A COMPARATIVE STUDY OF LITERACY DEVELOPMENT BETWEEN PURULIA AND UTTAR DINAJPUR DISTRICT, WEST BENGAL

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Abstract

Development is a multidimensional concept having dynamic character. and Uttar Dinajpur both are under developed districts of West Bengal. In this paper an attempt has been made to analyse the level of difference in literacy development through Absolute Gender Gap in Literacy, Index of Deprivation (IOD) and Literacy Development Index (LDI) between Uttar Dinajpur and based on secondary data. The total literacy, male female literacy differences of both the districts are taken into consideration and compared to state and country level. The blocks of the districts are arranged into categories based on values of the LDI. The gaps are portrayed through statistical methods and cartographic techniques. A summarized interpretation is presented at the concluding section.

Keywords: Absolute Gender Gap, Index of Deprivation (IOD), Literacy Development Index (LDI)

1. Introduction

Development is a multi-dimensional concept, having dynamic character. Literacy is the base of the development of any society. It is one of the prime indicators for human resource development which influences the quality of life, the status of income and level of skills of people in a society. The literacy rate of West Bengal is near the national average, but still there is huge inter-district variation in case of literacy rates. "Regional imbalance and inequality is observed among different districts which maintained a zonal pattern. The literacy is ……comparative low in North Bengal districts and Plateau districts of Bengal" [1]. Purulia is a part of the Rarh plateau regions of West Bengal and Uttar Dinajpur is located in North Bengal, both having very lower percentage of literacy rates of 59.1% and 65.38% respectively in comparison with state average of 76.26% and national average of 77.08% in literacy [2]. having state rank of 16 and national rank of 502, and Uttar Dinajpur having state rank of 17 and national rank of 505 [3] are taken into consideration for determining the inter and intra-district level of literacy development. There is a lot of spatial variation among the districts in terms of CLR (Crude Literacy Rate) and FLR (Female Literacy Rate). The study focuses on Absolute Gender Gap in literacy, Index of deprivation in literacy and the level of Literacy Development of Purulia and Uttar Dinajpur.
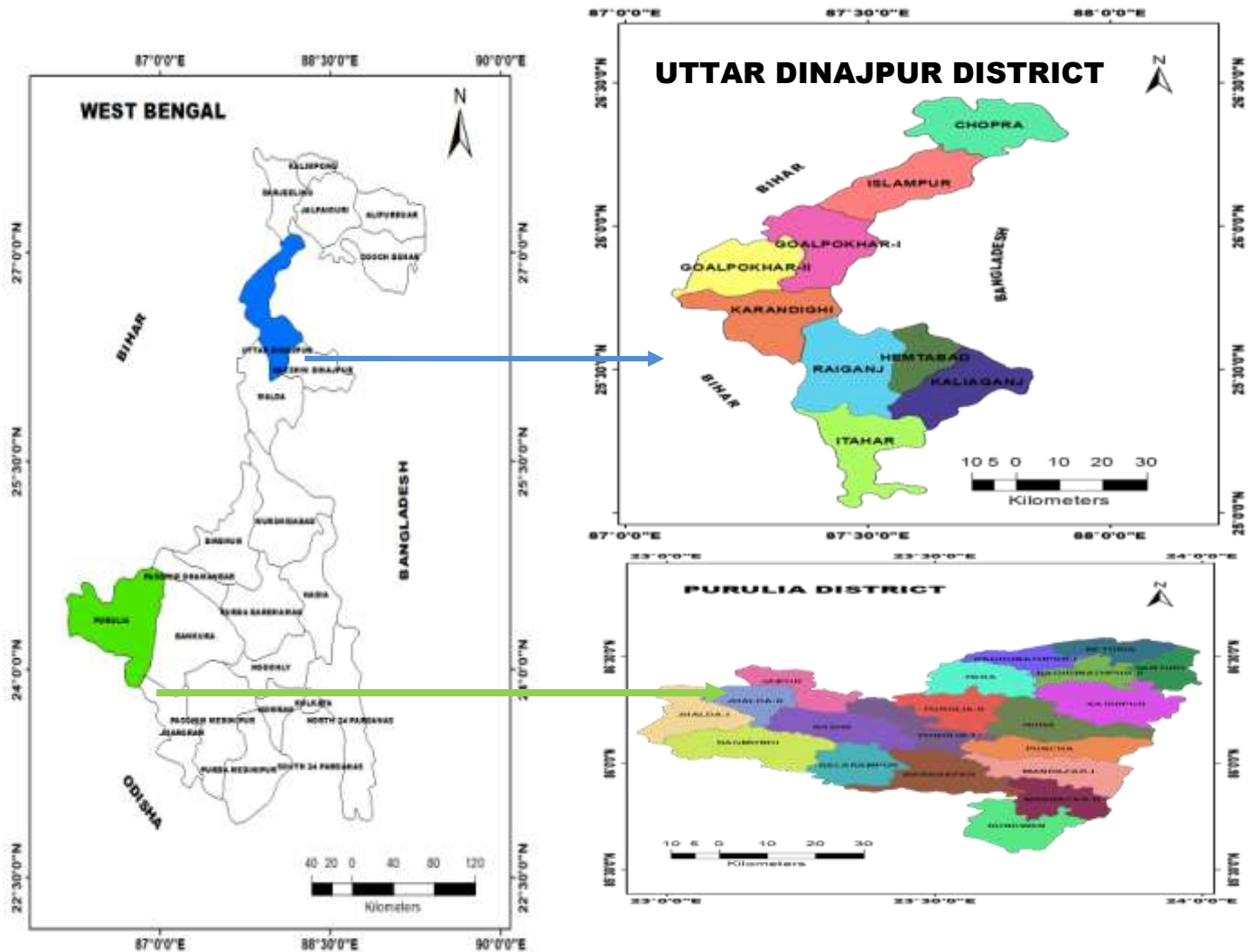
2. Study Area

Two districts of West Bengal, Purulia (85°30'E to 86°30'E & 23°00'N to 24°00'N) from Rarh Bengal and Uttar Dinajpur (87°00'E to 88°00'E & 25°00'N to 26°30'N) from North Bengal (Map 1) are taken for the comparative study. Both the districts are lowest ranked districts in terms of total literacy in West Bengal; having 65.38% in Purulia and 60.13% in Uttar Dinajpur [2]. Percentage of male literates in Purulia and Uttar Dinajpur are 77.86% and 65.52%; whereas percentage of female literates in Purulia and Uttar Dinajpur are 50.52% and 52.17% respectively [2]. The Literacy Development Index of and Uttar Dinajpur being 0.17 and 0.02 respectively.

3. Objectives

The present study has been taken up to-

i)   Analyse the level of literacy development in Purulia and Uttar Dinajpur.

ii) Comparative analysis of Inter and intra district level literacy development scenario between Purulia and Uttar Dinajpur

iii) Comparing and Uttar Dinajpur with National and State level of Literacy development index to determine the relative position.

Map 1: Location Map of the Study Areas

iv) **Database and Methodology**

4.1 Database: The present study is based on secondary data sources. The census data of 2011 for Purulia , Uttar Dinajpur [4] are mainly focused on to obtain the spatial variation of literacy development and the census data of West Bengal and India are considered for the purpose of determining the deviation of the literacy development of the aforesaid districts from state and national level values. Some published articles and papers are reviewed for preparing the conceptual framework.

4.2 Methodology: The methodology follows a series of statistical calculations

a. **Absolute Gender Gap**= Male Literacy-Female Literacy

b. Blocks of each district are ranked according to the values of absolute gender gap in literacy.

c. **Literacy Development Index:** UNDP-HDI (1995 and 1998) [5] framework and Madhya Pradesh Human Development Report 1995 and 1998 [6] are used to calculate the Literacy Development Index (LDI).

i) LDI is calculated on the basis of a) Crude Literacy Rate (CLR), b) Female Literacy Rate (FLR) and Index of Deprivation (IOD) using the following formula:

$$\text{IOD}_{ij} = (\text{Target}_j - \text{Value}_{ij} / \text{Target}_j - \text{Min}_j)$$

Where, IOD = Index of Deprivation for the ith block for j^{th} criterion (literacy).

Target_j = National Literacy Mission Target (80%literacy). Min_j = Minimum value for the jth criterion. Value_{ij}= Value of the ith block for j^{th} criterion.

E.g.: The IOD and CLR of Kashipur Block of Purulia District (2011) are calculated as: Target_j=80 Min_j =45.58 (Jhalda-II) Value $_{ij}$= 62.63 (Literacy rate of Kashipur Block)

IOD of Kashipur Block of District= (80-62.63) / (80-45.58) = 17.37/34.42= 0.50

Index of Deprivation reveals the level of destitution of a block in comparison with the most performing block of that district in terms of literacy development.

ii) Composite Index of Deprivation (CIOD) is calculated by giving 2/3rd weightage to IOD of Crude Literacy Rate and 1/3rd weightage to IOD of Female Literacy Rate, i.e.

CIOD= (2*A+1*B)/3

Where, A= IOD of Crude Literacy Rate; B=IOD of Female Literacy Rate.

iii) Literacy Development Index (LDI) is computed from the formula: **LDI = (1-CIOD)**

d. The block wise variation and disparity in Literacy development index is calculated using Standard Deviation and Coefficient of Variation. The following formula are used:

MEAN= ΣX/N ; SD= $\sqrt{\{(X\text{-}\bar{x})^2/N\}}$; CV= (SD/MEAN)*100

e. Cartographic techniques like bar graph have been used to portray the nature of different factors and choropleth map is used to show the variability of LDI in both the districts on spatial scale.

5. Results and Discussions

Based on the male and female literacy rates at block level, the Absolute gender gap in literacy is found out for the two districts.

Table 1: Rank Based on Absolute Gender Gap in Literacy of District

Sl. No.	Name of the Blocks	Male Literacy (%)	Female Literacy (%)	Absolute Gender Gap (%)	Rank
1	Jaipur	64.34	35.66	28.68	17
2	Purulia - II	61.74	38.26	23.48	9
3	Para	62.57	37.43	25.13	15
4	Raghunathpur - II	61.95	38.05	23.90	11
5	Raghunathpur - I	60.55	39.45	21.11	4
6	Neturia	61.38	38.62	22.76	7
7	Santuri	60.76	39.24	21.53	5
8	Kashipur	59.20	40.80	18.40	1
9	Hura	60.38	39.62	20.77	3
10	Purulia - I	62.25	37.75	24.50	14
11	Puncha	60.24	39.76	20.48	2
12	Arsha	65.15	34.85	30.31	19
13	Jhalda - I	61.83	38.17	23.66	10
14	Jhalda - II	67.51	32.49	35.01	20

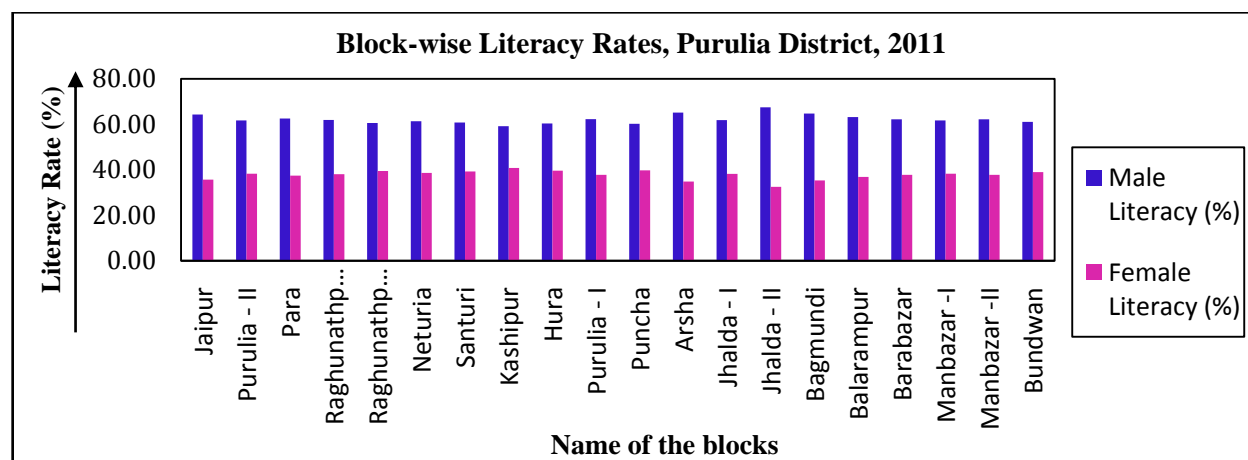| 15	Bagmundi	64.71	35.29	29.41	18
16	Balarampur	63.15	36.85	26.31	16
17	Barabazar	62.21	37.79	24.42	12
18	Manbazar -I	61.69	38.31	23.38	8
19	Manbazar -II	62.22	37.78	24.44	13
20	Bundwan	61.04	38.96	22.09	6

Source: Computed by author(s)

Table 2: Rank Based on Absolute Gender Gap in Literacy of Uttar Dinajpur District

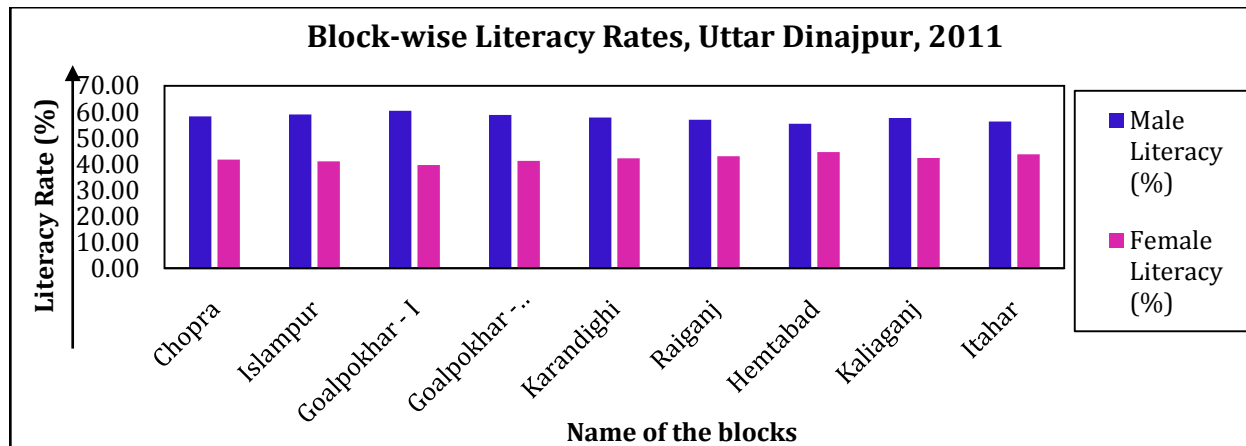| Sl. No.	Name of the Blocks	Male Literacy (%)	Female Literacy (%)	Absolute Gender Gap (%)	Rank
1	Chopra	58.29	41.71	16.59	6
2	Islampur	59.01	40.99	18.01	8
3	Goalpokhar - I	60.40	39.60	20.79	9
4	Goalpokhar - II	58.82	41.18	17.64	7
5	Karandighi	57.85	42.15	15.69	5
6	Raiganj	56.99	43.01	13.98	3
7	Hemtabad	55.43	44.57	10.86	1
8	Kaliaganj	57.69	42.31	15.37	4
9	Itahar	56.31	43.69	12.62	2

Source: Computed by author(s)

Fig. 1: Block-Wise Literacy Rates, District, 2011

Source: Based on Table 1

Fig. 2: Block-Wise Literacy Rates, Uttar Dnajpur District, 2011

Source: Based on Table 2

"The gender discrimination has been formalised and institutionalised through a plethora of cultural norms and practices and this has contributed in no small measure to gender gap or gender disparity in all spheres of life" [7], which includes literacy as a main factor. The achievement and advancement of a society largely depends on the position of woman, which is evident from the gender gap values. Here, in Purulia District Kashipur holds 1st rank indicating least gender disparity in literacy while Jhalda-II holds the lowest rank i.e., 20 showing a relatively higher gender disparity in literacy (Table 1, Figure 1). On other side, in Uttar Dinajpur, Hemtabad block holds 1st rank focusing on relatively lower gender disparity in literacy and Goalpokhar-I which holds the lowest rank shows a wider difference between male and female literacy rate (Table 2, Figure 2).

Table 3: Block Wise Literacy Development Indices, District, 2011

Name of the Blocks	Literacy Rate		Index of Deprivation			LDI = (1-CIOD)
	CLR	FLR	CLR(A)	FLR(B)	CIOD (A*2+B*1)/3	
Jaipur	48.78	35.66	0.91	0.93	0.91	0.09
Purulia - II	53.88	38.26	0.76	0.88	0.80	0.20
Para	56.01	37.43	0.70	0.90	0.76	0.24
Raghunathpur -II	57.95	38.05	0.64	0.88	0.72	0.28
Raghunathpur - I	58.94	39.45	0.61	0.85	0.69	0.31

Neturia	56.37	38.62	0.69	0.87	0.75	0.25
Santuri	55.54	39.24	0.71	0.86	0.76	0.24
Kashipur	62.63	40.80	0.50	0.83	0.61	0.39
Hura	59.95	39.62	0.58	0.85	0.67	0.33
Purulia - I	55.35	37.75	0.71	0.89	0.77	0.23
Puncha	59.33	39.76	0.60	0.85	0.68	0.32
Arsha	45.51	34.85	1.00	0.95	0.98	0.02
Jhalda - I	56.13	38.17	0.69	0.88	0.75	0.25
Jhalda - II	45.58	32.49	1.00	1.00	1.00	0.00
Bagmundi	47.90	35.29	0.93	0.94	0.93	0.07
Balarampur	51.60	36.85	0.82	0.91	0.85	0.15
Barabazar	54.43	37.79	0.74	0.89	0.79	0.21
Manbazar -I	55.59	38.31	0.71	0.88	0.76	0.24
Manbazar -II	52.93	37.78	0.78	0.89	0.82	0.18
Bundwan	53.52	38.96	0.77	0.86	0.80	0.20

Source: Computed by Author(s)

Map 2: Categorisation Based on Literacy Development Index, District, 2011
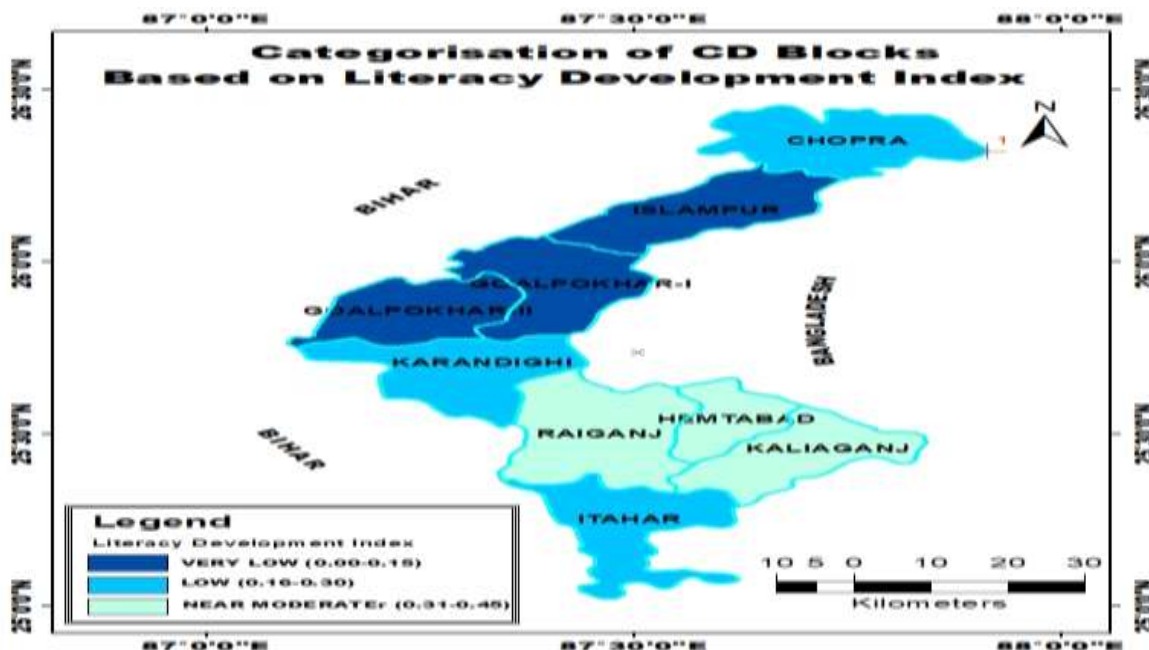

Source: Based on Table 3

Table 4: Block Wise Literacy Development Indices, Uttar Dinajpur District, 2011

Name of the Blocks	Literacy Rate		Index of Deprivation			LDI = (1-CIOD)
	CLR	FLR	CLR (A)	FLR (B)	TLR CIOD (A*2+B*1)/3	
Chopra	49.42	41.71	0.67	0.95	0.76	0.24
Islampur	43.50	40.99	0.80	0.97	0.85	0.15
Goalpokhar - I	34.24	39.60	1.00	1.00	1.00	0.00
Goalpokhar - II	37.31	41.18	0.93	0.96	0.94	0.06
Karandighi	43.70	42.15	0.79	0.94	0.84	0.16
Raiganj	54.44	43.01	0.56	0.92	0.68	0.32
Hemtabad	58.34	44.57	0.47	0.88	0.61	0.39
Kaliaganj	57.74	42.31	0.49	0.93	0.64	0.36
Itahar	50.50	43.69	0.64	0.90	0.73	0.27

Source: Computed by Author(s)

Map 3: Categorisation Based on Literacy Development Index,Uttar Dinajpur District, 2011

Source: Based on Table 4

In case of Purulia District, Average Crude Literacy Rate and Female Literacy Rate for the year 2011 were 54.39 and 37.76 respectively. Blocks having Crude Literacy Rate (CLR) above the district average are Manbazar I, Barabazar, Jhalda I, Puncha, Purulia I, Hura, Kashipur, Santuri, Neturia, Para and Raghunathpur I & II. Rest of the blocks has CLR below district average (Table 3). In Seven blocks namely Jaipur, Para, Purulia I, Arsha, Jhalda II, Bagmundi, Balarampur ,Female Literacy Rate (FLR) couldn't reach the district average while rest of the blocks are showing higher trend than the average level.

On the other hand, in Uttar Dinajpur District, Average Crude Literacy Rate and Female Literacy Rate were found to be 54.39 and 37.76 respectively. Islampur, Goalpokhar I & II and Karandighi are representing relatively lower value of CLR than the district level average. Beside this, 5 blocks namely Karandighi Raiganj, Hemtabad, Kaliaganj and Itahar, show higher values from average district value in case of FLR.

Status of Index of Deprivation (IOD) in case of total literacy of Purulia district represents 8 blocks were more deprived with respect to rest of the blocks, which are Jaipur, Purulia II, Arsha, Jhalda II, Bagmundi, Balarampur, Manbazar II, Bandwan. Barabazar is the only one block whose IOD value is (0.79) (Table 4). The higher values of IOD denotes the lower values of Literacy Development Index (LDI), representing relatively less development in literacy with respect to rest of the blocks and vice-versa.

In Uttar Dinajpur, IOD values reveal that 4 blocks were more deprived than the district average (0.78) namely Islampur, Goalpokhar-I, Goalpokhar-II and Karandighi. The highest LDI is found in Hemtabad Block (0.39), having lower IOD value (0.61), indicating a relatively near moderate development in literacy. Whereas, lowest LDI is found in Goalpokhar-I Block (0.00) and having highest IOD value (1.00), showing relatively less development in literacy (Table 4).

Table 5: Comparative Categorisation of Purullia & Uttar Dinajpur Based on LDI

Category		% of Blocks	Uttar Dinajpur	% of Blocks
Very Low (0.00-0.15)	Jhalda II, Arsha, Jaipur, Bagmundi, Balarampur	25	Goalpokhar I, Goalpokhar II, Islampur	33.33
Low (0.16-0.30)	Purulia II, Para, Raghunathpur II, Neturia, Santuri, Purulia I, Jhalda I, Barabazar, Manbazar I, Manbazar II,Bundwan	55	Chopra, Karandighi, Itahar	33.33
Near Moderate (0.31-0.45)	Raghunathpur I, Kashipur, Hura,Puncha	20	Raiganj, Kaliaganj, Hemtabad	33.33

Source: Based on Table 3 & 4

None of the blocks of either Purulia or Uttar Dinajpur have attained the LDI value of 0.5 or more(Table 5). The highest and lowest LDI value for both the districts is 0.39 and 0.00. Jhalda II, Arsha, Jaipur, Bagmundi, Balarampur of Purulia district and Goalpokhar I, Golpokhar II and Islampur of Uttar Dinajpur district, belongs to very low category. Purulia I, Purulia II, Para, Raghunathpur II, Neturia, Santuri, Jhalda I, Barabazar, Manbazar I, Manbazar II and Bundwan of Purulia district and Chopra, Karandighi and Itahar of Uttar Dinajpur district are in low catergory. Raghunathpur I, Kashipur, Hura, Puncha of Purulia district and Raiganj, Kaliaganj, Hemtabad of Uttar Dinajpur district have a near moderate LDI value (Map 2 & 3).

Table 6: Comparison of LDI of Study Areas with West Bengal and India Level

Type	Name	LDI	MEAN	SD	CV
Districts		0.17	0.41	0.38	22.62
	Uttar Dinajpur	0.02			
State	West Bengal	0.69			
Country	India	0.77			

Source: Computed by Author(s)

The coefficient of variation in values between the district ,State and nation level shows a variability of about 22.62% (Table 6). This portrays a large range of disparity between the LDI of and Uttar Dinajpur as compared with West Bengal and India.

Conclusion

and Uttar Dinajpur are two of the least developed districts of West Bengal. The analysis of 2011 census data reveals that Purulia and Uttar Dinajpur both are not satisfactory in terms of literacy and Literacy Development Index. None of the Blocks of either Purulia or Uttar Dinajpur has attained the LDI value of 0.5 or more. The highest LDI value in both the districts is 0.39, which is not even in moderate category. The absolute gender gap is also very alarming. When compared to the state and national level LDI, a coefficient of variation of 22.62 is found, which implies a broad disparity level. So, proper channelization and educational management should be done in both the districts to improve the overall scenario.

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