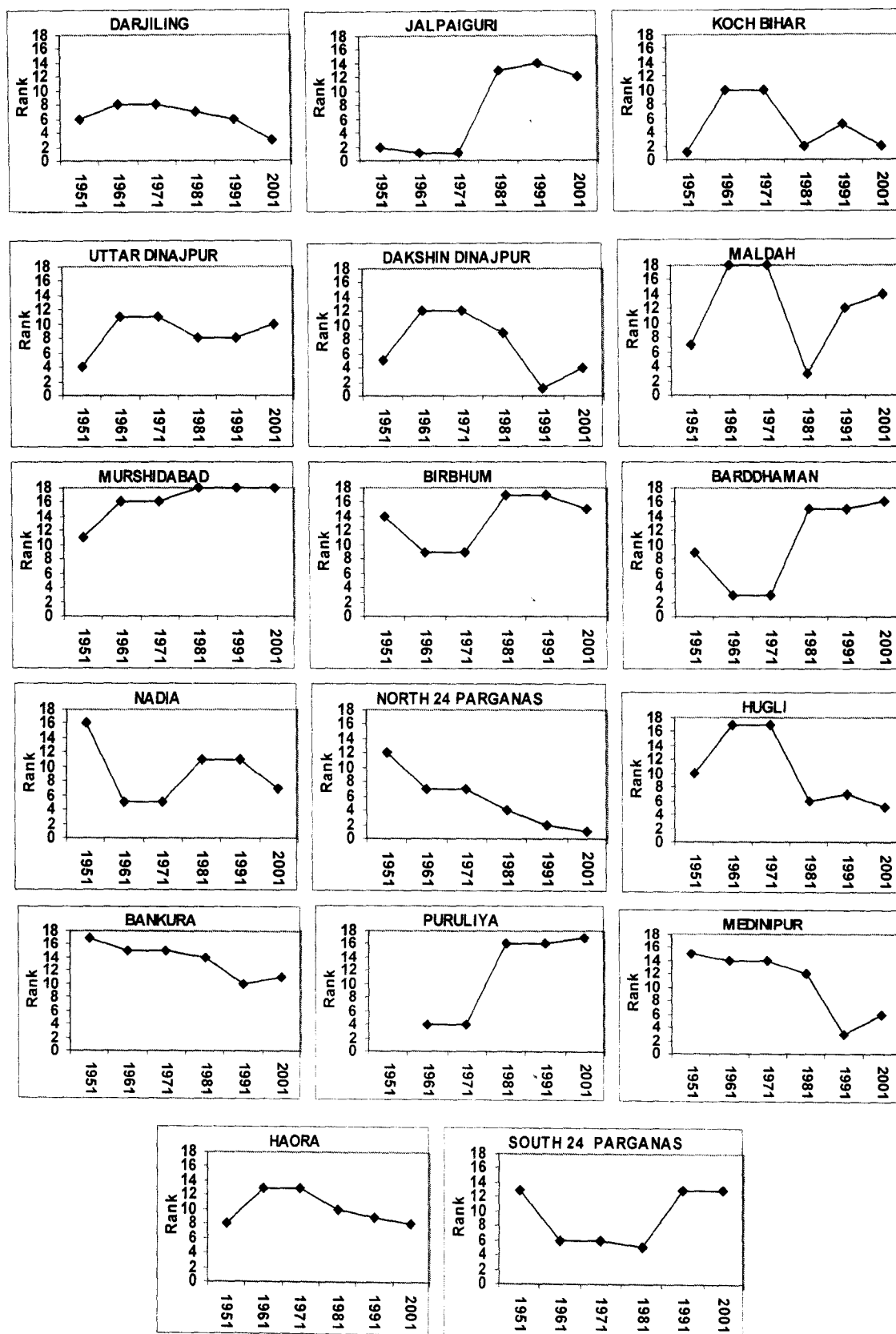
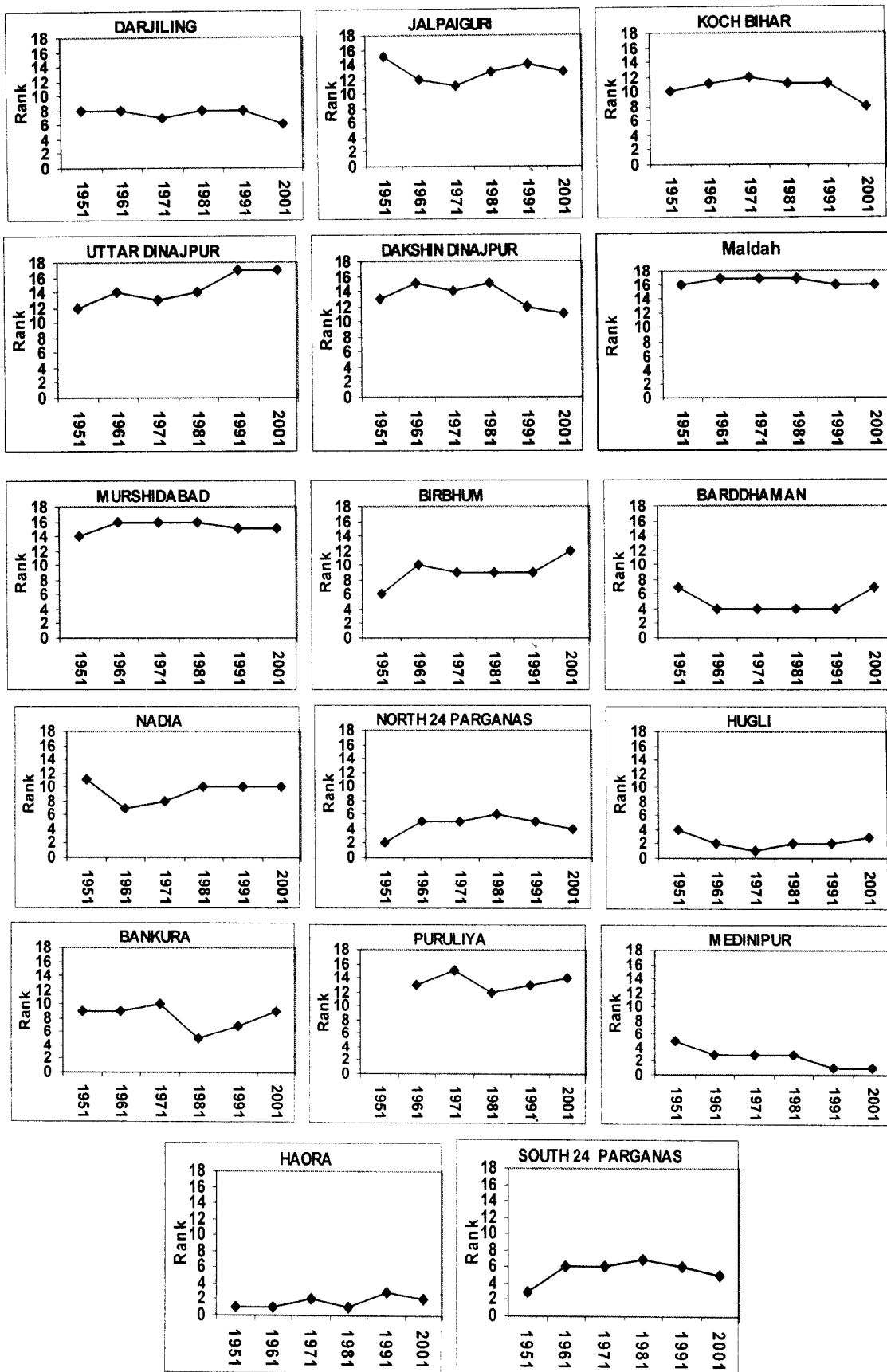




Fig. 4.2: Trend of Rank as per the Achievement Index of Literacy Rate across the Districts of West Bengal (Rural): 1951-2001

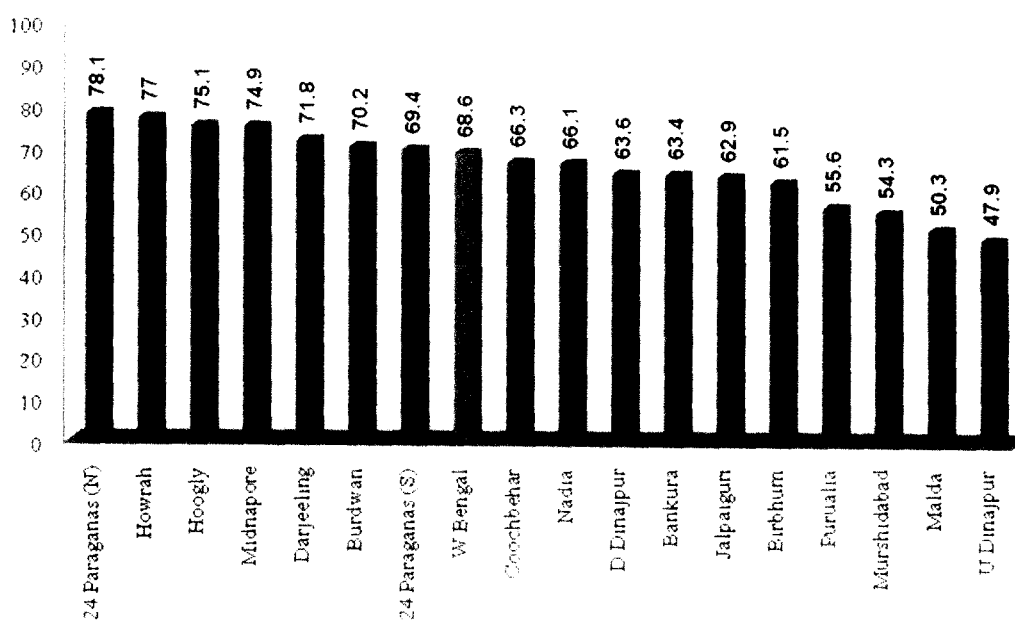


In all the rank analysis shows that Murshidabad, Maldah and Uttar Dinajpur is the three districts whose rural rank in literacy achievement during the last 50 years almost remain in the bottom position. So far the urban trend of literacy achievement is concerned, Murshidabad and Maldah again retain at the bottom most position throughout the census periods. Uttar Dinajpur in this respect is well ahead compare to the above two districts.

### 4.3.2 Literacy Spectrum of the Districts of West Bengal, Census 2001

As per the Census 2001, the State has its 66.8% of population as literate thereby leaving 33.2% people illiterate. So far the district level literacy rate is concerned, North 24 Parganas has the highest LR (78.1%) and Uttar Dinajpur with a literacy rate of 47.9% has been registered at the bottom most position in this respect. The above two districts maintain their respective position in respect of female literacy rate too. As per the Census 2001, among the 17 districts, 10 districts have the literacy rate below the state average (Fig-4.3) and out of these 10 districts, five are from the northern part of the State which is popularly known as North Bengal or Uttar Banga. It may be noted here that the Uttar Banga region has six districts of which 5 are lying below the State average literacy rate.

Fig-4.3: District Literacy Rate in West Bengal, 2001



Source: Census of India 2001, Final Population Totals, West Bengal, Directorate of Census Operation, West Bengal, 2004

### 4.3.3 Gender bias in literacy rate

A close looks at the regional and gender aspect of literacy rate as revealed in Census 2001 is undertaken next. The district wise regional pattern and gender reflection of literacy rate is shown in Table- 4.4.

It has been said that female illiteracy is a problem not just for the girls and women themselves; rather it is a problem for the society as a whole. In this context Dreze and Sen (2002) remarked, ‘Women’s empowerment can positively influence the lives of not only women but also of men and of course those of children’. In India, it is well documented that there is a gender gap in educational status irrespective of which particular index of educational attainment is used. Accordingly, all the States and Union Territories belonging to India have also been suffering from

this discriminating problem. In our focused area (West Bengal), the male-female literacy gap is 17.41% which is significantly lower than the national average (21.59%) as per Census 2001.

The traditional approach of calculating gender differential in literacy rate is the simple mathematical difference between male and female literacy rate. Based on this approach, the gender gap for the last six decades has been calculated and depicted in table 4.4. It has been shown earlier that all the districts has been experiencing a considerable increase in literacy rate for both male and female with of course some variations. But it is seen from the trend of gender gap (column- 2 to 7 Table 4.4) that some districts are found where the gap has increased (Nadia, Jalpaiguri, Maldah, Bankura, Medinipur) in spite of a substantial increase in literacy rate over the last six decades. Again, if we look at only 2001, it is seen that there is a large variation in male-female literacy gap across the district and this varies from the highest in the district of Purulia at 37.2% to the lowest in 24 Parganas (N) at 12.2% point (column 7 of able- 4.4).

However, this itself does not reflect anything more than the relative positions of the districts in terms of gender differentials in literacy. For example, Murshidabad with a gender gap of 13.1% has maintained a relatively better position in respect of gender gap than all other districts except North 24 Parganas and Nadia. But, the literacy rate of Murshidabad is lower than other districts except Uttar Dinajpur and Malda (Fig-4.3). Similar situations are present in some other districts too (Nadia, Malda and Birbhum). Thus, the measure of gender gap in literacy rate is not sufficient to explore the literacy achievement of a particular district.

**Table- 4.4: Gender Aspect in Literacy Rate: 1951-2001**

Districts/ State	Gender Gap (MLR - FLR)						Gender Disparity Index (MLR - FLR)/TLR*100					
	1951	1961	1971	1981	1991	2001	1951	1961	1971	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12	13
Darjiling	24.0	28.2	21.0	21.9	19.2	17.1	105.7	83.7	54.6	45.8	33.2	23.8
Jalpaiguri	13.8	19.8	18.8	19.3	22.8	20.6	96.6	85.4	65.8	57.7	50.6	32.8
Cooch Behar	20.0	26.0	22.4	23.5	24.0	19.8	116.5	102.5	84.5	67.6	52.5	29.9
<b>Uttar Dinajpur</b>	<b>18.8</b>	<b>22.1</b>	<b>22.3</b>	<b>21.6</b>	<b>22.4</b>	<b>22.0</b>	<b>134.0</b>	<b>107.2</b>	<b>82.4</b>	<b>69.7</b>	<b>64.8</b>	<b>45.9</b>
Dakshin Dinajpur	18.8	22.1	22.3	21.6	21.4	18.2	134.0	107.2	82.4	69.7	46.2	28.5
Maldah	13.1	18.7	18.7	19.8	20.7	17.6	112.3	112.2	89.7	74.5	58.1	34.9
Murshidabad	14.9	18.1	17.1	16.1	16.9	13.1	101.5	93.5	72.2	55.8	44.0	24.1
Birbhum	24.0	25.0	21.2	20.6	22.1	19.3	120.6	94.0	67.4	53.5	45.5	31.5
Bardhaman	22.6	23.9	20.3	20.5	19.7	17.7	104.0	68.6	50.1	42.7	31.8	25.2
Nadia	6.9	20.5	17.3	16.3	15.6	12.7	39.7	62.9	46.7	38.9	29.8	19.2
North 24Parganas	28.1	27.7	23.9	22.3	16.7	12.2	101.0	72.6	53.6	42.7	25.0	15.6
Hugli	26.1	27.8	23.0	21.1	18.9	15.4	93.8	68.0	50.4	38.6	28.3	20.5
Bankura	16.5	30.9	27.0	30.7	30.2	27.3	102.9	113.9	87.0	71.3	58.0	43.1
Puruliya	NA	28.5	30.1	36.2	38.9	37.2	NA	138.9	119.8	107.6	89.9	67.0
Medinipur	17.3	34.5	30.1	29.6	24.6	20.5	81.2	107.0	78.4	61.1	35.6	27.4
Haora	27.3	28.6	23.6	21.7	18.3	13.1	82.7	66.7	50.0	37.6	27.0	17.0
South 24Parganas	28.1	27.7	23.9	22.3	27.9	20.2	101.0	72.6	53.6	42.7	50.6	29.1
<b>WEST BENGAL</b>	<b>21.5</b>	<b>26.3</b>	<b>23.0</b>	<b>22.6</b>	<b>21.3</b>	<b>17.4</b>	<b>86.1</b>	<b>76.3</b>	<b>59.2</b>	<b>48.8</b>	<b>36.8</b>	<b>25.4</b>

Source: Calculated from GOWB, 2004

In order to capture the literacy achievement while identifying the underlying gender bias more accurately, a Gender Disparity Index in Literacy Rate (GDLR) has been constructed in addition to the simple Gender Gap in Literacy Rate (GGLR). A number of indices have been suggested by various researchers (Naik, J, P., 1971; Tilak JBG, 1983, Kudu et al, 1986) to define and discuss the disparity in literacy rate by sex. In the present study, the following indexing method has been applied as proposed by Tilak -

$$D = \{(MLR - FLR) / TLR\} \times 100;$$

Where, TLR= total literacy rate, MLR= male literacy rate and FLR= female literacy rate. Being simple to calculate and based on all the three parameters, this index is also supposed to describe the overall achievement in addition to simple male female difference.

Following this formula, the district-wise gender disparity index has been calculated and presented in columns- 8 to 13 of Table- 4.4. It is seen from the table that all the districts have narrowed their gender difference during the period 1951-2001. It is also found that the districts with larger Gender Disparity Index than the State average are also showing fairly lower overall literacy rate except for only two districts, namely Murshidabad and Nadia. Based on this index, Puruliya has been found with a highest index value (66.98 in 2001) followed by Uttar Dinajpur (45.89) and Bankura (43.08) thereby suggesting the most female disadvantage in these districts. The female literacy rates are the same (36.5% in 2001) for both Uttar Dinajpur and Puruliya (lowest in the district), but the male and consequently the total literacy rate (73.72% and 55.57%) in Puruliya is much higher than Uttar Dinajpur (58.48% and 47.9%). This implies that the females in Puruliya are excluded from the overall educational development process.

#### 4.4 Decadal Variation in Literacy Rate

The measure of decadal increase in literacy rate has substantial importance in analyzing the literacy character of any region. In this respect, growth of literacy in West Bengal is not satisfactory and it recorded an increase of 10.94% in total literacy rate with a larger increase in female literacy rate than the male counterpart. This decadal variation is substantially lower than the national average of 12.63%. The female edge is seen throughout the districts in the State (Table- 4.5) as well as across the State and Union Territories in India (Varshney, 2002). Secondly, the increase in literacy rate in the rural areas of the state (12.92%) is much higher than the urban areas (5.98%). This holds true across the districts too.

Again, negative association is observed between the decadal (1991-2001) variation in literacy rate and the literacy rate of 1991 at both district and subdistrict level. This implies that the region with high literacy rate recorded relatively smaller increase in literacy rate during the last decade. However, Uttar Dinajpur with lowest literacy rate in 1991 could hardly record a literacy jump of 15.08% in the rural areas and 6.01% among the urban population. Exactly nine districts have been found where the literacy jump during the last decade is found to be higher than Uttar Dinajpur. We have some evidence at the State level too. At the State level, Rajasthan has achieved the highest decadal increase in literacy rate (22.48%) preceded by Chattisgarh (22.27) Madhya Pradesh (19.44%), Andhra Pradesh (17.02%), Uttar Pradesh (16.65%) Uttaranchal (16.65%). It may be noted that these are the states with having substantially lower literacy rate in 1991.

On the other hand, Himachal Pradesh, Maharashtra, Tripura and Punjab are the examples where decadal increase in LR has been recorded higher than West Bengal with having a literacy rate (1991) higher than West Bengal (Varshney, 2002). Thus it is not very easy to generalize that the regions with lower LR has registered a larger increase in LR during the last 10 years. One thing which appears to be clear and also significant from the decennial Census data of 1991 and 2001, is that all the 35 States and Union Territories as well as the districts of West Bengal have registered higher increase in female literacy rate than male literacy. This finding suggests an indication of bridging the gender gap in literacy in near future. It is thus necessary to identify the factors underlying this higher increase in female literacy rate and enhance the influencing capacity on society to have a literacy picture free from gender bias.

**Table- 4.5: Decadal Variation in Literacy Rate 1991-2001**

State / District	Rural		Urban			
	Person	Male	Person	Male	Person	Male
Darilina	16.83	16.16	17.86	6.52	5.86	7.54
Jalpaiguri	19.23	18.54	20.25	8.95	7.4	10.78
Cooch Behar	21.38	19.33	23.82	7.95	7.75	8.22
Uttar Dinaipur	15.08	15.08	15.36	6.01	5.52	6.77
Dakshin Dinaipur	19.42	17.85	21.25	3.35	2.36	4.53
Maldah	15.19	13.78	16.81	6.17	4.62	8.02
Murshidabad	16.76	14.85	18.9	7.54	6.59	8.63
Birbhum	13.28	11.99	14.7	10.23	9.04	11.84
Barddhaman	9	8.06	10.15	6.53	6.33	7.37
Nadia	15.76	14.4	17.4	7.88	6.25	9.57
North 24 Parganas	15.71	12.88	18.87	6.71	5.65	8.15
Huqli	8.73	6.88	11.01	6.79	6.27	7.7
Bankura	12.03	10.64	13.5	6.52	4.76	8.55
Puruliya	12.92	12.39	13.67	4.82	3.33	6.82
Medinipur	5.68	3.64	7.95	4.49	3.55	5.83
Haora	11.53	8.51	14.94	7.3	5.86	9.37
South 24 Parganas	15.1	11.34	19.26	7.82	6.15	10.06
<b>WEST BENGAL</b>	<b>12.92</b>	<b>11.08</b>	<b>15.04</b>	<b>5.98</b>	<b>4.94</b>	<b>7.49</b>

Source: Calculated from 'Census View, Directorate of Census Operation, GOWB, 2004

#### 4.4.1 Dimensions of Variation in Literacy Rate

Literacy rate is an average concept and has its own limitations. This average concept may not be very representative of the wide disparity in literacy within a particular region. For example, the literacy rate of West Bengal is 68.6% does not mean that each of the districts has been maintaining this rate. The district of North 24 Parganas recorded 78.1% of population as literate, while Uttar Dinajpur could hardly manage a 47.9% literacy rate (as per Census 2001) thereby showing a 30.2% of variation in this regard.

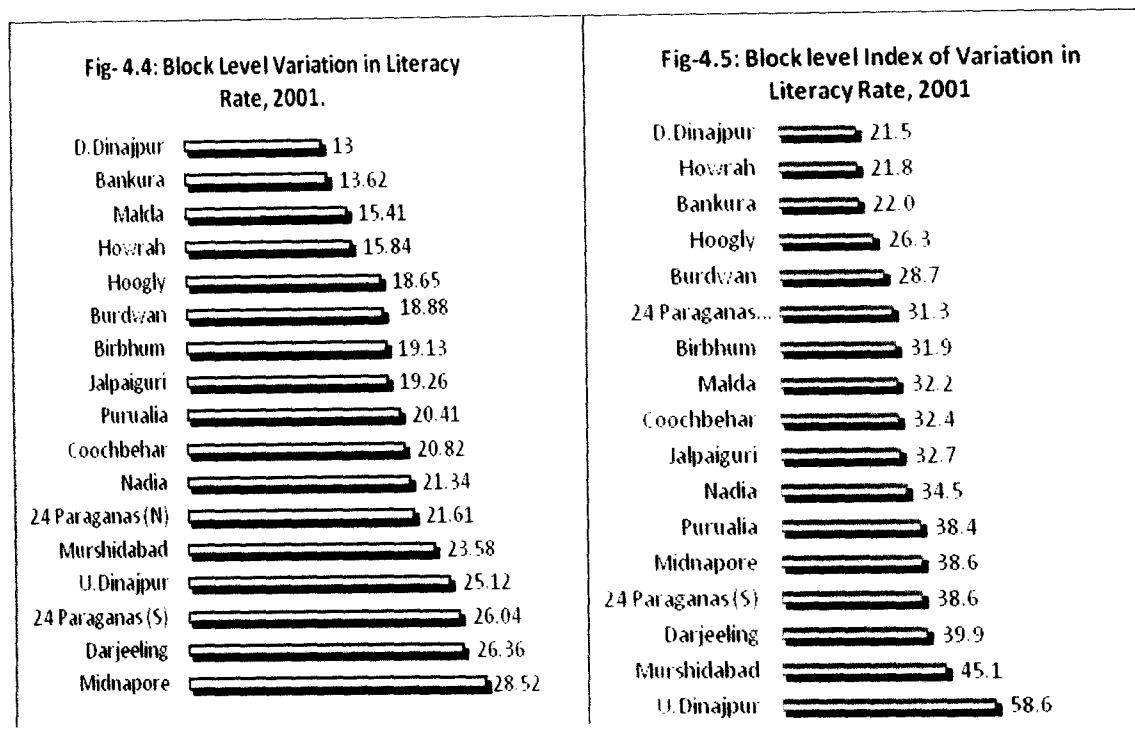
Similarly, if we go through the block of a particular district or the villages of a particular block or the families of a particular village we will certainly get the same picture. Based on literacy rates of the 341 CD blocks under the districts of West Bengal, it is seen that the highest literate block in the State is Serampur Uttarpara under Hoogly district with a literacy rate of 84.51% and the least literate block is Goalpokhar-I under Uttar Dinajpur district having only 31.6% of adults as literate. Thus, a disparity of 52.91% in literacy rate is observed if we consider all the CD blocks in the State as a whole. Inter block disparity in literacy for each district is graphically presented in Figure- 4.4.

Inter block variation is highest in the district of Midnapore (28.52%) and Dakshin Dinajpur has the least variation (13%) in literacy. From this analysis however, it is not easy to generalize that high block level variation in literacy rate in any district indicates its relative disadvantaged literacy scenario. The coefficient of correlation between PLR and block level variation in LR for the districts is thus calculated and found to be negative, but with a small magnitude of correlation (-0.26).

For better understanding of this variation, we have constructed an index of variation as follows-

$$\text{Index of Variation in literacy rate} = \{(\text{Max. LR} - \text{Min. LR}) / \text{Total LR}\} \times 100$$

Following this formula, Block level Index of Variation in literacy rate for each district has been calculated and represented in figure-4.5. This index of variation shows a strong negative correlation (-0.75) with the total literacy figure at district level. Thus, it appears that this index is more indicative than just a simple gap between highest and lowest literate block, for explaining the literacy development.



Source: calculated from Directorate of Census Operation, West Bengal, 2004

#### 4.4.2 Literacy Variation at Village Level: Educationally Deprived Villages in Rural West Bengal

The prime objective of 'Education for All' is not just to maintain a moderate literacy rate. In order to have an educationally stable social order, it is necessary to minimise regional variation in literacy rates at micro level with an uniform spread in education amongst the population. For this purpose, an attempt has been made to see the literacy variation in West Bengal at village level. In West Bengal there are 37, 956 populated villages in the State as per Census 2001. The villages under 17 districts have been arranged by their literacy rates. After calculating the literacy rate of each of the villages in West Bengal, the villages with a literacy rate below 25% are identified and termed as Educationally Deprived Villages in the State. As such, it is found that 843 villages in the State show a minimum of 25% literacy rate. These 843 villages altogether comprise a population size of 462827. Out of this population, only 67743 are literate thereby showing a literacy rate of 19.1% in aggregate (Table- 4.6). Again, out of these 67743 literate persons, only 19282 are females. In absolute percentage, 26.7% are males and 11.1% females are literate in these villages.

The distribution of these educationally backward villages throughout the districts is depicted in Table-4.4. Uttar Dinajpur with 207 (25% of total 843 deprived villages) villages in this category tops the list, which apparently suggests that the educational deprivation is mostly concentrated in the districts where literacy rate is very low. But, Midnapur with a literacy rate (Rural) of 73.9% has 123 educationally deprived villages while Coochbehar and Jalpaiguri with 2 villages each, 6 villages in South 24 Pargana and 27 in Dakshin Dinajpur – these districts have literacy rates much lower than Midnapur. As such, the linear association between the average district level rural literacy rate and overall literacy rate of the respective deprived villages within each district has been calculated and found negative with a very low magnitude (-0.19). The share of Schedule

Caste and Tribes in these deprived villages also indicates that the deprivation is more prominent for the tribes compared to the castes.

**Table- 4.6: Educationally Deprived Villages in West Bengal**

	No. of Village	Population	Literate	PLR	MLR	FLR	WPR (F)	SC	ST
1	2	3	4	5	6	7	8	9	10
Burdwan	10	1361	226	20.5	31.4	8.7	46	32.8	56.6
Birbhum	55	15818	2268	17.8	24.9	10.4	41.6	19.6	60
Bankura	72	13858	2301	20.2	30.4	9.6	50.1	56	19
Midnapore	123	16194	2548	19.2	28.4	9.9	51.7	22.5	52.3
Howrah	1	196	22	13.9	18.3	9.2	20.4	100	0
Hoogly	1	81	15	22.1	21.6	22.6	39.5	13.6	0
24 Paraganas (N)	2	277	37	16.4	19.3	13.1	26	74.7	0
24 Paraganas (S)	6	47785	7417	19	27.8	10	47.4	32.2	44.7
Nadia	14	7098	1211	20.6	27.3	13.5	26.7	14.2	17.9
Murshidabad	57	59083	9400	20.8	27.5	13.8	33.8	5	2.9
U. Dinajpur	207	235605	33924	19.1	27.4	10.4	27.5	9.7	7.7
D. Dinajpur	27	7112	1148	20.2	28.4	11.9	49.6	29.7	53.8
Malda	154	120289	17114	18.3	24.2	12.2	36.5	12.1	19.2
Jalpaiguri	2	432	76	23.2	30.4	16.3	21.3	13.7	11.8
Darjeeling	22	5969	892	18.1	24	11.9	31.6	20.1	64.3
Coochbehar	2	436	35	10.5	14.2	5.6	7.7	19.3	17.2
Purulia	88	26803	3943	18.2	30.4	5.8	52.5	8.6	65.2
Total of 843 Vills.	843	462827	67743	19.1	26.7	11.1	32.5	10.2	

Note: \* West Bengal; Female Work Participation Rate = (Total Female Workers/ Total Female Population\*100)

Source: Calculated from 'Census View, Directorate of Census Operation, GOWB, 2004

Looking into the problem of educational deprivation at another level that indicates the presence of 43 villages with a population size of at least 200 where not more than five women in each of the respective villages are literate (Appendix-II). These 43 villages have been termed as Educationally Dying Village. Most of these villages are concentrated in the districts of Uttar Dinajpur (12), Puruliya (8), Malda (6) and Murshidabad (5) where the other indicators of literacy deprivation are also very stark. These 43 villages altogether comprise 16495 persons of which 1074 males and only 156 females are literate. Altogether, 39.89 % of the total population of these 43 villages belongs to Schedule Tribe as opposed to only 13.97 % Schedule Caste. Thus it appears that educational deprivation is more prominent to the tribes in West Bengal. Although the religious population distribution is not available at village level, the concentration of these Educationally Deprived Villages and Educationally Dying Villages in three muslim dominated districts (Uttar Dinajpur, Murshidabad and Malda) indicates that deprivation is also related to this particular religious group of population.

In the villages specified above, 50% of the villages do not have any primary school within them. The coverage of primary school per 1000 population becomes 1.24 that is much lower than the State average coverage (6.71) in this respect. Thus it indicates that the access to school may be one of the causes of such a deprived educational picture. Secondly, out of the total population of these villages, 50.7 percent are non-worker thereby depicting the low-income status in aggregate. Hence, the poverty factor may be held responsible for the low educational status. Thirdly, the deprivation is more apparent for the women and the schedule tribe section of the population. Again, out of the total workers (Main+Marginal), 82% are engaged in agriculture of which 50.2% are agricultural labourers and 31.8% are cultivators. The absolute dependency on agriculture has been found in certain villages (100%). As such, the study also reflects the absolute dependency on agriculture as one of the significant factors explaining the abysmally lower literacy development in the villages.

## **4.5 Factors Explaining the Literacy Variation in West Bengal: Multiple Regression Analysis**

### **4.5.1 Methodology & Data Collection**

The primary task following the forgoing analysis is to analyze the causes of such differential performances in literacy development and elementary education in the state. Two types of variables are identified by researchers, viz., the institutional variables such as basic school amenities, school infrastructures, indicators pertaining to quality education, and the socio-economic household related variables. Considering the availability of data at district and block level, this section will now deal with the problem of identifying the factors influencing the literacy variation in the state and their explanatory power. For this, a series of variables (both supply side institutional factors and demand side socio-economic factors) have been assimilated in the multiple regression analysis where the 17 districts as well as the 341 blocks of West Bengal are taken separately as unit of analysis. Thus the value of both the dependent and independent variable is associated with a region/area, either at district or sub-district (block) level.

Among the demand side socio-economic variables, the proportion of agricultural labourers (main & marginal) to total workers (AGRLB) and proportion of cultivators (main & marginal) to total workers (CULTV) are assumed to represent occupational diversification and are included at district and block level regression analysis. Female work participation rate (FWPR) is also included to measure its direction and explanatory power in influencing the literacy rate. In order to assess the explanatory power of the economic status of a region (district/block), proportion of households having no assets (HHNOASST) is included.

Among the institutional factors, two quality factors namely pupil teacher ratio at primary level (PTRPRI) and proportion of female teacher at primary level (FEMTCH) and two access factors namely proportion of habitation/villages having school both for primary and upper primary within them (PRISCH & UPRISCH) have been incorporated. It may be noted here that the availability of primary as well as upper primary school has been considered as explanatory variables as because the coverage of upper primary school in the State is very poor compared to the other States in the country. This acute deficiency in upper primary school has also been noticed in the recent DISE data published by the National University of Educational Planning and Administration (NUEPA, 2008) where the State is categorically assigned with the lowest ratio of upper primary to primary school.

All these explanatory variables are regressed on two dependent variables - male and female literacy rate (MLR & FLR) to assess the literacy character at district and block level. The explanatory variables are assumed to be linearly associated with each of the dependent variables. In order to tackle the problem of multicollinearity among the regressors, the variance inflation factor (VIF) of each of the regressors has been calculated. It may be noted here that VIF is defined as  $VIF = 1/(1-r^2_{ij})$  where  $r_{ij}$  is the simple correlation coefficient between two regressors. VIF shows how the variance of an estimator is inflated by the presence of multicollinearity. It is clear from the definition of VIF that as  $r_{ij}$  approaches 1 (i.e. regressors become collinear), the value of VIF approaches infinity and if there is no collinearity between the regressors, the value of VIF will be 1. Within this range, as a thumb rule, it is suggested that if the value of VIF of a regressor exceeds 10, then that variable is said to be highly collinear (Kleinbaum et al 1988). This thumb rule is followed in the regression analysis to overcome the problem of multicollinearity in particular. The entire analysis is based on secondary data collected primarily from Census of India, 2001.

### **4.5.2 Regression Results and Analysis**

The summary of the regression results is provided in tabular form in Tables 4.7 (district level) and 4.8 (block level). An analytical exposition on the data is presented below.

#### **Asset holding/Income level**



Several Indian studies (NSSO, 1989; Panchamukhi, 1991; Sipahimalani, 1994; NCAER, 1996; Basu, 1997; Bhatta, 1998; PROBE Team, 1998; Devi, 2001; Krishanji, 2001; Nambissan and Sedwal, 2002; Dholakia, 2003) have tried to establish that economic backwardness is indeed a significant factor in explaining the low literacy rates and lower educational attainment among all segments of population. There are also many evidences from the studies of different countries in this respect (Lave et al, 1981; Psacharpoulos et al, 1989; King and Lillard, 1987; Knodel and Wongsith, 1990; Tansel, 1997).

The present analysis incorporates proportion of households having no specified assets (as per census definition) as a proxy of income of the households. In the block level regression analysis as well as in district level, holding of no assets by the household bears a significant negative impact on both male and female literacy rate.

### **Occupational Diversification**

Beyond the level of income, the source of income or the composition of income has significant influence on literacy rate and child schooling. Sarthi Acharya (2001), while investigating into the inter-district and inter-tehsil variation in literacy rates in rural Maharashtra and Madhya Pradesh, has found some interesting results. Acharya measured the occupational diversification as the percentage of workers in non-agricultural activities and tested it on literacy rates. This percentage is found to be positively significant in raising both the male and female literacy rates in the two states. However, the variable appears to be more enhancing (i.e. assuming larger magnitude) in raising female literacy rates than male literacy rates. This trend is however, not found in Madhya Pradesh. Similar results are also found when analyzing the enrolment pattern of children in the studies carried out in India (Jeemol Unni's, 1998 in rural Gujarat; Jabbi and Rajyalakshmi's, 2001 in Bihar).

International studies (Psacharpoulos et al., 1989 in Brazil) suggest that the opportunity cost of schooling is high for children from agricultural sector and so they typically had low enrolment rates, high dropouts and poor performance in school. Hamid Shahnaz (1993) in a study on urban Pakistan has observed that children from non-agricultural families have consistently better schooling outcomes. These findings in some alternative dimension have been supported in our country along with some other country studies (Pandey, 1990; Devi, 2001; Ravi Srivastava, 2001; Knodel et al, 1990).

In order to capture the impact of occupational diversification on literacy, the proportion of agricultural labourers (main & marginal) to total workers (AGRLB) and proportion of cultivators (main & marginal) to total workers (CULTV) are regressed on literacy rate both at district and block level.

In the present analysis, both the variable shows a significant statistical bearing with literacy rate (male & female). However, importantly, the regression result indicates that literacy rate will have a decreasing trend if the proportion of agricultural worker (AGRLB) in total work force increases and vice-versa. While the opposite direction is seen in case if there is an increase in cultivators in the total workforce. Thus, it appears from this study that redistribution of land among the landless workers who are still depending on agriculture may be a policy measure for the educational development.

### **Female Work Participation Rate (WPRF)**

Most of the Indian studies (Pandey, 1990; Jeejeebhoy, 1993; Krishnaji, 2001 and Mukhopadhaya, 1994) established the negative effect of WPRF on literacy and enrolment. This is partly because the daughters have to shoulder the responsibilities of household chores and sibling care and partly because the lack of maternal attention and supervision discourages children's schooling. Some other studies established it as a positive enhancing factor. It may be due to the fact that the additional resources from mothers' earnings can overshadow the negative impact of mothers' absence from home (Psacharpoulos et al, 1989; Tansel, 1997). Sengupta et al (2002), for West Bengal, have found an important result in a village level study. While they find mothers' work participation to have a significant inverse relation to daughters' school enrolment, however, it is

not significant in impacting grade completion. However, the factor does not appear to have a significant impact on the probability of dropout or retention in school.

**Table-4.7: District Level Regression Result**

	<u>Dependent Variable: MLR</u>		<u>Dependent Variable: FLR</u>	
	Unstandardized Coefficients	t values	Unstandardized Coefficients	t values
	B		B	
(Constant)	96.574	4.6	52.881	2.153
HHNOASST	-.503***	-3.728	-0.356**	-2.255
FWPR	-0.368	-0.882	-0.644	-1.318
CULT	.612***	3.94	0.353*	1.944
AGRLB	-.469*	-2.064	-0.454	-1.707
PTRPRI	-.320***	-3.898	-0.123	-1.28
HABPRI	-0.085	-0.544	-0.207	-1.13
HABUPRI	0.137	1.017	0.346*	2.203
FEMTCHPRI	0.401	1.75	0.667**	2.489
R <sup>2</sup>	0.926		0.938	
Adj. R <sup>2</sup>	0.852		0.876	
Std. Error of the Estimate	3.23829		3.78805	
Durbin-Watson	3.028		2.517	

**Table-4.8: Block Level Regression Result**

	<u>Dependent Variable: MLR</u>		<u>Dependent Variable: FLR</u>	
	Unstandardized Coefficients	t values	Unstandardized Coefficients	t values
	B		B	
(Constant)	81.758	16.458	74.055	13.207
CULTV	0.271***	6.491	0.064	1.368
AGRLB	-0.238***	-5.886	-0.287***	-6.293
FWPR	-0.320***	-4.355	-0.698***	-8.421
VILPRISCH	-0.050	-1.327	-0.122***	-2.880
HHNOASST	-0.369***	-6.735	-0.337***	-5.458
HHBNK	0.315***	5.106	0.252***	3.620
VILLUPSCH	0.211***	4.686	0.351***	6.894
BUSCON	-0.017	-0.571	0.015	0.442
R <sup>2</sup>	0.481		0.511	
Adj. R <sup>2</sup>	0.468		0.499	
Std. Error of the Estimate	7.229		8.159	
Durbin-Watson	0.550		0.592	

Note: \*\*\* significant at 1% level, \*\* at 5% and \* at 10%

In secondary data analysis, this rate also appears to have a depressing effect on both male and female literacy at block level analysis. However, interestingly, the coefficient is much higher in case of explaining the female literacy rate. This suggests that the absence of a female member in a family is substituted by the presence of another female member and thus the mother's absence does not have a very strong depressing impact on male literacy. This, in a sense, implies that mother's absence owing to her involvement in the labour market restricts the younger female child from attending school or be educated.

In addition to this, the data shows that there are 47.01% of total male workers in the state working as main workers (as per Census 2001). The same is only 9.12% in case of female workers. Alternatively, the lower proportion of the females to work as main worker in the labour market also precipitates the lower literacy rate of the female in this state. At the same time, percentage of agricultural labourers to total (main + marginal) workers is considerably higher for the female workers (32.18%) compared to the male workers (22.69%). This suggests that an increase in the WPRF will lead to increased participation of female workers as agricultural labour where educational qualification is redundant. Uneducated mothers are generally assumed to be unaware about the future educational benefit of their children. Their earnings are also not expected to be at a level that will overpower their absence.

### **Banking Facility**

In order to capture the level of consciousness of the households, especially the economic consciousness, proportion of households availing banking facility (HHBNK) has been incorporated at block level analysis. It may generally be assumed that this explanatory variable should have a positive impact on literacy rate. In the regression analysis, the statistically positive impact of this variable has been found to exist for both male and female literacy rate at block level.

### **School Availability**

The necessity of getting proper access to school to enhance schooling outcomes and adult literacy rates, especially for girls, has been supported by a number of studies. Vimala Ramchandran and Aarti Saihjee (2002) on the basis of desk review of DPEP and qualitative micro studies in six states of India (Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Haryana, Karnataka and Tamil Nadu), focused on the issue that the presence of a functional upper-primary and secondary schools exert a significant influence on childrens' and parents' motivation to continue their education. This is of great importance for girls and children from very poor families. The micro studies also reinforce these very significant findings of desk review. In analyzing the attitude of rural parents of Punjab, Thind and Jaswal (2004) reported the non-availability of school within a reasonable distance, as an important cause for not sending the girl child to school. However, the contribution of Varghese in PROBE report (1999) noted that the positive association between school facilities and pupil achievements is stronger in the educationally backward regions (e.g. MP, Orissa). It does not appear to be significant in Kerala and weak in other educationally advanced states.

The present study in this respect has found an interesting result. In district level, the proximity of school within the habitation is applied and a primary school within it and an upper primary school within a distance of 3 kilometers have been taken as a measure of availability of school. It is found from the regression result that it is only the availability of upper primary school that has a positive impact in enhancing the female literacy rate. However, the presence of upper primary school within the village is statistically significant and exerts its positive impact both on male and female literacy rate at block level providing an edge in enhancing the female literacy rate. The presence of primary school although has been found to be insignificant at district level for enhancing the literacy rate, but it quite unexpectedly shows a negative impact on female literacy rate at block level. The result in this respect indicates that access to upper primary school within a reasonable distance has a great positive impact in enhancing the female literacy rate.

### **Female Teacher**

India has an acute shortage of female teachers and it is an area of concern and debate (Bhatty, 1998; Pratiche Education Report, 2002). Srilanka with 82 percent of female teachers shows 87 percent FLR in 1995; while in India, only 41.86 percent teachers are female at all stages (NUEPA 2008, Haq and Haq, 1998). Rao and Reddy (2003) in a study in Andhra Pradesh, by using the secondary data at the district level, observe that proportion of female teacher has a strong positive impact on overall FLRs. Sailabala Devi (2001) in her village level study in Orissa observes that proportion of female teacher significantly increases the probability of school enrolment for girls than boys. Thind and Jaswal (2004) find similar results in rural Punjab.

Because of the unavailability of data, the variable is used only at district level regression analysis and the result is found to be illuminating. The proportion of female teacher at primary level is significant for enhancing the female literacy rate, no such statistical significance is being found for enhancing the male literacy rate. If one compares the magnitude of explanatory power of this variable, its influence is considerably stronger for female literacy rate.

#### **4.6 Elementary Education in West Bengal: An Alternative Interpretation**

The Educational Development Index as published by NUEPA placed the state of West Bengal at 32nd rank out of 35 Indian States and Union Territories: It is mentioned earlier in our previous section that none of the districts could maintain a rank at the upper most quartile (143 districts) at national level. Kolkata, which is placed at the top of the list among the 19 districts in the state, had hardly managed the all India rank of 318 in this respect. It may be noted here that EDI is an index prepared purely based on 22 indicators/23 indicators (2005-06/2006-07) related to the elementary level education. On the other hand, the Indian Census placed the State in the middle most position on the basis of literacy rate. This paradoxical finding requires further exploration. However, first, a brief review of the data released by NUEPA in constructing the EDI is presented here. Along with this, an attempt has been made to find the correlates of such a disappointing educational picture of the state.

##### **4.6.1 Review of Educational Indicators**

Elementary Education in India is meant for eight years of schooling at the beginning stage of school education. This elementary level consists of two stages- primary and upper primary education. In some states, primary education includes first five years and in some other states it is the initial four years of schooling. In West Bengal, primary education includes up to grade 4 where four years of initial level of schooling is being imparted and the next four years of schooling, i.e., from grade 5 to grade 8 is known as upper primary level of education. A brief scenario of elementary education of the state showing different category of schools, teachers and enrollment at various schools is presented in Table 4.9. Out of total 59,223 schools, government managed schools cover 89% and the remaining 11% are privately managed. The national figure for the same is 83.14%. This indicates that government involvement in school management is dominant in the state. Private schools numbering 73% (4,693) are located in rural areas thereby reflecting its rural bias too.

Out of total 52790 (Government run) schools, 94% of the schools are in the category 'Primary Only', which means 94% of total schools, are imparting education up to class IV. The national average in this respect is only 71.04%. Out of the remaining 29% of total government schools in India, 16.03% are primary integrated upper primary school. But in West Bengal, such type of primary integrated upper primary schools is negligible at 0.55% only. This brings forth a number of imponderables in elementary education. After the completion of primary cycle of education, the students are to be re-enrolled in another school at which he/she finds it difficult to cope with the learning environment of a new school. More often than not, the distance of the upper primary school from the village keeps away children from enrolling, especially the girl children. This is because the coverage of upper primary school in the state is very poor and it was stated earlier that the ratio of primary to upper primary schools in the state is the lowest among all the Indian states. All these contribute to the low performance at the upper primary education in the state.

Again, out of total enrolment (7199489) in government school, 80% are enrolled in the category of primary only and 16% are in the category of upper primary with Secondary/ Higher Secondary. As far as the number of teachers in different schools is concerned, the above mentioned two types of schools again dominate the others too. Thus, it is seen that mainly two category of educational institutions may be significant in describing the primary and upper primary education in West Bengal. One is the institution imparting only primary education and second is the institution imparting upper primary with secondary or higher secondary education in West Bengal.

**Table- 4.9: Educational Indicators in West Bengal, 2005-06**

	Primary only	Primary with Upper Primary	Primary with Upper Primary & Secondary/ Higher Sec.	Upper Primary only	Upper Primary with Sec./ Higher Sec.	No response	Total
Government schools	49379	291	135	604	2177	204	52790
Private schools	143	29	177	1198	4886	0	6433
Govt. schools: Rural	42705	175	67	532	1718	4	45201
Government teachers	150987	1160	1550	3835	21294	68	178894
Private teachers	522	207	1641	6958	46056	0	55384
Private schools: Rural	88	13	119	1004	3469	0	4693
Enrolment in Govt. school	7199489	58622	71652	206369	1411650	2950	8950732
Enrolment in Pvt. School	26449	8672	90947	402520	3113013	0	3641601
Enrolment in Govt. school : Rural	6211720	36728	33001	184609	1151414	340	7617812
Enrolment in Pvt. school. : Rural	11299	5282	66452	357245	2401246	0	2841524

Source: State Report Cards 2005-06, NUEPA <http://www.dise.in//>

#### 4.6.2 District level Performance Indicators

According to the Census 2001, West Bengal comprises 18 districts. However, the latest data on the State includes 19\* districts subsequently after 2001. Along with this, the school related DISE data considers Darjeeling administrative district as two separate education district - Darjeeling (Hill areas) and Siliguri (non-hilly areas). In the present district level analysis, Kolkata has been excluded as a district because of its metropolitan nature. Thus, school level indicators are shown for 19 districts in this state. It is seen in the earlier section of this chapter that all the districts of the northern part of the State except Darjeeling (Uttar Banga) along with Purulia, Birbhum, Bankura and Nadia were below the state average literacy rate in 2001. In this section, attempt has been made to assess the district wise school level achievement attributes (Table-4.10).

Enrolment Ratio (both GER & NER) is an achievement attribute which describes the proportion of children who have remained within the educational system. As per DISE 2005-06, the district level net enrolment ratio (NER) of West Bengal reveals quite puzzling result. All the districts that were below the state average literacy rate in 2001, have maintained the NER level above state average at primary school level. However, at upper primary level, no such consistent trend is noticeable. On the contrary, the correlation coefficient between literacy rate (person) and NER at upper primary level is found to be positive and significant. This apparently suggests that enrolment pattern in upper primary section is being given more importance in the state.

Universal enrolment at primary level is the initiation to the process by which one can ensure universal elementary education. Elementary education consists of eight years of schooling and unless and until all the children who are enrolled at the primary level complete their formal education of eight years up to upper primary stage of education, it will not be possible to achieve the goal of universalisation of elementary education. Thus, completion of the primary education cycle or basic education cycle is a much more critical issue than bringing more and more children into the fold of education. For this, some other performance indicators are suggested. Transition of children from one stage to another stage of education is an important indicator. In this respect a

series of transitional stages has been suggested. In a recent study, Divya Vaid (2004) has used the following educational transition stages –

- From illiterate to primary school
- From primary school to middle school
- Given middle school to high school
- Given high school to any college

While analyzing the above table, focus is made on the second stage of transition i.e. from primary to upper primary. The transitional year from primary to upper primary (i.e. from class IV to V) is very crucial year in the elementary education cycle. After completing the four years of primary schooling, the parents have to take decision to send their children at upper primary school. So far as the accessibility of school is concerned, the upper primary schools are situated at a certain distance from the village where the children reside. It has earlier been stated that the availability of upper primary schools compared to primary schools in this state, is very poor (lowest in India). As such, hardly 80% of the children of grade IV in this state transit to the beginning year of the upper primary cycle of education (Table-4.8). The remaining 20% are either repeater or they drop out of school. DISE data for the same year shows that 6.4% of the children are repeaters and 15.2% of the children dropped out in this grade-IV. District wise data shows that there is not much variation in transition rate of children from primary to upper primary section, rather the rate is closer to the state average except for Siliguri and Darjeeling district.

**Table- 4.10: School level Performance Indicators in West Bengal: 2005-06**

	Gross Enrolment Ratio- Primary	Net Enrolment Ratio- Primary	Gross Enrolment Ratio- Upper Primary	Net Enrolment Ratio- Upper Primary	Transition Rate from Primary to Upper Primary	Retention rate (RTNR)
Darjeeling*	44.9	32.8	40.5	20.3	47.1	22.2
Jalpaiguri	95.8	89.2	108.4	48.5	79.1	42.1
Coochbehar	102.2	98.8	130.5	62.6	75.0	54.3
U.Dinajpur	117.6	100.0	80.6	39.7	78.0	26.4
D.Dinajpur	100.6	97.4	110.8	57.0	79.7	41.5
Malda	120.3	100.0	95.3	44.9	77.7	46.9
Murshidabad	103.0	100.0	108.7	51.1	70.5	68.3
Birbhum	96.2	96.7	106.3	50.1	68.1	70.4
Burdwan	74.6	74.9	95.9	47.7	78.9	69.3
Nadia#	103.6	82.3	64.6	47.5	80.6	NA
24 Paraganas (N)	60.8	63.7	88.9	45.1	86.5	66.1
Hoogly	74.0	71.9	94.9	46.9	66.8	66.8
Bankura	91.2	91.7	104.4	51.2	76.7	72.5
Purulia	104.7	97.2	90.8	45.6	80.0	51.8
Midnapore (E)	37.9	37.8	55.2	26.1	89.5	68
Howrah	70.3	72.6	95.8	48.0	87.8	78.6
24 Paraganas (S)	88.3	89.0	100.0	50.1	75.9	53.4
Midnapore (W)	NA	NA	NA	NA	84.9	75.3
Siliguri	NA	NA	NA	NA	100.0	46.6
<b>West Bengal</b>	<b>104.5</b>	<b>82.8</b>	<b>66.2</b>	<b>48.7</b>	<b>79.6</b>	<b>58.25</b>

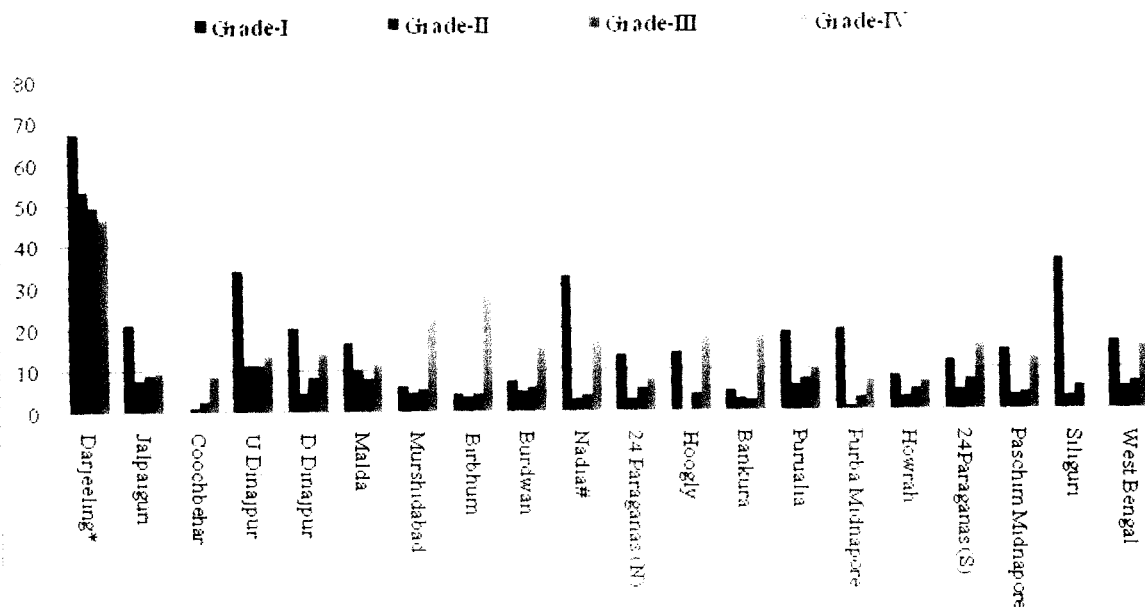
\*excluding the Siliguri subdivision, # data for 2004-05

Source: District Report Card 2005-06 and State Report Card 2005-06, NUEPA, 2007 <http://www.dise.in//>

Retention rate at primary level is another indicator of school performance which defines the proportion of enrolled children in grade-I that has reached the final grade (IV) of primary level within the specified years. As per DISE 2005-06, the district Howrah performs best in this respect

(table-4.7) followed by Paschim Midnapore and Bankura. The districts of North Bengal occupy the bottom positions in the list.

**Fig- 4.6: Dropout Rate in West Bengal 2005-06 (Primary Level)**



\*excluding the Siliguri subdivision, # data for 2004-05

Source: District Report Card 2005-06 and State Report Card 2005-06, NUEPA, 2007

The district wise dropout rate has been sketched in Fig- 4.6 where it is seen that the trend of dropping out of school is more prominent in two particular stages - at the beginning year, i.e., in grade-I and at the final year of primary education, i.e., in grade-IV. In 13 out of 19 districts, the dropout rate recorded to be highest at the beginning year of primary education. However, some of the districts have performed well and have retained the students within the education system. Almost all the districts of Dakshin Banga are in comparatively better position. This makes it abundantly clear that North Bengal suffers from acute educational deprivation.

#### 4.6.3 Factors influencing Educational Achievements and their Implications

Internationally, two popular indices [Human Development Index (HDI) of UNDP and Education for All (EFA) Development Index (EFA-DI) of UNESCO] pertaining to the level of human development of different countries have been used for cross-country comparison. Both these indices measures only the outcome related indicators. The HDI includes adult literacy rates and combined gross enrolment ratio for primary, secondary and tertiary schooling as indicators of educational development. On the other hand, EFA-DI incorporates (i) total primary net enrolment ratio; (ii) adult literacy rate; (iii) survival rate to Grade V; and (iv) average of three gender parity index for primary education, secondary education and adult literacy, with each being weighted equally (NUEPA, 2008a; UNESCO, 2007).

In India, the educational development index (EDI) has recently been published by NUEPA in association with the MHRD, GOI. The Working Group on EDI has considered three access related, five infrastructure related and six teacher related indicators along with nine outcome related indicators in the process of construction of EDI (Appendix-II). It may be said that the indicators used in constructing the EDI, are of mainly two types- one is achievement attribute that includes the nine outcome related indicators and the second is enabling attribute incorporating three sets of components – accessibility of school, school infrastructure, and teacher related indicators (Appendix-II). It may be noted here that, there are certainly other enabling attributes (socio-economic) which have a close statistical bearings with the outcome related indicators and

which have not been included in constructing the EDI. Early studies of the determinants of pupil achievements in developed countries suggested that school-related indicators were not significant enough in explaining the variations in pupil achievements. Household-related factors were found to be more important. However, more recent studies based on improved statistical methods conclude that, school-related factors too have a strong influence on pupil achievements (Varghese, 1999).

In view of the above, it may be assumed that there should be a relation between the enabling attributes and achievement attributes. A multiple regression analysis is carried out in this section in order to assess the problem of educational deprivation in West Bengal. For this, a selected number of enabling indicators are used here as explanatory variables and some selected achievement indicators as dependent variable in the regression equation. The explanatory variables are Ratio of Primary to Upper Primary Schools/Sections (PRIUPRI), Average Student-Classroom Ratio (ASCR), Schools with Student-Classroom Ratio > 60 (SCR), Schools with Girl's Toilet (TOILETG), Pupil-Teacher Ratio (PTR), Single-Teacher Schools (in schools with more than 15 students, SINGTCH) and Percentage of Female Teachers (FEMTCH). These variables are regressed on Gross Enrolment Ratio (GER), Drop-out Rate (DOR), Gender Parity Index in Enrolment (GPIER), Percentage of Appeared Children passing with 60 per cent and above Marks both for boys and girls (PASSBOY & PASSGIRL). The regression result is presented in Table 4.11.

The ratio of primary to upper primary schools/sections (PRIUPRIR) is an access component which is expected to be inversely related to educational development. In the present regression analysis, it also exerts the same effect on the indicators relating to the educational outcomes. It is found that PRIUPRIR is an important variable and has important bearings more specifically on the outcome related indicators relating to the primary education than upper primary education. It signifies that the availability of adequate number of upper primary schools can retain the children who are enrolled in grade-I up to the final grade (IV) of primary level within the specified years. At the same time, it has sufficiently larger impact on the quality of result both for boys and for girls at primary level. It has earlier been stated that West Bengal has the largest ratio of primary to upper primary schools/sections as per latest data of NUEPA. This high ratio (5.4 as compare to national average of 2.5; Flash Statistics, 2006-07) does not only adversely affect EDI of NUEPA, it also affects other indicators that simultaneously decreases the absolute value of the index too. It thus appears that the establishment of new upper primary schools is highly in need to augment the development of education, especially for primary education, in this state.

The proportion of schools with student classroom ratio 60 and above is an infrastructure related indicator which reflects upon the student-load in a classroom. The teaching - learning environment may be disturbed owing to the presence of excess number of students in a classroom and accordingly its negative impact on education is assumed. An interesting result has been found in the present analysis. At primary stage, it has impact only on enrolment ratio (GER). The direction of impact (positive) is opposite to the underlying assumptions of NUEPA. It may be said here that GER is an outcome of educational process which is quantitative in nature. Owing to the introduction of some recent government policies (e.g. arrangement of cooked mid-day meal, supply of free text books up to class VIII, preparation and maintenance of child register, enrolment drive etc), the enrolment rate across all the states in the country has been increased (Analytical Report 2006-07). In addition to this, in West Bengal, no detention policy has been adopted at primary level. These are not included along with the socio-economic indicators in this analysis. All these may have larger positive impact on GER than the negative impact of percentage of schools with student classroom ratio 60 and above (SCR). But, SCR is not significant in affecting the GER at upper primary level. It may be noted here that there is no hard and fast rule for detention at upper primary level in the state. Apart from this, the SCR has its assumed negative impact on the qualitative outcome related indicators (GPIENR, PASSBOY and PASSGIRL). One thing that is noticeable here is that the indicators have its impact only at upper primary level. At primary level, the SCR has no statistically significant impact on outcome related indicators as such.



School without Drinking Water Facilities, Average Student-Classroom Ratio (ASCR) and Schools with Girl's Toilet are other three indicators under infrastructure category that are included in computing EDI by the Working Group of NUEPA in this respect. The first two indicators have been designed to have its negative impact while the last one is positive in nature. We have also incorporated these three indicators in the multiple regression analysis. The proportion of Schools with Girl's Toilet only exerts its positive impact on GER at upper primary level. Secondly, ASCR is also found to be significant with a positive impact on GER at upper primary level that seems to be confusing indeed. One explanation may be added here is that higher the number of enrolled children at any stage will lead to a higher GER in that stage too. Now, if the number of classrooms does remain constant at that time, evidently there will be a higher average student-classroom ratio (ASCR). In all other cases, the indicators have been remained insignificant. It should be noted here that Drinking Water Facilities is excluded from the regression equation framed for primary level because of escaping from the problem of multicollinearity after following the VIF rule which is discussed in the earlier section of this chapter. This implies that such indicators do only have their own impact in the process of computing the EDI, they do not show any further enhancing effect on other indicators related with the construction process of EDI.

Among the indicators related with the teacher category, Pupil-Teacher Ratio (PTR) and Percentage of Female Teachers (FEMTCH) have been included in our district level analysis. The PTR does not appear to be significant in affecting any of the achievement attributes at any of the stages of education in question. Unexpectedly, FEMTCH puts forth a negative impact on the achievement attributes. Only the gender related outcome indicator (Gender Parity Index in Enrolment) is found to be positively influenced by FEMTCH. It implies that female teacher is much more effective in retaining the girl children at school. However, it is not significant at the upper primary level of education.

It may be worth to note here that due to the limited number of observations (19 education district excluding Kolkata) and due to the non-availability of the data at block level, a limited number of explanatory variables have been used in the present district level analysis. To obtain a clearer picture, analysis of district level of the country followed by block of a particular state and finally inter school analysis of a particular district will be more appropriate, which is beyond the scope of the present study.

**Table-4.11: Regression Result- Institutional indicators**

<b>Regression Result- Primary</b>							
Dependent Variable:	Explanatory Variables						
	SCR	TOILETG	PTR	FEMTCH	PRIUPRIR	SINGTCH	ASCR
GER	1.217**	NS	NS	-1.872***	NS	NS	NS
DORPRI	NS	NS	NS	NS	NS	NS	NS
RTNRPRI	NS	NS	NS	-1.567**	-13.354**	NS	NS
GPIENR	NS	NS	NS	0.191**	NS	NS	NS
PASSBOY	NS	NS	NS	-0.864**	-6.337**	NS	NS
PASSGIRL	NS	NS	NS	-0.645*	-5.638**	NS	NS

<b>Regression Result- Upper Primary</b>							
Dependent Variable:	Explanatory Variables						
	SCR	TOILETG	PTR	FEMTCH	PRIUPRIR	DWFCLTY	ASCR
GER	NS	1.091**	NS	NS	NS	NS	1.124**
GPIENR	-0.327*	NS	NS	NS	-5.038**	NS	NS
PASSBOY	-0.309**	NS	NS	NS	NS	NS	NS
PASSGIRL	-0.247*	NS	NS	NS	NS	NS	NS

Note: \*\*\* significant at 1% level, \*\* at 5% and \* at 10%, NS indicates not statistically significant.

## 4.7 Concluding Observations

The previous chapter explored achievements in literacy rate and elementary education in India that was found to be lagging far behind the advanced nations of the world. It was also observed that, over the last fifty years (1951-2001) some of the Indian States have fared better in this respect, while some other states are yet to get even closer to the international norm. West Bengal was found to be a typical state in this regard. Its literacy rate is close to the national average and it lies in the middle-most position among the Indian states. However, its rank with respect to the development of elementary education scenario is very deplorable. It lies almost at the bottom position in this regard. Observing such typicality, the state deserved a special focus and the present chapter provides the detailed educational scenario of this particular state.

Some of the important observations and findings of this chapter are summarised below to aid in further in-depth analysis of the state's elementary educational scenario.

As per the Census 2001, the district of Uttar Dinajpur in the State, is at the bottom most position in this respect with a literacy rate of 47.9%. The district wise rank analysis of literacy achievement shows that Murshidabad, Malda and Uttar Dinajpur are the three districts whose rank in literacy achievement (rural) over the last 50 years have been in lower rungs. It is found from the correlation analysis that the female literacy has a strong influence on the overall literacy of a region. Uttar Dinajpur having the lowest female literacy rate also has the least overall literacy rate too. Block level Index of Variation in literacy rate for the district is found to be the highest, which suggests that regional variation is also a major problem in this district.

Out of the 843 villages in the state with a minimum of 25% literacy rate, Uttar Dinajpur with 207 villages in this category tops the list, which implies that educational deprivation is mostly concentrated in this particular district. The share of Schedule Caste and Tribes in these deprived villages also indicates that the deprivation is more prominent for the tribes compared to the castes. Although the population distribution by religion is not available at village level, the concentration of these educationally deprived villages in the three Muslim dominated districts (Uttar Dinajpur, Murshidabad and Malda) indicates that deprivation is also of this particular religious segment of population. It is also found that the region with relatively lower literacy rate recorded higher increase in literacy rate in the last decade. However, Uttar Dinajpur with lowest literacy rate in 1991 could barely manage a literacy jump of 15.08% in the rural areas and 6.01% among the urban population. Nine districts in the state have been found where the literacy jump in the last decade is found to be higher than Uttar Dinajpur. Thus it appears that the district has some unique socio-economic characteristics that may be responsible for such a disappointing literacy achievement over the past decades. This paves the way to look into educational scenario of the district of Uttar Dinajpur in detail which has been undertaken in the next chapter.

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## APPENDIX-4.I

### Achievement Index in Literacy Rate across the districts between 1951 and 2001

	1951	1961	1971	1981	1991	2001
WEST BENGAL	0.200	0.343	0.409	0.521	0.693	0.857
DARJILING	0.166	0.332	0.403	0.545	0.697	0.905
JALPAIGURI	0.039	0.173	0.254	0.327	0.503	0.770
KOCH BIHAR	0.082	0.206	0.223	0.348	0.513	0.822
UTTAR DINAJPUR	0.035	0.135	0.231	0.291	0.345	0.545
DAKSHIN DINAJPUR	0.035	0.135	0.231	0.291	0.523	0.782
MALDAH	0.000	0.074	0.138	0.223	0.360	0.581
MURSHIDABAD	0.045	0.116	0.180	0.258	0.400	0.642
BIRBHUM	0.124	0.224	0.297	0.403	0.555	0.750
BARDDHAMAN	0.151	0.348	0.434	0.545	0.756	0.881
NADIA	0.086	0.314	0.380	0.455	0.615	0.820
NORTH 24 PARGANAS	0.243	0.398	0.496	0.609	0.830	1.000
HUGLI	0.243	0.440	0.510	0.647	0.830	0.955
BANKURA	0.066	0.233	0.291	0.472	0.608	0.779
PURULIYA		0.133	0.202	0.331	0.476	0.661
MEDINIPUR	0.145	0.310	0.403	0.555	0.868	0.952
HAORA	0.321	0.470	0.534	0.693	0.842	0.984
SOUTH 24 PARGANAS	0.243	0.398	0.496	0.609	0.654	0.870

## APPENDIX-4.II

### Educationally Dying Villages in West Bengal

Sl.No	District	Name of the Village	Population 7+ age group	Literate Person	Literate Male	Literate Female	Primary School	Dependency on Agriculture
1	<i>U. Dinajpur</i>	<i>Chitaur</i>	311	0	0	0	0	74.0
2	U. Dinajpur	Kantigachh	408	9	7	2	0	100.0
3	U. Dinajpur	Chirua	324	34	32	2	0	96.5
4	U. Dinajpur	Narayanpur	418	19	17	2	1	69.9
5	U. Dinajpur	Piralipara	197	16	14	2	0	79.5
6	U. Dinajpur	Chota Shikarpur	303	25	21	4	0	99.5
7	U. Dinajpur	Chiranch	697	16	12	4	1	81.0
8	U. Dinajpur	Belbari	182	14	10	4	1	93.3
9	U. Dinajpur	Pariharpur	203	25	20	5	0	99.0
10	U. Dinajpur	Uttar Talbari	339	44	39	5	1	98.9
11	U. Dinajpur	Negura	162	30	25	5	0	69.7
12	Birbhum	Udaypur	598	7	5	2	1	94.7
13	Birbhum	Bangram	577	5	2	3	1	100.0
14	Birbhum	Maligram	213	32	27	5	0	98.8
15	Birbhum	Milanchak	285	37	32	5	0	54.6
16	Birbhum	Kusumakandar	220	22	17	5	1	98.8
17	<i>Puruliya</i>	<i>Poradi</i>	370	54	54	0	1	13.5
18	<i>Puruliya</i>	<i>Bangrisamil</i> <i>Alias</i>	182	3	3	0	1	92.2
19	Puruliya	Kalha	227	14	11	3	0	49.6
20	Puruliya	Shilingda	234	82	79	3	1	28.6
21	Puruliya	Sitampur	212	57	53	4	1	78.6
22	Puruliya	Pitidiri	413	66	62	4	1	51.5
23	Puruliya	Brindabanpur	417	66	62	4	1	99.2
24	Puruliya	Bhunighra	320	89	84	5	1	99.2
25	Puruliya	Satsayerdih	569	53	48	5	1	99.8
26	Puruliya	Senkebasa	274	43	38	5	1	86.3
27	Nadia	Chak Madandanga	199	31	26	5	2	93.5
28	<i>Murshidabad</i>	<i>Panchberia</i>	197	0	0	0	0	44.8
29	Murshidabad	Arazi Gorsa	189	10	7	3	0	20.8
30	Murshidabad	Par Debidaspur	183	39	34	5	0	60.8
31	Midnapur	Bandadhara	168	39	36	3	0	98.4
32	Midnapur	Bara Rajgram	257	38	11	3	0	78.5
33	Midnapur	Luti Jhuri	248	69	56	4	0	100.0
34	Midnapur	Ektali	195	46	35	5	0	100.0
35	Midnapur	Majurdima	204	70	48	5	1	68.5
36	Malda	Ratanlalpur	494	14	13	1	0	96.7
37	Malda	Raghabpur Gujia	342	30	26	4	0	99.4
38	Malda	Saidpur	210	13	9	4	0	100.0
39	Malda	Jot Maniram	227	41	37	4	1	100.0
40	Malda	Lakshmi Kandar	302	20	16	4	0	99.4
41	Koachbehar	Jhar Singheswar	302	27	23	4	0	100.0
42	Darjeeling	Tharu Bhita	190	35	31	4	0	4.2
43	Bankura	Soul Ponamara	212	41	36	5	0	98.6
	<b>TOTAL</b>	<b>43 Villages</b>	<b>12774</b>	<b>1425</b>	<b>1218</b>	<b>151</b>	<b>20</b>	<b>82.0</b>

**APPENDIX-4.III:**

**Indicators Used in Computing EDI**

Components	Indicators	Type of indicators	Attributes
ACCESS	Percentage of Habitations not Served	Negative	ENABLING
	Availability of Schools per 1000 Population	Positive	
	Ratio of Primary to Upper Primary Schools/Sections (only at Upper Primary stage)	Negative	
INFRASTRUCTURE	Average Student-Classroom Ratio	Negative	
	Schools with Student-Classroom Ratio > 60	Negative	
	School without Drinking Water Facilities	Negative	
	School with Boy's Toilet	Positive	
	Schools with Girl's Toilet	Positive	
TEACHERS	Percentage of Female Teachers	Positive	
	Pupil-Teacher Ratio	Negative	
	School with Pupil-Teacher Ratio > 60	Negative	
	Single-Teacher Schools (in schools with more than 15 students)	Negative	
	Percentage of Schools with 3 or less Teachers	Negative	
	Teachers without Professional Qualification	Negative	
OUTCOMES	Gross Enrolment Ratio – Overall	Positive	ACHIEVEMENT
	Scheduled Castes : Gross Enrolment Ratio	Positive	
	Scheduled Tribes : Gross Enrolment Ratio	Positive	
	Gender Parity Index in Enrolment	Positive	
	Repetition Rate	Negative	
	Drop-out Rate	Negative	
	Ratio of Exit class over Class 1 Enrolment (primary stage only)	Positive	
	Percentage of Passed Children to Total Enrolment	Positive	
	Percentage of Appeared Children passing with 60 per cent and above Marks	Positive	

Source: Analytical Report 2005-06; 2006-07, NUEPA, New Delhi.

APPENDIX-4.IV

